

Former Circle M Wood Treatment Site
DUTCHESS COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 3-14-083

Prepared for:

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Revisions to Final Approved Site Management Plan:

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CERTIFICATION

I, Mark P. Millspaugh, P.E., certify that I am currently a New York State registered professional engineer and that this Site Management Plan (SMP) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Mark P. Millspaugh, P.E.

Date

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Former Circle M Wood Treatment Site (hereinafter referred to as the “Site”) administered under the New York State (NYS) Brownfield Cleanup Program (BCP) by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# W3-1077-05-09, Site # 3-14-083, which was executed on December 12, 2005.

1.1.1 General

Chelsea Waterfront Development, LLC entered into a BCA with the NYSDEC to remediate a 19.9 acre Site located in Fishkill, New York. This BCA required the Remedial Party, Chelsea Waterfront Development, LLC, to investigate and remediate contaminated media at the Site. A figure showing the Site location and boundaries of this 19.9-acre Site is provided in Figure 1. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement (provided as Appendix A).

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this Site, which is hereafter referred to as “remaining contamination.” This Site Management Plan (SMP) was prepared to manage remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Sterling Environmental Engineering, P.C. (STERLING), on behalf of Chelsea Waterfront Development, LLC, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated June 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) required by the Environmental Easement.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. Engineering Controls (ECs) have been incorporated into the Site remedy to control exposure to remaining contamination during the use of the Site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Dutchess County Clerk, will require compliance with this SMP and all ECs and ICs placed on the Site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the Site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; and (2) a Monitoring Plan for implementation of Site Monitoring. This SMP also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the BCA (Index #W3-1077-05-09; Site #C3-14-083) for the Site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the Site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in the Town of Fishkill, Dutchess County, New York and is identified as portions of the Fishkill Tax Map Parcels 5955-02-798930 and 5955-02-791875. The Site is an approximate 19.9-acre area located within Chelsea Industrial Park, which is bounded by Industrial Way to the south, an unnamed stream to the east, and railroad tracks and the Hudson River to the west (see Figure 1). The boundaries of the Site are more fully described in Appendix A – Environmental Easement & Metes and Bounds.

1.2.2 Site History

The Circle M facility was operated by Circle M Wood Treatment Corp. from 1986 to 1990. Circle M was a lumber treatment business that produced pressure-treated, insect-resistant wood. The Circle M treatment process utilized chromated copper arsenate (CCA), a blend of arsenic acid (As₂O₅), chromic acid (CrO₃), and copper oxide (CuO), all in a solution of water.

The substances of concern, copper (Cu), chromium (Cr) and arsenic (As), are present in surface soil beneath the former Circle M building and in adjacent outdoor areas

that were used for storage of treated lumber. The Circle M lumber treatment operation resulted in spills of CCA prior to 1990.

In 1986, Circle M was cited by the NYSDEC for Resource Conservation and Recovery Act (RCRA) violations, including the improper storage of treated wood. Between 1987 and 1989, the property owner conducted two site investigations. The Site was placed on New York State's Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 Site in 1990. Between 1990 and 1997, several removal activities were conducted at the Site, including removal of 256 drums of liquid waste and 18,000 gallons of liquid waste stored in onsite tanks.

1.2.3 Geologic Conditions

The Site soils are characterized by thick lacustrine deposits of silt and clay overlain by 2 to 8 feet of gravel/fill. Surficial material within the uppermost two feet consists primarily of fill, including crushed rock fragments, cobbles and bricks. Sediments below the fill material consist of gray clay with some mottling and no sand. Bedrock was not encountered in any of the borings. Parts of the Site are covered with asphalt pavement and concrete at the surface.

The groundwater flow direction in the overburden soil is east/northeast. The depth to the groundwater table ranges from 4 to 11 feet below ground surface (bgs) and is in the silt/clay layer.

A groundwater flow figure is shown in Figure 2.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the following reports:

- **Focused Remedial Investigation**

In 1997, the NYSDEC issued an Order on Consent, which set forth requirements for the respondents to voluntarily undertake a Focused Remedial Investigation (FRI) and Focused Feasibility Study (FFS). The Order on Consent was effective in June 1997.

The FRI included: 1) Installation of a monitoring well immediately south of the Circle M concrete drip pad; 2) Collection of groundwater samples from the new monitoring well and the five (5) existing onsite monitoring wells; and 3) Stream sediment sampling. Results of this work are summarized in the FRI report dated September 9, 1998 (Conrad Geoscience, 1998).

The FRI report concludes that samples from the six (6) onsite monitoring wells contained Cu, Cr and As at concentrations exceeding NYSDEC standards. Filtered samples from monitoring wells MW-1, MW-3 and MW-7 contained no detectable As, Cr or Cu, indicating that the majority of metals in groundwater were adsorbed to particulate matter. Stream sediments contained lower concentrations of As, Cr and Cu than previously measured, however the 1998 FRI concentrations still remained above NYSDEC standards.

- **Supplemental Field Investigations**

In January 1999, the Focused Feasibility Study (FFS) was initiated. In a letter dated January 29, 1999, the NYSDEC stipulated that additional field investigations should be completed as part of the FFS. Supplemental field investigations included: 1) Soil sampling and analysis to delineate the vertical distribution of As, Cr and Cu within the uppermost six (6) feet of soil; and 2) Completion of a Biological Resource Inventory & Impact Assessment to determine whether onsite receptors, including stream flora and fauna, show signs of impact from metals. Results of these field investigations are summarized in the FFS.

In April 2000, the NYSDEC requested additional sampling, including areas not previously sampled (under the Circle M floor and all outdoor lumber storage areas) and an expanded FRI sampling plan was prepared. This Supplemental RI

Work Plan was approved by the NYSDEC on April 26, 2001. In May 2001, additional sampling was completed on stream sediments and groundwater, concentrating on the outdoor lumber storage areas as well as soil and groundwater quality directly beneath the Circle M building. Results of these field investigations are summarized in the Supplemental RI Report dated July 6, 2001. Following review of the FRI report, the NYSDEC issued a letter dated July 23, 2001 directing that the FFS be prepared.

The NYSDEC subsequently indicated that additional soil sampling was necessary in order to more fully delineate the area of Chelsea Industrial Park affected by past releases of CCA. Accordingly, two (2) rounds of additional soil sampling and analysis were conducted in February and April 2002. These samples were collected from within and near known outdoor lumber storage areas to determine whether residual copper (Cu), chromium (Cr) or arsenic (As) were present in shallow soils.

The results of the supplemental soil investigation are summarized in the September 13, 2002 Supplemental RI Report.

- **Focused Feasibility Study (FFS)**

The FFS evaluated various remedial options and technologies in satisfaction of program requirements. Remedial alternatives were developed and evaluated in terms of protection of human health and the environment, compliance with applicable or relevant and appropriate requirements (ARARs), long-term effectiveness and permanence, reduction of toxicity, mobility, and volume through treatment, short-term effectiveness, implementability, and cost.

Alternatives were then ranked. The FFS and the recommended remedy served as

the foundation for the NYSDEC's Record of Decision (ROD).

- **Remedial Design Investigations**

During July and August 2006, six (6) new wells were installed. These installations included the three (3) new bedrock monitoring well installations required under the approved Remedial Work Plan and the installation of various replacement wells to reestablish prior monitoring locations which were damaged or lost. Following installation, all wells were sampled.

During July and September 2006, sediment sampling was conducted in the stream and at the eastern drainageway of the stream.

- **2012 Supplemental Remedial Investigation**

In March 2012, a Supplemental Remedial Work Plan was prepared to address additional sampling requested by the NYSDEC and supplement the Remedial Design outlined in the approved ROD.

The NYSDEC determined the need for additional sampling to support the Remedial Design. The purpose of the additional sampling was to: 1) provide data in areas where little or no information had been obtained regarding contaminants in soil other than Cu, Cr, As; and 2) refine the Remedial Design regarding opportunities for consolidation and limits of the cap.

Nine (9) soil boring locations (SB-1 through SB-9) were selected for full Target Compound List/Target Analyte List (TCL/TAL) analysis. Soil samples at these locations were collected from the 0-6, 6-12, 12-18, and 18-24 inch soil depth horizons.

Additionally, 48 surficial soil samples (SS-1 through SS-48) were collected around the proposed limits of the excavation and consolidation areas and analyzed for Cu, Cr and As. These samples were collected to aid in refining the limits of the proposed excavation and consolidation areas. At the direction of the NYSDEC, seventeen (17) boring locations (SSB-1 to SSB-17) were collected from the 0-24 inch soil horizon and analyzed for Cu, Cr and As.

Groundwater samples were collected from six (6) onsite wells: MW-4, MW-5, MW-6, MW-7R, MW-8, and MW-9S.

The results of the 2012 investigation are detailed in the Supplemental Investigation Report (SIR) dated December 3, 2012.

Generally, the RI determined that levels of Cu, Cr and As in Site soils and groundwater exceed applicable Standards, Criteria and Guidelines (SCGs) for the Site.

Below is a summary of Site conditions when the RI was performed in 1997 through 2012:

Soil

As summarized in Table 1 and Appendix B, the main categories of contaminants that exceed SCOs are As, Cr, and Cu. During the RI conducted from 1998 to 2002, locations of the highest contaminant concentrations in surface soil were: As at GB-13 under the building (557 ppm); Cr at 326 ppm at GB-40 northeast of the Circle M building; and Cu at 296 ppm at GB-40. At depths greater than 6 inches, the location of the highest contaminant concentration was GB-14, which contained As at 505 ppm, Cr at 1,225 ppm, and Cu at 665 ppm.

Results of the soil analysis from the most recent sampling event in 2012 are shown on Table 1 and Figure 3. Of the nine (9) soil boring locations, SB-4 (0-6") was the only one that contained As above the SCO of 16 mg/Kg. Out of the 48 surface soil samples (0-6"), 24 contained As at levels above the SCO. Arsenic (As) concentrations in these samples ranged from 16.1 to 104 mg/Kg. Of the 17 soil samples collected from the 0 to 24" interval, only SSB-4 contained As slightly above the SCO.

Site-Related Groundwater

Initial groundwater monitoring for the Remedial Work Plan began in 2006. Annual groundwater monitoring has been conducted from 2006 to 2013. A summary of groundwater sample results is included in Appendix C, which also contains the locations of the monitoring well network. During the 2013 sample event, arsenic was detected in two monitoring wells above Class GA Groundwater Standards. Cu and Cr were not detected in any of the monitoring wells. Groundwater sampling was also conducted during the SRI in 2012. Table 2 shows results of this sampling event.

In June 2014, the NYSDEC approved a request to terminate the groundwater monitoring program.

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site was remediated in accordance with the NYSDEC-approved Remedial Design Work Plan dated March 2014.

The following is a summary of the Remedial Actions performed at the Site:

1. Demolition of the former treatment buildings;
2. Excavation and consolidation of soil/fill exceeding restricted residential SCOs listed in Table 3, to a depth of 12 inches in one area and six (6) inches in a second area as shown on Figure 4;
3. Construction and maintenance of a soil cover system consisting of a demarcation geotextile fabric and clean fill to prevent human exposure to

remaining contaminated soil/fill remaining at the Site. A Community Air Monitoring Plan (CAMP) was in place during completion of this work;

4. Implementation of an erosion control program to stabilize soils on the stream bank and cut and fill areas of the main Site;
5. Installation of three (3) bedrock monitoring wells (one upgradient and two downgradient) and one (1) upgradient overburden well;
6. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the Site.
7. Development and implementation of this Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Remedial activities at the Site began in 2006 and were completed July through September 2014.

1.4.1 Management of Contaminated Materials at the Site

The Site was remediated based on Restricted Residential Use Soil Cleanup Objectives (SCOs). A list of the SCOs for the primary contaminants of concern and applicable land use for this Site is provided in Table 3.

Approximately 94,500 square feet (sf) of soil was excavated to a depth of twelve (12) inches below ground surface (bgs), and 46,600 sf was excavated to a depth of six (6) inches bgs, and relocated to the onsite consolidation area. The consolidation area and remaining areas of contaminated soil were covered by a demarcation geotextile and two (2) feet of clean fill. The fill was obtained from a stockpile located on an adjacent property remaining from the excavation for a residential development. The fill stockpile was sampled and the results are shown on Tables 5 and 6. NYSDEC approved the fill for reuse at the Site on June 25, 2014 (see Appendix D).

A figure showing areas where excavation was performed and the consolidation area is shown in Figure 4. A cross-section of the cover system is shown in Figure 5.

1.4.2 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the Site remedy.

1.4.3 Remaining Contamination

Analytical results for all confirmatory soil samples collected during the remedial action are reported at concentrations that are less than or equal to the 6 NYCRR Part 375-6.8(b) Restricted Residential Use SCOs. Some soil contamination remains at the Site at levels exceeding 6 NYCRR Part 375-6.8(b) Unrestricted Use SCOs.

Table 4 and Figure 6 summarize the results of the post-excavation sampling of the soils remaining at the Site after completion of Remedial Action that exceed the Track 1 (unrestricted) SCOs.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil exists beneath the Site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the Site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the Site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the Site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover

Exposure to remaining contamination in soil/fill at the Site is prevented by a soil cover system placed over the Site. This cover system is comprised of a minimum of 24 inches of clean soil over a demarcation geotextile fabric. The Excavation Work Plan that appears in Appendix E outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Monitored Natural Attenuation

The NYSDEC approved halting the periodic groundwater monitoring at the Site in June 2014. Therefore, no additional groundwater monitoring at the Site is proposed.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the ROD to: (1) maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to Restricted Residential uses only. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Site must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Site must be reported at the frequency and in a manner defined in this SMP;

ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

Site restrictions that apply to the Site are:

- The property may only be used for restricted residential use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
- The potential for vapor intrusion must be evaluated for any buildings developed on the Site property, and any potential impacts that are identified must be monitored or mitigated;
- Vegetable gardens and farming on the property are prohibited;
- The Site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the

controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access the Site at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

The Site has been remediated for restricted residential use. Any future intrusive work that will penetrate the soil cover or cap, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) provided as Appendix E to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the Site. A HASP and CAMP that are in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations are provided as Appendix F. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section E-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Periodic Review Report (see Section 5.3).

The Site owner and associated parties preparing the remedial documents submitted to the State, and parties performing any intrusive work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The Site owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

The RI did not identify the presence of volatile organic contamination of soil or groundwater. Notwithstanding, prior to the construction of any enclosed structures located over areas that contain remaining contamination, the potential for soil vapor intrusion (SVI) will be evaluated. If the potential for SVI is identified, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York”. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the Site will be conducted at the frequency specified in the SMP Monitoring Plan schedule in Section 3.0. A comprehensive Site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Report section of this plan (Section 5.3).

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

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6 NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.

- Notice within 48-hours of any damage or defect to the foundation, structures or engineering control that reduces or has the potential to reduce the effectiveness of an Engineering Control and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

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

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

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the Site

Owner's Emergency Coordinator, currently STERLING. These emergency contact lists must be maintained in an easily accessible location at the Site.

Emergency Contact Numbers*

Medical, Fire, and Police:	911
Dig Safely NY:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Contact Numbers*

Qualified Environmental Professional (currently STERLING)	(518) 456-4900
Site Supervisor & Site Owner's Emergency Coordinator	TO BE ASSIGNED
Health and Safety Manager	TO BE ASSIGNED
Site Safety Officer (Field Supervisor)	TO BE ASSIGNED

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Brockway Road, Town of Fishkill, NY

Nearest Hospital Name: St. Luke's Cornwall Hospital (Newburgh Campus)

Hospital Location: 70 Dubois Street, Newburgh, NY

Hospital Telephone: (845) 561-4400

Directions to the Hospital:

1. Start at Brockway Road
2. Turn Right on RT-9D - go 0.8 mi
3. Bear Right onto I-84 WEST toward NEWBURGH - go 2.5 mi
4. Take exit #10S/RT-32 toward US-9W S/Newburgh – go 0.3 mi
5. Turn Right onto NY-32 S/N Plank Rd. - go 0.2 mi
6. Turn Right onto Albany Post Rd./N Robinson Ave. – go 0.9 mi
7. Turn Left on South St. – go 0.3 mi
8. Take the first right onto DUBOIS ST, NEWBURGH, Hospital on the Left

Total Distance: 5.9 miles

Total Estimated Time: 13 minutes.

Map Showing Route from the Site to the Hospital:

ST. LUKE'S CORNWALL HOSPITAL
 70 DUBOIS STREET
 NEWBURGH, NY 12550



DIRECTIONS TO ST. LUKE'S CORNWALL HOSPITAL:

- | | |
|---|--------|
| 1. HEAD EAST ON BROCKWAY RD/INDUSTRIALWAY | 0.2 MI |
| 2. TURN LEFT ONTO BROCKWAY RD | 0.5 MI |
| 3. TAKE THE 2ND RIGHT ONTO NY-9D S | 0.8 MI |
| 4. SLIGHT RIGHT TO MERGE ONTO I-84 | 2.5 MI |
| 5. TAKE EXIT 10S FOR NY-32 TOWARD US-9W S/NEWBURGH | 0.2 MI |
| 6. KEEP RIGHT AT THE FORK AND MERGE ONTO NY-32/PLANK RD | 0.2 MI |
| 7. TURN RIGHT ONTO ALBANY POST RD/N ROBINSON AVE | 0.9 MI |
| 8. TURN LEFT ONTO SOUTH ST | 0.3 MI |
| 9. TAKE THE 1ST RIGHT ONTO DUBOIS ST | 0.2 MI |

LEGEND:

→ HOSPITAL ROUTE

2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Section 2.5.1). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

In the event of a spill, it will be contained through the use of equipment provided in the Emergency Response Station (ERS), including spill booms, absorbent pads and granular adsorbents. After the placement of spill control devices, the source of the spill will be identified and eliminated. Resultant waste materials will be placed in secure 55 gallon drums for removal from the Site for proper disposal. In the event of the discovery of any spill, the Site Owner's Emergency Coordinator listed in Section 2.5.1 will be contacted immediately. For petroleum spills, the NYSDEC Spills Hotline (1-800-457-7362) will be called within two (2) hours of discovery of the spill unless:

- The quantity is known to be less than five (5) gallons;
- The spill is contained and under the control of the spiller;
- The spill has not and will not reach the State's water or any land; and
- The spill is cleaned up within two (2) hours of discovery.

If a hazardous substance that is not petroleum is spilled on the Site, the Owner will determine if a reportable quantity has been spilled following 6 NYCRR Parts 596-598. If required, the NYSDEC Spills Hotline (1-800-457-7362) will be called within two (2) hours of discovery of the spill.

Should emergency conditions at the subject property warrant evacuation, the evacuation will be initiated and all staff personnel, facility customers, and the Site Owner's Emergency Coordinator will be notified. Upon notification to evacuate, facility personnel and customers will proceed in an orderly manner to leave and proceed upwind from the Site.

Amendment to the Contingency Plan will be made as necessary, if changes in response procedures are required.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, the soil cover system, and all affected Site media identified below. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria;
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Annual monitoring of the performance of the remedy and overall reduction in contamination onsite will be conducted for the first two years. The frequency thereafter will be determined by NYSDEC. Monitoring programs are summarized in the table below and outlined in detail in Sections 3.2 and 3.3 below.

Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Soil Cover Inspection	Annual	Soil Cover System	Inspection
Site-Wide Inspection	Annual	Monitoring well condition; stormwater drainage catch basins condition	Inspection

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 COVER SYSTEM MONITORING

Inspection of the soil cover system should be conducted when snow/ice are absent. The soil cover will be visually inspected for signs of erosion and areas of bare soil. The Soil Cover System Inspection Form is provided in Appendix G.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Groundwater Monitoring

The NYSDEC approved termination of the periodic groundwater monitoring at the Site in June 2014. Therefore, no additional groundwater monitoring at the Site is proposed.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendices H and I). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Confirm that site records are up to date.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

No media monitoring is proposed for this Site.

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file onsite. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in Section 5 of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared subsequent to each sampling event. The report (or letter) will include, at a minimum:

- Date of event;
- Personnel conducting sampling;

- Description of the activities performed;
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Any observations, conclusions, or recommendations; and

A summary of the monitoring program deliverables are summarized in the table below.

Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Site-Wide Inspection	Annual
Soil Cover Inspection	Annual

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

The Site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3, Monitoring Plan of this SMP. At a minimum, a Site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendix G (Soil Cover Inspection Form). Additionally, a general Site-wide inspection form will be completed during the Site-wide inspection (see Appendix H). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented; and
- The Site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and Final Engineering Report (FER).

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional will prepare the following certification:

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

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A"

misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] for the site.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning fifteen months after the Certificate of Completion is issued. In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix A (Environmental Easement & Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site;
- Results of the required annual Site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the Site during the reporting period in electronic format;
- If applicable, a summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media as required by Section 3.3, which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses required by Section 3.3 including copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected

during the reporting period will be submitted electronically in a NYSDEC-approved format;

- A Site evaluation, which includes the following:
 - The compliance of the remedy with the requirements of the Site-specific RAWP, Decision Document and BCA;
 - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
 - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
 - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the Site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.