ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

General Motors LLC

Site Management Plan

Former General Motors Assembly Plant
East Parcel Site
Sleepy Hollow, New York

NYSDEC Site No. C360070B

December 2013

Certification Statement

I, _____, certify that I am currently a New York State registered professional engineer, and that this *Site Management Plan* was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the 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.

_____ _____
Date

NAME

ARCADIS of New York, Inc.
6723 Towpath Road, P.O. Box 66
Syracuse, NY 13214-0066
315.671.9671

Site Management Plan

Former GM Assembly Plant
East Parcel Site
Sleepy Hollow, New York
NYSDEC Site No. C360070B

Prepared for:
General Motors LLC

Prepared by:
ARCADIS of New York, Inc.
6723 Towpath Road
P O Box 66
Syracuse
New York 13214-0066
Tel 315 446 9120
Fax 315 449 0017

Our Ref.:
B0064462.0001

Date:
December 2013

ARCADIS

Site Management Plan

Former GM Assembly Plant
East Parcel Site
Sleepy Hollow, New York
NYSDEC Site No. C360070B

Raymond M Kapp
Principal Scientist
Project Manager

Signature 2 Name
Title

Signature 3 Name
Title

Prepared for:
General Motors LLC

Prepared by:
ARCADIS of New York, Inc.
6723 Towpath Road
P O Box 66
Syracuse
New York 13214-0066
Tel 315 446 9120
Fax 315 449 0017

Our Ref.:
B0064462.0001

Date:
December 2013

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

List of Tables

List of Figures

List of Appendices

J Quality Assurance Plan

K Stormwater Pollution Control Plan

L Letter from New York State Department of Health Re: Soil Vapor Intrusion Investigation

EC As-Built Drawings (Future Submittal after Redevelopment)

Acronyms and Abbreviations

ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	below ground surface
CAMP	Community Air Monitoring Plan
COC	Certificate of Completion
DEIS	Draft Environmental Impact Statement
DPW	Department of Public Works
DUSR	Data Usability Summary Report
ECL	Environmental Conservation Law
EWP	Excavation Work Plan
GM	General Motors
GMC	General Motors Corporation
GM LLC	General Motors LLC
HASP	Health and Safety Plan
HVAC	Heating, Ventilation and Air Conditioning
IC/EC(s)	Institutional and Engineering Control(s)
IRM	Interim Remedial Measures
LEL	Lower Explosive Limit
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation & Maintenance
OMM Plan	Operations and Maintenance Plan
PAH	Polycyclic Aromatic Hydrocarbon
ppmv	parts per million by volume
QA	Quality Assurance
QC	Quality Control
RAOs	Remedial Action Objectives
RI	Remedial Investigation
Roseland	Roseland/Sleepy Hollow, LLC
RWP	Remedial Work Plan
SCOs	Soil Clean-up Objectives
Site	Former General Motors Assembly Plant

SMP	Site Management Plan
SSDS	Sub-Slab Depressurization System
SVI	Soil Vapor Intrusion
SVOCs	Semi-volatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
Village	Village of Sleepy Hollow
VOCs	Volatile Organic Compounds

1. Introduction and Description of Remedial Program

1.1 Introduction

This Site Management Plan (SMP) has been prepared as required as an element of the remedial program at the Former General Motors Assembly Plant, East Parcel Site (hereinafter referred to as the "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# C360070-12-10 which was executed on December 31, 2010 and amended August 20, 2013. The Site is part of the parcel that was covered by the original BCA West Parcel (Index # A3-0514-0305) which was executed with an effective date of May 12, 2005. The effective date of the BCA for the West Parcel, Index No.: C36070-12-10, as amended is also May 12, 2005.

1.1.1 General

General Motors LLC (GM LLC) entered into two BCAs with the NYSDEC to remediate a 96.2 acre property located in the Village of Sleepy Hollow (Village), Westchester County, New York. One BCA was issued for the West Parcel (including South Parcel) and the second BCA was issued for the East Parcel. Both shared a single site identification number (C360070) for the entire property. These BCAs required the Remedial Party, GM LLC, to investigate and remediate contaminated media at the entire property. On August 20, 2013, NYSDEC amended the BCAs and issued two separate BCA site identification numbers, creating the "West Parcel Site" (C360070) and the "East Parcel Site" (C360070B) to allow for independent environmental management of the West Parcel (including South Parcel) and the East Parcel respectively, for redevelopment and future use. This SMP is specific to the East Parcel Site, as redefined in August 2013.

The site location and boundaries of the 28.29-acre East Parcel Site are provided in Figures 1 and 2 respectively. The boundaries of the Site are more fully described in the metes and bounds site description that is part of the Environmental Easement (see Appendices C and D).

After completion of the remedial work described in the Remedial Work Plan (ARCADIS 2012c), some contamination was left in the subsurface at this Site, which is hereafter referred to as 'remaining contamination." This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with Environmental Conservation Law (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 ARCADIS, on behalf of GM LLC in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the

Institutional and Engineering Controls (IC/ECs) that are required by the Environmental Easement for the Site.

The responsibilities of the Owner and the Remedial Party for implementing the SMP are specified in Appendix B. The names and addresses of these parties are also provided in Appendix B.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the Site remedy to control exposure to remaining contamination during the use of the Site to protect public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Westchester County Clerk, will require compliance with this SMP and all IC/ECs placed on the Site. The Institutional Controls place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all IC/ECs. This SMP specifies the methods necessary to document compliance with all IC/ECs 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 IC/ECs; (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 IC/ECs; and (2) a Monitoring Plan for implementation of Site Monitoring Should active measures be required by NYSDEC and NYSDOH for soil vapor or methane mitigation based on soil vapor intrusion sampling, an Operation and Maintenance Plan will be required (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan 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 ECL, 6NYCRR Part 375 and the BCA (Index # C360070-12-10) for the Site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan 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 Village of Sleepy Hollow, County of Westchester New York, and is identified in the BCA, Amendment 1 as Tax Section 115.11, Block 1, Lot 2 and Section 115.11, Block 1, Lot 85 on the Town of Mt. Pleasant Tax Map. The East Parcel Site (Site No. C360070B) contains approximately 28.29 acres of land generally bounded by Sleepy Hollow's DeVries Park to the north; Philipsburg Manor, a restored early 18th century farm with public access, to the northeast; Continental Street gate to the east; residential properties, Sleepy Hollow's Senior Center and Barnhart Park to the east-southeast; Beekman Avenue to the south; and an active Metro-North rail corridor to the West (Figure 2). The boundaries of the Site are more fully described in Appendix D – Metes and Bounds.

1.2.2 Site History

1.2.2.1 Historic Development and Use

Most of the East Parcel Site (low lying area) was formerly an embayment of the Hudson River, at the former mouth of the Pocantico River. Historical fill material was initially placed in a north-south strip across the embayment during the 1840s to support the construction of a railway between New York City and Albany, leaving much of the low lying area of the Site as isolated marsh land, with the Pocantico River routed through a culvert under the railway. By the late 1800s, the Site was part of the Kingsland Estate. By the early 1920s, local government had acquired the Site. The Village (formerly the Village of North Tarrytown) filled a portion of the East Parcel with municipal refuse during the 1920s. Also during this period, the Pocantico River, which had flowed into the Hudson River immediately south of present day Kingsland Point Park, was diverted north of the site to follow the path of a creek that currently discharges through Kingsland Point Park. The Village continued to add soil fill on top of the municipal refuse and throughout the rest of the low lying area of the parcel during subsequent decades to reclaim this area for use as school athletic fields.

General Motors Corporation (GMC) acquired the East Parcel from the Village in 1960 and added additional fill, consisting of dredged sands from the Hudson River, and finished the filled area with asphalt or concrete surfaces to reach the current grade throughout most of the parcel. GMC used the East Parcel for employee parking, and temporary storage of newly assembled automobiles. GMC

constructed an enclosed pedestrian bridge over the railway to access their assembly plant located on the west side of the tracks, a small brick faced building used as a lounge/break room by personnel readying new vehicles for transport offsite via rail and truck, an overhead viaduct and roadway to provide vehicle access to the lot from Beekman Avenue, rail sidings for loading vehicles onto rail cars, and a paved parking area. The brick building and the mechanical ramps used to access rail cars were removed when the assembly plant was demolished (1997-1999). The entrance to the enclosed pedestrian bridge over the railway remains on the site and is secured to prevent access. The viaduct has been closed to all traffic. The asphalt and concrete surfaces, as well as the vegetated soil and drainage ditches along the perimeter areas are part of the existing cover system. Portions of the asphalt and concrete surfaces have been penetrated by vegetation.

The Site is currently maintained in a restricted limited use condition with controlled access. The rail sidings, located along the west side of the Site, are active for occasional temporary storage of rail cars and general access to the tracks by Metro-North. The Village Department of Public Works (DPW) processes construction soil and yard wastes (leaves, grass and tree cuttings) for recycling on the paved area south of the Continental Street entrance under a license agreement with GM LLC. These current uses are supported by an existing cover system, Site access controls consisting of fences and lockable gates, and terms of the Village's license agreement with GM LLC. Other short term license agreements are executed each year for event parking on the East Parcel under Village supervision. Railroad authorities (Metro-North and CONRAIL) exercise easements to access the tracks from the East Parcel.

1.2.2.2 Historic Environmental Reports

When the former assembly plant decommissioning process was initiated, GMC initiated a Phase I Environmental Site Assessment that entailed a thorough assessment of current and historical GMC operations to determine if petroleum or potentially hazardous chemical constituents had been released to the Site environment, on all of their parcels, including the East Parcel Site. This led to a series of subsurface investigations, including the East Parcel Site. The findings of these investigations can be found in the following reports, which have been previously submitted to the NYSDEC:

- *Phase I Environmental Site Assessment, Tarrytown Assembly Plant* (EMCON, 1996)
- *Phase II Environmental Site Investigation, Tarrytown Assembly Plant* (EMCON, 1997)
- *Phase III Extent of Contamination Study, Former Tarrytown Assembly Plant* (EMCON, 2001)

Additionally, on behalf of Roseland/Sleepy Hollow, LLC (Roseland), a former prospective developer of the Site, EcolSciences, Inc. performed soil and groundwater sampling at the Site during August 2002. Their sampling was conducted as part of Roseland's due diligence investigation for the contemplated site use. The findings of that investigation can be found in *Due Diligence Sampling Results for the General Motors Corporation Tarrytown Assembly Plant Property* (EcolSciences 2002).

Data from these reports were used to plan and were made part of a remedial investigation (RI) conducted under the BCA.

At the completion of the RI, GMC conducted a supplemental soil investigation of a portion of the East Parcel that has been contemplated for donation to Historic Hudson Valley. The findings can be found in *Investigation Report for Supplemental Soil Investigation of Proposed East Parcel Donation Land* (ARCADIS 2009). The collective findings of the RI and the supplemental soil investigation within the East Parcel Site are summarized in Section 1.3.

1.2.2.3 Anticipated Future Land Use

The anticipated future uses of the Site are municipal public works, with the possibility of some recreational uses.

The proposed Site Development Plan and other details contemplated for the proposed development are presented in the Findings Resolution adopted by the Village on July 24, 2007 (Village of Sleepy Hollow 2007) and amended on January 25, 2011 (Village of Sleepy Hollow 2011a) and the Special Permit and Concept Plan Approval adopted by the Village on June 7, 2011 (Village of Sleepy Hollow 2011b). The proposed site development plan for all of the former General Motors (GM) Assembly Plant parcels is provided on Figure 4 (which includes the East Parcel).

The BCA for the Site recognizes the intended future uses as restricted-residential/commercial development and open public space. Restricted uses, as defined in 6NYCRR Part 375-1.8, include:

a. "Restricted-residential use", which is the land use category which shall only be considered when there is common ownership or a single owner/managing entity of the site. Restricted-residential use shall, at a minimum, include restrictions which:

    a) Prohibit any vegetable gardens on a site, although community vegetable gardens may be considered with Department approval;

    b) Prohibit single family housing;

    c) Includes active recreational uses, which are public uses with a reasonable potential for soil contact; and

b. "Commercial use", which is the land use category which shall only be considered for the primary purpose of buying, selling or trading of merchandise or services. Commercial use includes passive recreational uses, which are public uses with limited potential for soil contact.

In addition, "restricted-residential use" is a land use category that does not allow the Site to be used for planting fruit-bearing trees, raising livestock or producing animal products for human consumption. ..

"Restricted use" is a use with imposed restrictions, such as environmental easements, which as part of the remedy selected for the Site, requires a site management plan and relies on institutional controls or engineering controls to manage exposure to contamination remaining at a site.

1.2.3 Geologic Conditions

Over 80% of the Site acreage is developed on historic fill (Figure 3), which is of varying composition and thickness, ranging from approximately 6 to 20 feet of fill beneath the existing cover in the paved low lying area (prior to redevelopment). The hillsides along the south/southeast side appear to have been disturbed historically with cut/fill activity. The fill placed into the former marsh and river bed (the paved area) consists mainly of soil, rock, and dredged sands, with a limited area containing municipal refuse as generally outlined on Figure 3.

The fill is underlain in areas by soft organic clay and peat deposits associated with the historic bay/marsh at the former mouth of the Pocantico River, as well as silt and clay deposits. These soft deposits typically range in thickness from 20-40 feet. Beneath these deposits, a layer of compact granular till (silty sand with gravel and occasional cobbles and boulders) overlies the bedrock with a thickness ranging from 1 foot to more than 10 feet. The underlying bedrock is weathered to relatively unweathered gneiss. The depth to bedrock is variable across the Site, ranging from approximately 20 feet below ground surface (bgs) to greater than 75 feet. .

The direction of groundwater flow is westerly toward the Hudson River with local variations. Groundwater exists within the historic fill and natural deposits. A representative groundwater flow map is shown in Figure 5.

1.3 Summary of Remedial Investigation Findings

A RI was performed to characterize the nature and extent of contamination at the site. Site sampling for the RI was completed in 2004. A supplemental soil investigation of a portion of the East Parcel Site (contemplated for donation to Historic Hudson Valley) was conducted in 2008. The results of the RI, and the supplemental investigation of the East Parcel, respectively, are described in detail in the following reports:

- *Remedial Investigation Report (RIR) Former General Motors Assembly Plant Site, Sleepy Hollow, New York (ARCADIS 2012a)*
- *Investigation Report for Supplemental Soil Investigation of Proposed East Parcel Donation Land* (ARCADIS 2009)

The RI and the supplemental investigation were conducted under NYSDEC oversight, building upon data supplied by GMC and Roseland from prior due diligence investigations. Generally, the RI determined that contamination at the East Parcel Site is associated with historical fill in the low lying area (ARCADIS 2012a). The supplemental investigation added further chemical characterization of the historic fill north of the Continental Street entrance.

Below is a summary of Site conditions when the RI was performed during 2003-2004, as well as Site conditions encountered in the supplemental investigation. Table 2 (as presented in the RI Report), summarizes the chemical constituents detected by study and by environmental media in the East Parcel.

1.3.1 Soil

The historic fill on the East Parcel is comprised of municipal refuse on the east end, imported soil fill throughout the former Pocantico River bed and marsh prior to GMC ownership (pre-1960), and sediment dredged from the Hudson River to grade the area for parking lot construction by GMC in 1960. Domestic refuse, typically consisting of glass, coal ash, shells, ceramic material, metal debris, and decomposed organic material was found in subsurface samples from the former Village landfill area within the East Parcel.

Based on the data presented in the RI and supplemental soil investigation reports, metals found in the East Parcel Site fill at levels above restricted residential Soil Clean-up Objectives (SCOs) were arsenic, barium chromium, copper, lead manganese and mercury. Fill materials containing lead and polycyclic aromatic hydrocarbons (PAHs) at levels above restricted residential SCOs are generally associated with the refuse layer in the former Village landfill area.

During the supplemental investigation of the proposed donation land, test borings were advanced up to 12 feet bgs (to native sediment) to obtain a more detailed estimation of the village landfill limits. As a result of this investigation, the estimated limits of the former village landfill were refined to the outline shown in Figure 3. The municipal refuse layer, including variable deposits of coal ash, was encountered as shallow as 6 feet below grade where it may be up to 6 feet thick, and as deep as 10 feet below grade where it was found to be less than 2 feet thick. These findings are consistent with the refuse layer encountered in the RI and pre-RI investigations.

1.3.2 Site-Related Groundwater

Groundwater samples collected from monitoring wells (observation wells) during the site investigations on the East Parcel (Figure 7) contained detectable concentrations of one or more Target Analyte List (TAL) metals, but no evidence of organic Target Compound List (TCL) or Priority Pollutant organic constituents in groundwater above NYS Class GA standards specified in 6NYCRR Part 703. The metals detected in groundwater on the East Parcel at levels greater than the standards are summarized in Table 2. Unfiltered groundwater samples contained low levels of arsenic, cadmium, chromium and lead above the standards, whereas only dissolved arsenic was detected above the standards in filtered samples. Class GA groundwater is protected for drinking water use. The use of groundwater underlying the East Parcel Site is prohibited without necessary water quality treatment, as described in the Environmental Easement (Appendix C).

1.3.3 Site-Related Soil Vapor Intrusion

A soil gas survey was performed during the RI to evaluate the general presence or absence of methane gas and volatile organic vapors beneath the existing cover within and around the former Village landfill (refuse) area. The findings are summarized as follows:

Methane

A soil gas survey performed at the East Parcel indicated high levels of methane (70-100% combustible gas) under the asphalt covering over and adjacent to the former Village landfill. Levels less than 1% to 70% were also prevalent under a significant portion of the paved area (see Figure 8). Methane is primarily attributed to decomposition of historic municipal waste, with a possible contribution from decomposition of natural organic matter underlying the historic fill material. No combustible gas was detected in unpaved areas around the perimeter of the asphalt, with the exception of a small area near the junction of the Village and County sanitary sewers in the southwest corner of the low lying area.

Volatile Organic Compounds (VOCs) in Soil Vapor

Volatile organic compounds (VOCs) were detected in soil vapor samples throughout the paved areas on the East Parcel. Trace levels of chlorinated VOCs and petroleum-derived VOCs in vapor were detected within the refuse area and beyond the refuse area, consistent with extent of methane (Figure 8).

1.4 Summary of Remedial Actions

No actions to remove grossly contaminated soil were required for the East Parcel Site.

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

1. Maintenance of the existing cover system consisting of asphalt, concrete slabs, railroad sidings, and vegetated soil with limited controlled access to minimize human exposure to remaining contaminated soil/fill remaining at the Site;

2. After redevelopment, the cover system will consist of:

    a. A demarcation barrier over soil or historic fill material that does not meet 6 NYCRR Part 375 SCOs for unrestricted use.

    b. A barrier cap system throughout the entire Site consisting of either or a combination of surface soil cover for landscaped/naturally vegetated areas, pavement over non-vegetated areas, or permanent buildings.

3. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the Site (see Appendix C).

4. Development and implementation of this SMP for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) IC/ECs, (2) monitoring, (3) provisions for implementing actions recommended to address potential exposures related to soil vapor intrusion, and () reporting;

5. Remedial activities prior to redevelopment were completed at the Site in 2013, with the recording of the Environmental Easement and completion of this SMP.

1.4.1 Removal of Contaminated Materials from the Site

No contaminated material removal actions were required as part of the Site remedy.

1.4.2 Site-Related Treatment Systems

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

1.4.3 Remaining Contamination

Remaining contamination associated with historic fill and industrial land use at the former GMC facility is present within the Site at levels exceeding Track 1 (unrestricted) SCOs. Table 3 summarizes the results of all soil samples remaining at the Site after completion of the Remedial Actions that exceed the Track 1 (unrestricted) SCOs. Because there is no defined area within the Site where Track 1 SCOs are confirmed to be met, Table 3 provides a range of constituent concentrations remaining within the East Parcel. Table 4 provides a similar range of constituent concentrations in East Parcel soils that exceed restricted residential SCOs. Figure 9 provides the locations of all samples from soil and historic fill remaining at concentrations exceeding unrestricted SCOs at the Site. The available data for these samples is provided on a CD at the end of this SMP.

1.4.3.1 Soil

Soil and historic fill remaining at the site contain metals (arsenic, barium chromium, copper, lead manganese and mercury) as well as PAHs at levels exceeding unrestricted use SCOs (Table 3). Fill materials containing lead and PAHs at levels above restricted residential SCOs are generally associated with the refuse layer in former Village landfill area. Figure 9 provides the location of samples included in the “remaining soil contamination” database provided on a CD at the back of this SMP.

Fill containing metals exceeding restricted residential use SCOs (as listed on Table 4) are encountered directly beneath the existing cover system, to as deep as the native sediments, with localized variations. PAHs are associated with the refuse layer, which is encountered approximately 6-10 feet

below the surface on the east side of the low lying paved area. Historic fill thickness typically ranges from approximately 6 to 12 feet below the existing cover throughout the low lying area.

The only active utilities on the Site, prior to redevelopment, are the Site storm drains, Village of Sleepy Hollow storm drain and sanitary sewer lines, and a regional sanitary sewer main that is owned by Westchester County.

1.4.3.2 Groundwater

Site groundwater is not significantly contaminated, but contains metals detected at levels above Class GA drinking water standards. Within the low lying area, groundwater resides in the historic fill layer, including buried refuse. As discussed in the Interim Remedial Measures (IRM) Decision Document, groundwater in the vicinity of the Site is not used as a potable water supply. described in Section 2.3, institutional control measures specified in the Environmental Easement will prohibit the use of site groundwater without treatment and NYSDOH, Westchester County, and NYSDEC approval.

1.4.3.3 Soil Gas

Soil gas/vapors remaining at the Site include methane attributable to decomposition of natural organic matter.

Soil gas and vapors remaining onsite include:

- High levels of methane (up to 100% combustible gas) under the asphalt in the vicinity of the former Village landfill, with levels up to 70% under a significant portion of the paved area.
- Trace levels of chlorinated VOCs and petroleum-derived VOCs were detected within the refuse area and beyond the refuse area, consistent with extent of methane.

There are no pre-redevelopment buildings on the Site. Requirements to address potential methane or soil vapor intrusion (SVI) associated with any future building construction are discussed in Section 2.3.2.

2. Engineering and Institutional Control Plan

2.1 Introduction

2.1.1 General

Since remaining contaminated soil and groundwater and soil vapor exists beneath the Site, IC/ECs 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 IC/ECs at the Site. The Engineering and Institutional Control 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 IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the institutional controls set forth in the Environmental Easement (Appendix C);
- 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 IC/ECs, such as the implementation of the Excavation Work Plan (EWP; Appendix A) 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 IC/ECs required by the site remedy, as determined by the NYSDEC.

2.2 Engineering Controls

2.2.1 Engineering Control Systems

2.2.1.1 Cover System

<u>Existing Cover System</u>

Exposure to remaining contamination in soil/fill at the Site is prevented by an existing pre-development cover system over the Site. This cover system: as shown on Figure 10, consists of the following:

- Bituminous pavement and concrete parking surfaces
- Vegetated strips and hillsides between pavement and the property lines
- Closed bituminous ramp and viaduct bridge
- Vegetated open and closed drainage ditch system

- Rail sidings within gravel bedding, with bituminous and concrete access strips

The existing cover system will be maintained by the Owner or Remedial Party until the Site undergoes final redevelopment. The final cover system requirements are summarized below.

Final Cover System

The cover system for the Site, to be completed during site redevelopment is described in the IRM Decision Document and summarized in the final June 2012 Decision Document. For this site, the cover system will consist of:

- A demarcation barrier consisting of a geotextile fabric or a structural surface (e.g., concrete or asphalt) over soil or historic fill material that does not meet 6 NYCRR Part 375 SCOs for unrestricted use (see Appendix E for SCOs).
- A final barrier cap system throughout the entire Site consisting of either or a combination of:
    - A 2-foot-thick soil cover for landscaped or naturally vegetated areas.
    - Pavement (or similar hard surfaces) over non-vegetated areas.
    - Permanent buildings or similar structures.
    - Soils imported to the Site will meet the requirements set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use;(i.e., the lower of restricted residential SCOs or protection of groundwater SCOs, as provided in Appendix 5 of DER-10 under "Restricted Residential Use" (See Appendix E).

The demarcation barrier in combination with a 2 feet thick surface cover, pavement, or permanent structures is collectively referred to hereafter as the *final cover system*.

The approximate extent of the final cover system is expected be consistent with the Riverfront Development Concept Plan shown on Figure 4. Components of the final cover system are generally described below and presented on Figure 11.

Demarcation Barrier

Demarcation barriers will consist of either:

- layer of highly visible synthetic geotextile or other approved synthetic material that identifies the interface between historical or intermediate fill that does not meet meet 6 NYCRR Part 375 SCOs for unrestricted use (see Appendix E for unrestricted use SCOs)and the permanent final soil cover system
- hard surface that also serves as the final cover system

A demarcation fabric will be placed beneath the final soil cover system to identify the limits of the barrier in order to alert persons conducting future intrusive activities (through visual controls). A demarcation fabric will not be required under building slabs, because the slabs and any underlying

vapor barriers will satisfy the permanent demarcation function. Similarly, pavement will serve a dual function of demarcation barrier and final cover, except where specified below under public roads and right-of ways. Figure 11 shows the typical cross sections for each final remedial cover type to be used on the Site. Disruption of materials beneath any of these demarcation barriers requires adherence to the Excavation Work Plan (EWP) provided in Appendix A.

In accordance with the IRM Decision Document, all new underground utilities constructed within public roads and public right-of-ways that overlay historic fill or soils that do not meet SCOs for restricted residential use (Table 1), will include an additional highly visible synthetic demarcation barrier throughout the trench to separate historical fill or other material that does not meet SCOs for restricted residential use from the installed approved trench backfill, described below. This additional demarcation barrier will also run beneath the pavement on all new public roads overlying historic fill and soil that does not meet restricted residential SCOs. Although pavement is an acceptable demarcation barrier, the addition of a highly visible barrier beneath the public pavement is intended to alert Village DPW or utility workers who service or make connections to underground utilities that work beneath this demarcation is not permitted without adherence to the EWP provided in Appendix A. Absence of the highly visible barrier under roadways over these new utility corridors indicates that the area being accessed contains “approved backfill”, as defined in Appendix A, requiring no special handling. All excavations beneath the existing cover system or final demarcation barrier must adhere to the EWP (Appendix A).

Underground Utility Trench Backfill

In accordance with the IRM Decision Document, all materials used as backfill for underground utilities installed in public right-of-ways and service laterals during Site development and in the future will meet the Site SCOs for the surface soil cover system.. Specifically, where underground utility installation or access requires excavation into existing historic fill or other material that does not meet the SCOs in Table 1, the excavated material will be replaced with approved backfill consisting of existing Site soils meeting the SCOs listed in 6 NYCRR Part 375, Table 375-6.8(b) for “restricted residential” use (see Table 1);or imported soils meeting SCOs for restricted residential use provided in Appendix 5 of DER-10 under “Restricted Residential Use” (see Appendix E). Prior to this backfill placement, a demarcation barrier will be placed along the bottom and sides of each affected utility trench (as practicable) to separate approved backfill materials from surrounding soil or fill. The installation will provide a minimum of 1 foot of approved backfill material between the invert of buried utilities and the bottom demarcation barrier, as well as a minimum of 2 feet of approved backfill material (meeting SCOs in Table 1) between the buried utilities and sidewall demarcation barriers. Approved backfill material will be brought up to the final cover system. The Owner or Remedial Party will be responsible for specifying the compaction requirements and drainage characteristics of backfill material needed to meet project design requirements and applicable building codes and confirming compatibility of the demarcation barrier with the utility type. See the EWP (Appendix A) for additional requirements regarding soil management.

Existing utilities located in areas of historic fill at the Site that will continue to be used in their current condition and configuration, without disturbance by construction activities, will not be uncovered and

backfilled with approved backfill material. The likelihood of damage to existing utilities significantly outweighs the potential benefits of replacing historic fill with approved backfill. However, maintenance and repair of retained existing underground utilities will be subject to the requirements of this SMP, including adherence to the EWP (Appendix A) and replacement of excavated material with approved backfill, if excavation beneath the cover system is required to access existing underground utilities.

Surface Soil Cover

The surface soil cover will consist of a minimum 2 foot thick surface soil cap supporting grass, natural vegetation or other landscape features, and will be separated from historical fill by a synthetic demarcation barrier (described in Section 2.2.1.1). Fill and topsoil materials that make up the surface soil cover will consist of:

- Existing Site soils meeting the SCOs listed in 6 NYCRR Part 375, Table 375-6.8(b) for "restricted residential" use (see Table 1); and/or
- Imported soils meeting SCOs for restricted residential use provided in Appendix 5 of DER-10 under "Restricted Residential Use" (see Appendix E)..

The required soil cover thickness will be verified by a licensed land surveyor and certified by a professional engineer at the time of installation. As described in Section 2.2, the soil cover system will be inspected, maintained and repaired as necessary to prevent public contact with the underlying historical fill or other soils not meeting the SCOs required for the soil cover system.

Soil Cover Supporting New Trees

Vegetation such as shrubs and trees with root balls that must be placed to a depth beneath the final cover system will be planted to provide a 1-foot minimum buffer around the root ball consisting of approved backfill consisting of existing Site soils meeting the SCOs listed in 6 NYCRR Part 375, Table 375-6.8(b) for "restricted residential" use (see Table 1);or imported soils meeting SCOs for restricted residential use provided in Appendix 5 of DER-10 under "Restricted Residential Use" (see Appendix E). A highly visible synthetic and water-permeable demarcation barrier will be installed between the clean soil buffer and historical fill or other material that does not meet SCOs for surface soil cover to provide a visible demarcation, if the shrub/tree must be replaced in the future. Handling soil or fill beneath the demarcation barrier, either during initial planting or subsequent tree or shrub replacement, will be performed in accordance with the EWP (Appendix A).

Hard Surface Cover

The hard surface cover system will consist of asphalt, concrete or other impervious surfaces meeting state and local building codes. Surfaces meeting this requirement may include building slabs, roadways, parking areas and walkways installed in accordance with applicable building codes and permits. Buildings and other impervious surfaces will serve a dual function as a demarcation barrier and final cover. However, as described above, an additional highly visible demarcation barrier will be required under all hard-surface public roads and public right-of-ways to demarcate the interface

between historical or intermediate fill that does not meet 6 NYCRR Part 375 SCOs for restricted residential use use (Table 1) and the final cover system. The hard surface cover system will be maintained and repaired as necessary to prevent public contact with historical fill or other soils that do not meet the SCOs required for the soil cover system.

2.2.1.2 Mitigation of Soil Vapor Intrusion

To address soil vapor intrusion (SVI), the final Decision Document (NYSDEC 2012), specifies the ECs outlined in the IRM Decision Document (NYSDEC 2007) and adds a provision for this SMP to include SVI evaluation. Collectively, the remedy includes:

- Mitigation measures, as necessary, to address potential intrusion of volatile organic vapors into future indoor air space.
- Mitigation measures, as necessary, to address the potential for intrusion of methane into future indoor air space.
- A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

Basis for Evaluation and Mitigation

The phrase "soil vapor intrusion" refers to the process by which volatile chemicals migrate from a subsurface source into the indoor air of buildings. Soil vapor, also referred to as soil gas, is the air found in the pore spaces between soil particles. Primarily because of a difference between interior and exterior pressures, soil vapor can enter a building through cracks or perforations in slabs or basement floors and walls, and through openings around sump pumps or where pipes and electrical wires go through the foundation. For example, heating, ventilation and air conditioning (HVAC) systems and/or the operation of large mechanical appliances (e.g., exhaust fans, dryers) may create a negative pressure that can draw soil vapor into the building. This intrusion is similar to how radon gas enters buildings from the subsurface.

Volatile Organic Compounds

Soil vapor can become contaminated when chemicals evaporate from subsurface sources. Chemicals that can emit vapors are called "volatile chemicals." Volatile chemicals include VOCs, some semi-volatile organic compounds (SVOCs), and some inorganic substances such as elemental mercury. There are no known or suspected sources of elemental mercury on the Site. Volatile organic soil vapor contamination on the East Parcel appears to be associated with the refuse area, which is also the primary source of methane gas, but extends throughout much of the paved area. While it may be impractical to remove the sources of VOC vapors, buildings can be designed and constructed with proven precautionary controls, if needed, to mitigate the potential intrusion of soil vapors into indoor air space.

Methane

Methane gas was found beneath the asphalt on the East Parcel Site at levels as high as 100%, as summarized in Sections 1.3.3 and 1.4.3.3. Methane is primarily attributed to decomposition of historic municipal waste, with a possible contribution from decomposition of natural organic matter underlying the historic fill material. Methane is lighter than air, colorless, odorless, non-carcinogenic and flammable. Because methane is lighter than air, it has a tendency to rise from depth to the ground surface where it dissipates into the atmosphere. Where a relatively impermeable barrier (e.g., a concrete slab or asphalt) is present at the ground surface, the potential exists for methane to accumulate beneath that barrier. Methane has the potential to infiltrate through flooring material or cracks, accumulate under footings and in enclosed spaces (e.g., small rooms, vaults, wall spaces), and then cause a fire or explosion when an ignition source (e.g., pilot flame, electrical spark, cigarette) is present. As discussed above for mitigation of VOC vapor intrusion, buildings can be designed and constructed with proven precautionary controls, if needed, to mitigate the potential intrusion of methane gas into indoor air space.

In accordance with the Decision Document, a site-wide approach to methane and soil vapor intrusion (SVI) evaluation will be implemented on the East Parcel as discussed in Section 2.3.2. The results of the evaluation will provide a basis for location-specific mitigation requirements.

Mitigation Measures

The SVI evaluation performed prior to building construction may indicate the need for mitigation measures to eliminate potential methane hazards or exposure to vapors in the proposed structures. At the discretion of the Owner or Remedial Party, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. Under this discretionary approach, the mitigation system for a slab-on-grade foundation design will include a vapor barrier and passive sub-slab depressurization system (SSDS) that is capable of being converted to an active system based on sampling (see Section 2.3.2 for design and approval requirements for SVI mitigation systems).

As described in NYSDOH's *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006), active SSDS is a system that uses a fan-powered vent and piping to draw vapors from the soil beneath the building's slab (i.e., essentially creating a vacuum beneath the slab) and discharge them to the atmosphere. This results in lower sub-slab air pressure relative to indoor air pressure, which prevents the infiltration of sub-slab vapors into the building. USEPA has defined passive SSDS as a system designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a vent pipe routed through the conditioned space of a building and venting to the outdoor air, thereby relying solely on the convective flow of air upward in the vent to draw air from beneath the slab (http://www.epa.gov/radon/pubs/newconst.html).

Procedures for operating and maintaining the SSDS, if required, will be documented in an Operation and Maintenance Plan (see Section 4 of this SMP). Procedures for monitoring the system, if required, are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also

addresses severe condition inspections in the event that a severe condition, which may affect controls at the Site, occurs.

2.2.2 Criteria for Completion of Remediation

Generally, the remedial processes will be considered to be completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives (RAOs) 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 Final Cover System

The final cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.2.2.2 Sub-slab Depressurization System (SSDS)

Active SSDS, if installed, will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSDS is no longer required, a proposal to discontinue the SSDS will be submitted by the property owner or remedial party to the NYSDEC and NYSDOH.

2.3 Institutional Controls

A series of Institutional Controls is required by the Remedial Work Plan (RWP) and Decision Document to: (1) implement, 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, which includes commercial (including public works) and recreational uses. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this SMP. These Institutional Controls, as listed in the Environmental Easement (Appendix C), are:

1. The Controlled Property may be used for: Restricted Residential as described in 6 NYCRR Part 375-1.8 (g) (2) (ii), Commercial as described in 6 NCYRR Part 375-1.8(g) (2) (iii) and Industrial as described in 6 NYCRR Part 375-1.8(g) (2) (iv) [although land use is subject to local zoning laws]:
2. All Engineering Controls must be operated and maintained as specified in this SMP;
3. All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
4. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Westchester 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 NYSDEC;

5. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP[there is no requirement for groundwater monitoring at this Site];

6. Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

7. All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

10. Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

The Environmental Easement specifies that the Controlled Property shall not be used for Residential purposes as defined in 6 NYCRR 375--1.8(g)(2)(i), and the above-stated controls may not be discontinued without an amendment or extinguishment of the Environmental Easement.

The Environmental Easement also requires compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns

Institutional Controls may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of Institutional Controls in the form of Site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for restricted residential, commercial, and industrial uses (subject to local zoning laws) 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, as stated in the Environmental Easement;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use, as stated in the Environmental Easement;
- The potential for vapor intrusion must be evaluated for any buildings developed on the Site, and any potential impacts that are identified must be monitored or mitigated (see Section 2.3.2);

- 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 Controlled Property 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 such Controlled Property 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 cover system will be performed in compliance with the EWP that is attached as Appendix A 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 sample HASP is attached as Appendix F to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. A site-specific CAMP, in a format previously approved by NYSDEC for use on the Site, is provided in Appendix G. The CAMP includes a typical location map for air monitoring stations, although actual monitoring station locations are to be based on the location of the intrusive work, prevailing wind directions, and the location of the nearest receptors. 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 A-1 of the EWP (Appendix A). 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 Site Management Reporting Plan (See Section 5).

The Site owner (or Remedial Party as identified in Appendix B), and parties performing this work at the site, are 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 or Remedial Party is responsible for conducting Site development activities in a manner that will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located over areas that contain remaining contamination and the potential for SVI, including methane, has been identified (see Figure 8) an SVI

evaluation will be performed to determine whether any mitigation measures are necessary to address 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 SSDS 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 by the Owner and/or Remedial Party specified in Appendix B 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 prior to building occupancy, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

The pre-construction SVI evaluation may be designed to demonstrate the absence of contamination that could result in the potential for soil vapor intrusion in specific sub-areas of the site. Contamination with the potential for soil vapor intrusion may be present in Site soil, groundwater and/or soil vapor. If NYSDEC and NYSDOH approve a defined sub-area of the site to be excluded from SVI mitigation requirements based on the results of the pre-construction SVI investigation, no mitigation measures or post-construction testing requirements outlined in this SMP will apply to buildings in the excluded areas.

For this Site, NYSDOH has determined that sub-slab soil vapor samples (or their equivalent as approved by NYSDOH) will be collected post-construction and prior to occupancy of all slab-on-grade buildings. [This applies to all building not previously excluded by NYSDEC and NYSDOH from this requirement based a successful demonstration that there is no need for SVI mitigation associated with proposed buildings within a specific sub-area of the Site, as described above.] It is anticipated that this sampling may be conducted via a built-in sampling port and gate valve in the vent pipe riser (or equivalent method) for buildings with passive SSDS installed. Absence of a passive SSDS in slab-on-grade construction in non-excluded areas does not remove this requirement. In the approach outlined by the NYSDOH (Appendix L), if the results of any of the sub-slab soil vapor samples collected from a building outside the heating season indicate that SVI is not a concern, another [sub-slab] sample will be collected from the same structure during the heating season to verify the results. If the results of any of the sub-slab soil vapor samples indicate that SVI may be of concern, the [Owner and/or Remedial Party as identified in Appendix B to this SMP] will be advised to actively vent the SSDS installed when the building was constructed.

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 the property is owned by a third party, validated SVI data will be transmitted to the property owner within 30 days of validation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within15 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 by the Owner and/or Remedial Party specified in Appendix B at the frequency specified in the SMP Monitoring Plan schedule. 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 Reporting 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 or Remedial Party 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 BCA, 6NYCRR Part 375, and/or ECL.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.
- 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 Environmental Controls.

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 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. Emergencies that may cause an environmental release may occur during site construction activities. Construction plans prepared by contractors will provide a contingency plan to address appropriate response to emergencies that may release Site contaminants, including but not limited to construction-related petroleum or chemical spills and releases. Construction Health and Safety Plans will be developed consistent with this Section, including response to emergencies that may result in personal injury.

If active SSDS or any other active methane of organic vapor intrusion mitigation systems are installed and rely on electrical power after buildings are constructed, a contingency plan to provide temporary power to these systems will be included with the mitigation system designs and any required associated Operations & Maintenance (O&M) plans.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner and/or Remedial Party or Owner's and/or Remedial Party's representative(s) should contact the appropriate party from the contact list below (see Table 5). For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the qualified environmental professional and the Owner's representative listed in Table 6, representing the Owner and Remedial Party identified in Appendix B. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 5: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(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

Table 6: Other Contact Numbers

Raymond M. Kapp, ARCADIS of New York, Inc., Qualified Environmental Professional on behalf of General Motors, LLC	201-797-7400, Ext 4388
James F. Hartnett, General Motors, LLC – for Owner/Remedial Party	315-856-0211

*** Note: Emergency contact numbers are subject to change and should be updated as necessary.**

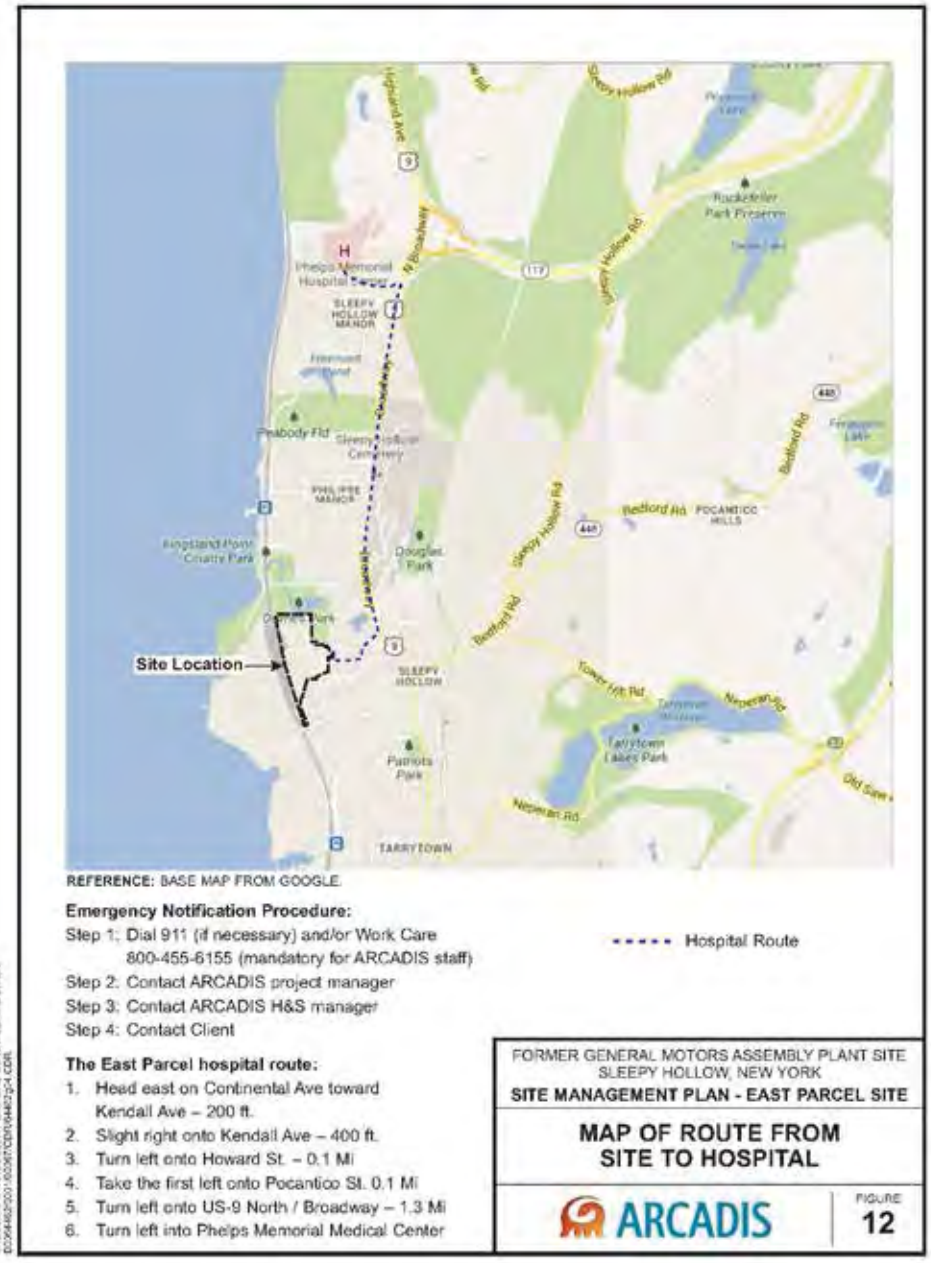
2.5.2 and Directions to Emergency Health Facility

Site Location: 60 Continental Street, Sleepy Hollow, NY 10591
Nearest Hospital Name: Phelps Memorial Hospital
Hospital Location: 701 N Broadway, Sleepy Hollow, NY 10591
Hospital Telephone: (914) 366-3000
Directions to the Hospital:

1. Head east on Continental Ave toward Kendall Ave – 200 ft.
2. Slight right onto Kendall Ave – 400 ft.
3. Turn left onto Howard St. – 0.1 Mi
4. Take the first left onto Pocantico St. 0.1 Mi
5. Turn left onto US-9 North / Broadway – 1.3 Mi
6. Turn left into Phelps Memorial Medical Center

Total Distance: 1.7 miles
Total Estimated Time: 5 minutes

Map Showing Route from the Site to the Hospital:



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 (Table 6). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

Contractor Contingency Plans for construction activities will also include:

- response procedures for spills
- emergency evacuation plans,
- amendments to the contingency plan for chemicals used on the site

3. 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. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

On-site environmental monitoring devices, including but not limited to vapor mitigation systems (if installed), must be protected and replaced as necessary to ensure the devices function in the manner specified in this SMP.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- 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; and
- Preparing the necessary reports for the various monitoring activities.

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

- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements
- Annual inspection and periodic certification.

Monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first 5 years following the construction or installation of engineering controls, unless otherwise specified in Table 7 (below). The frequency thereafter will be determined by NYSDEC. Monitoring programs are summarized in Table 8 and outlined in detail in Sections 3.2 through 3.3 below.

Table 7: Media Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Cover System	Annual	None	None

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

3.2 Cover System Monitoring

The cover system will be inspected, maintained and repaired as necessary to prevent public contact with historical fill or other soils that do not meet the SCOs required for the soil cover system. The cover system will be inspected annually (unless a more frequent inspection is required by NYSDEC during periods of major construction). In accordance with DER-10, certification that a soil cover or site cap remains effective by inspection could be provided by a qualified environmental professional, while an engineering evaluation of settlement measurements for a composite cap (e.g., soil with synthetic liner) to determine whether a liner may be breached would require a professional engineer's certification.

The inspection of the surface cover system will typically include inspection of the following:

- Hard surface cover for evidence of deep cracks, potholes, cuts, depressions and/or rutting exposing demarcation barriers and historic fill.
- Surface soil cover to identify any areas where there is evidence of :
    - excessive settlement or erosion relative to the surrounding areas
    - excessive ponding of surface water that could damage the soil cover
    - exposed or damaged underlying demarcation barrier(s)
    - animal burrows or invasive deep-rooted vegetation that could compromise the integrity of the cover system
- Modifications to the surface cover system with respect to repairs or changes in cover system construction

The cover system inspection will be made part of the site-wide Inspection described in Section 3.4.

3.3 Media Monitoring Program

There is no requirement for groundwater monitoring on the East Parcel Site. The need for other media monitoring and the overall sampling frequency, will be proposed by the Owner or Remedial Party and approved by NYSDEC. Sampling frequency in monitoring programs, should they be required, may be modified with the approval of NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

3.3.1 Soil Vapor Intrusion Monitoring

There are no requirements for SVI monitoring prior to re-development. However, NYSDEC or NYSDOH will determine the need for an SVI monitoring plan following review of the SVI evaluations described in Section 2.3.2 as well as any SVI mitigation plans prepared by the Owner or Remedial party. If a monitoring plan is required, it will be incorporated into the SMP by the Owner and/or Remedial Party.

Any required SVI monitoring will be performed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York".

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 (Appendix 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;
- Compliance with permits and schedules included in the SMP; and
- Confirm that Site records are up to date.

3.5 Monitoring Quality Assurance/Quality Control

If media monitoring is required by NYSDEC and incorporated into a revision to this SMP, all sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Plan (QAP) prepared for the site (Appendix J). Main Components of the QAP include:

- QA/QC Objectives for Data Measurement;

- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC Analytical Services Protocol (ASP) requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method;
- Internal QC and Checks;

- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

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 5.3.

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

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected, if media monitoring is added to this monitoring plan (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- Copies of all field forms completed (e.g., sampling logs, chain-of-custody documentation, inspection checklists, etc.);
- Sampling results, if any, in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Relevant observations, conclusions, or recommendations; and
- Analytical data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 8 below.

Table 8 Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Cover System/Site-wide Inspection	Annual

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

4. Operation and Maintenance Plan

NYSDEC and NYSDOH may require an active SSDS in site buildings designed for occasional or continuous occupancy. If such systems are to be operated, an operations and maintenance plan (OMM Plan) will be required and will include the components outlined below where applicable to the system design. If no buildings rely on an active SSDS, or any other mechanical system to protect human health or the environment, an OMM plan will not be included in this SMP.

If required by NYSDEC, an OMM Plan for active mechanical mitigation/remedial systems installed in the future will be developed and made part of this SMP as outlined below:

- Includes the steps necessary to allow individuals unfamiliar with the Site to operate and maintain any sub-slab depressurization systems;
- Includes an operation and maintenance contingency plan; and,
- Will be updated periodically to reflect changes in site conditions or the manner in which any sub-slab depressurization Systems are operated and maintained.

Information on non-mechanical Engineering Controls (i.e. soil cover system) is provided in Section 2 - Engineering and Institutional Control Plan. A copy of the OMM Plan, along with the complete SMP, will be kept at the site. An OMM Plan is not to be used as a stand-alone document, but as a component document of the SMP.

5. 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. 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 Engineering Controls.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

A general site-wide inspection form will be completed during the site-wide inspection (see Appendix I). Inspection and reporting 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, as specified in Section 5.3.

5.1.3 Evaluation of Records and Reporting

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

- IC/ECs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RWP and FER.

Records maintained by the Owner and/or Remedial Party will be reviewed to support the annual certification. Relevant records will include, but may not be limited to:

- permits applied for or received for new construction and renovations
- notifications to the NYSDEC related to surface cover alterations and implementation of the EWP (Appendix A)
- certificates of occupancy and vapor mitigation system details for new construction or renovation initiated since the last certification inspection in areas where active or passive soil vapor mitigation is required
- underground utility repairs or alterations, public and private
- cover system repair and restoration documentation

- documentation of all activities that required implementation of the EWP (Appendix A), including daily CAMP reports, soil sampling results, waste transportation and disposal records, and construction water management records
- documentation of approved fill quality and delivered quantities
- records required in the O&M plans developed for any active mitigation systems
- records required in the groundwater monitoring program, including any authorized repairs, replacements or abandonment of monitoring wells

5.2 Certification of Engineering and Institutional Controls

After the last inspection of the reporting period, a [qualified environmental professional or, where an engineering evaluation of the ECs is required to certify the IC/ECs, a Professional Engineer licensed to practice in New York State] will prepare the following certification on behalf of the Owner and/or Remedial Party identified in Appendix B:

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;
- No new information has come to my attention, including groundwater monitoring data from wells located at the Site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of offsite contamination are no longer valid; and
- 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 generally accepted engineering practices; 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 and/or Remedial Party or

Owner's and/or Remedial Party's Designated Site Representative] (and if the site consists of multiple properties): [I have been authorized and designated by all site owners to sign this certification] for the Site.

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

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 by the Owner and/or Remedial Party to the Department every year, beginning fifteen months after the Certificate of Completion is issued until NYSDEC approves an alternate schedule. Because the Site will remain in an undeveloped condition under an existing cover system until redevelopment work actively commences, the Periodic Review Report will be limited to an inspection of the existing cover system. 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 D (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 incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ICs/ECs 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;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- If sampling is conducted, data summary tables and graphical representations of contaminants of concern by media (e.g., soil vapor), 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, 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 RWP, IRM Decision Document and final Decision Document;

- 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.

6. References

ARCADIS. 2009. Investigation Report for Supplemental Soil Investigation of Proposed East Parcel Donation Land, Former General Motors Assembly Plant Site, Sleepy Hollow, NY.

ARCADIS. 2012a. Remedial Investigation Report, Former General Motors Assembly Plant Site, Sleepy Hollow, NY.

ARCADIS. 2012c. Remedial Work Plan, General Motors LLC, Former General Motors Assembly Plant Site, Sleepy Hollow, New York. June.

EcolSciences, Inc. 2005. Assessment of Ecological Resources for Lighthouse Landing Redevelopment Project. Prepared for Roseland/Sleepy Hollow, LLC. Short Hills, N.J.

EMCON. 1996. Phase I Environmental Site Assessment, General Motors Tarrytown Assembly Plant.

EMCON. 1997. Phase II Environmental Site Investigation, General Motors Tarrytown Assembly Plant.

EMCON. 2001. Phase III Extent of Contamination Study, General Motors Tarrytown Assembly Plant.

NYSDEC. 2007. Decision Document, Interim Remedial Measure, Former General Motors North Tarrytown Assembly Plant Village of Sleepy Hollow, Westchester County Site No. C360070, July 2007.

NYSDEC. 2010. DER-10, Technical Guidance for Site Investigation and Remediation. New York State Department of Environmental Conservation. May 2010.

NYSDOH. 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006.

Title 6 of the New York State Compilation of Codes, Rules and Regulations Part 375 (6NYCRR Part 375).

Village of Sleepy Hollow. 2007. Resolution Adopting Environmental Findings Statement for Lighthouse Landing at Sleepy Hollow (Findings Statement), July 24, 2007.

Village of Sleepy Hollow. 2011a. Amended Findings Resolution for Lighthouse Landing at Sleepy Hollow , adopted January 25, 2011.

Village of Sleepy Hollow. 2011b. Special Permit and Concept Plan Approval adopted by the Village on June 7, 2011.

ARCADIS

Tables

Table 1
Soil Cleanup Objectives for the Site

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health Restricted-Residential use**
Metals		
Arsenic	7440-38-2	16[f]
Barium	7440-39-3	400
Beryllium	7440-41-7	72
Cadmium	7440-43-9	4.3
Chromium, hexavalent [h]	18540-29-9	110
Chromium, trivalent [h]	16065-83-1	180
Copper	7440-50-8	270
Total Cyanide [h]		27
Lead	7439-92-1	400
Manganese	7439-96-5	2,000[f]
Total Mercury		0.81[j]
Nickel	7440-02-0	310
Selenium	7782-49-2	180
Silver	7440-22-4	180
Zinc	7440-66-6	10,000[d]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex)	93-72-1	100[a]
4,4'-DDE	72-55-9	8.9
4,4'-DDT	50-29-3	7.9
4,4'-DDD	72-54-8	13
Aldrin	309-00-2	0.097
alpha-BHC	319-84-6	0.48
beta-BHC	319-85-7	0.36
Chlordane (alpha)	5103-71-9	4.2
delta-BHC	319-86-8	100[a]
Dibenzofuran	132-64-9	59
Dieldrin	60-57-1	0.2
Endosulfan I	959-98-8	24[i]
Endosulfan II	33213-65-9	24[i]
Endosulfan sulfate	1031-07-8	24[i]
Endrin	72-20-8	11
Heptachlor	76-44-8	2.1
Lindane	58-89-9	1.3
Polychlorinated biphenyls	1336-36-3	1

Table 1
Soil Cleanup Objectives for the Site

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health Restricted-Residential use**
Semivolatiles		
Acenaphthene	83-32-9	100[a]
Acenapthylene	208-96-8	100[a]
Anthracene	120-12-7	100[a]
Benz(a)anthracene	56-55-3	1[f]
Benzo(a)pyrene	50-32-8	1[f]
Benzo(b)fluoranthene	205-99-2	1[f]
Benzo(g,h,i)perylene	191-24-2	100[a]
Benzo(k)fluoranthene	207-08-9	3.9
Chrysene	218-01-9	3.9
Dibenz(a,h)anthracene	53-70-3	0.33[e]
Fluoranthene	206-44-0	100[a]
Fluorene	86-73-7	100[a]
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]
m-Cresol	108-39-4	100[a]
Naphthalene	91-20-3	100[a]
o-Cresol	95-48-7	100[a]
p-Cresol	106-44-5	100[a]
Pentachlorophenol	87-86-5	6.7
Phenanthrene	85-01-8	100[a]
Phenol	108-95-2	100[a]
Pyrene	129-00-0	100[a]
Volatiles		
1,1,1-Trichloroethane	71-55-6	100[a]
1,1-Dichloroethane	75-34-3	26
1,1-Dichloroethene	75-35-4	100[a]
1,2-Dichlorobenzene	95-50-1	100[a]
1,2-Dichloroethane	107-06-2	3.1
cis-1,2-Dichloroethene	156-59-2	100[a]
trans-1,2-Dichloroethene	156-60-5	100[a]
1,3-Dichlorobenzene	541-73-1	49
1,4-Dichlorobenzene	106-46-7	13
1,4-Dioxane	123-91-1	13
Acetone	67-64-1	100[b]
Benzene	71-43-2	4.8
Butylbenzene	104-51-8	100[a]
Carbon tetrachloride	56-23-5	2.4
Chlorobenzene	108-90-7	100[a]
Chloroform	67-66-3	49

Table 1
Soil Cleanup Objectives for the Site

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health Restricted-Residential use**
Ethylbenzene	100-41-4	41
Hexachlorobenzene	118-74-1	1.2
Methyl ethyl ketone	78-93-3	100[a]
Methyl tert-butyl ether	1634-04-4	100[a]
Methylene chloride	75-09-2	100[a]
n-Propylbenzene	103-65-1	100[a]
sec-Butylbenzene	135-98-8	100[a]
tert-Butylbenzene	98-06-6	100[a]
Tetrachloroethene	127-18-4	19
Toluene	108-88-3	100[a]
Trichloroethene	79-01-6	21
1,2,4-Trimethylbenzene	95-63-6	52
1,3,5- Trimethylbenzene	108-67-8	52
Vinyl chloride	75-01-4	0.9
Xylene (mixed)	1330-20-7	100[a]

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes:

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I,endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Table 2
Remedial Investigation Soil, Groundwater, Soil Vapor and Methane Contaminant Summary

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

	Investigation Area	Data Source	Analyses	Constituents of Concern (1)	Concentration Range (ppm unless noted) (2)	Screening Value (ppm unless noted) (3)
1.	Former Village Refuse Area - East Parcel	EMCON 1997-2001 (Including Fill Area B)	TCL/TAL	Arsenic	ND - 19.4	7.5 or SB
				Chromium	12.5 - 697	50 or SB
				Copper	11.5 - 217	25 or SB
				Lead	4.85 - 43,500	400
				Mercury	ND - 2.12	0.1
				Nickel	15.8 - 41.6	13 or SB
				Zinc	43.4 - 1000	20 or SB
		EcolSciences 2002	TCL/TAL	Arsenic	ND - 18.6	7.5 or SB
				Beryllium	ND - 0.70	0.16 or SB
				Copper	6.9 - 7560	25 or SB
				Lead	2.7 - 1,030	400
				Mercury	ND - 0.51	0.1
				Nickel	10.9 - 45.2	13 or SB
				Zinc	26.5 - 1870	20 or SB
		BBL 2006	Lead	Lead	ND - 3,490	400
2.	Background Fill - East Parcel (Area L and Rail Spur)	EMCON 1997-2001	TCL/TAL	Arsenic	ND - 8.07	7.5 or SB
			TCL VOCs	Lead	5.02 - 1090	400
			TCL SVOCs	Mercury	ND - 7.3	0.1
			RCRA Metals	Nickel	14.6 - 20.9	13 or SB
				Zinc	40.2 - 134	20 or SB
3.	Groundwater - East Parcel	EMCON 1997-2001	TCL VOCs	*Total Metals* (4)		
			TCL SVOCs	Chromium	ND - 0.086	0.050
			TAL	Lead	ND - 0.070	0.025
				Dissolved Metals (5)	COCs Meet Criteria	
		EcolSciences 2002	TCL VOCs	*Total Metals* (4)		
			TCL SVOCs	Arsenic	ND - 0.035.6	0.025
			TAL	Cadmium	ND - 0.0055	0.005
				Dissolved Metals (5)		
				Arsenic	ND - 0.0339	0.025
4.	Soil Gas- East Parcel	BBL 2006	Methane	Methane	ND - 100%	NA
			H_2S	H_2S	ND - 1.5 ppm	NA
			TO-15 VOCs	Freon 12	ND - 4.4 ug/m3	NA
			CO, CO_2,O_2	Freon 113	ND - 21 ug/m3	NA
			Hydrocarbons	Benzene	ND - 17 ug/m3	NA
			TO-15 VOCs	Trichloroethene	ND - 25 ug/m3	NA
				Toluene	ND - 49 ug/m3	NA
				Tetrachloroethene	ND - 96 ug/m3	NA
				Ethylbenzene	ND - 4.4 ug/m3	NA
				m,p-Xylene	ND - 16 ug/m3	NA
				o-Xylene	ND - 6.8 ug/m3	NA
				1,3-Butadiene	ND - 19 ug/m3	NA
				Hexane	ND - 79 ug/m3	NA
				Cyclohexane	ND - 53 ug/m3	NA
				Heptane	ND - 33 ug/m3	NA
				Acetone	ND - 87 ug/m3	NA
				2-Propanol	ND - 41 ug/m3	NA
				2-Butanone (MEK)	ND - 12 ug/m3	NA
				Ethanol	ND - 32 ug/m3	NA
				Methyl-t-butyl ether	ND - 14ug/m3	NA

Acronyms and Abbreviations:

TCL/TAL - Target Compound List/Target Analyte List
ND - Non Detect
NA - Not Analyzed
SB - Site Background
VOCs - Volatile Organic Compounds
SVOCs - Semi-volatile Organic Compounds
RCRA - Resource Conservation and Recovery Act
BBL - Blasland, Bouck, & Lee, Inc.
ppm - parts per million
COCs - Constituents of Concern
$\mu g/m^3$ - microgram/cubic meter
TO-15 - Environmental Protection Agency Compendium Method TO-15
USEPA - United States Environmental Protection Agency
NYSDOH - New York State Department of Health

Notes:

(1) Constituents confirmed by Site sampling, with at least one concentration reported above screening value. List excludes abundant inorganic constituents (e.g., aluminum, calcium, iron, magnesium, manganese, potassium, sodium), inherent in most Site fill and soils. PAOCs with 100% of analyzed COCs below screening values are listed.
(2) Range reflects all results from references listed.
(3) Screening values for soil from TAGM 4046, as amended, and as utilized in the RI. Lead value of 400 ppm in soil, per USEPA, as specified by NYSDOH. Groundwater values per Class GA Standards and Guidance. For this site, TAGM 4046 screening values have been replaced by 6NYCRR Part 375 SCOs for Restricted Residential Use
(4) Total PCB values for surface / subsurface residential
(5) Analyses for Total Metals (unfiltered samples) may be biased high due to sample turbidity (suspended solids).
(6) Analyses for Dissolved Metals are from samples filtered in the field to remove suspended solids.

Table 3
Summary of Remaining Soil Contamination Above Unrestricted Levels

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives	Range Remaining in Site Soils (mg/kg)
Metals		
Arsenic	13 [c]	0.74 - 19.4
Barium	350 [c]	6.0 - 638
Beryllium	7.2	0.11 - 1.2
Cadmium	2.5 [c]	0.25 - 3.1
Chromium, hexavalent [e]	1 [b]	-
Chromium, trivalent [e]	30 [c]	4.1 - 697 [g]
Copper	50	6.3 - 7,560
Total Cyanide [e,f]	27	2.06 - 3.99
Lead	63 [c]	2.1 - 43,500 [h]
Manganese	1,600 [c]	65.7 - 2,900
Total Mercury	0.18 [c]	0.02 - 61.4
Nickel	30	5.9 - 54.2
Selenium	3.9 [c]	1.4 - 49.7
Silver	2	1.6 - 3.6
Zinc	109 [c]	16.9 - 1,870
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	3.8	NA
4,4'-DDE	0.0033 [b]	ND - 0.012
4,4'-DDT	0.0033 [b]	ND
4,4'-DDD	0.0033 [b]	ND
Aldrin	0.005 [c]	ND
alpha-BHC	0.02	ND
beta-BHC	0.036	ND
Chlordane (alpha)	0.094	ND
delta-BHC [g]	0.04	ND
Dibenzofuran [f]	7	0.0086 - 0.044
Dieldrin	0.005 [c]	ND
Endosulfan I [d,f]	2.4	ND
Endosulfan II [d,f]	2.4	ND
Endosulfan sulfate [d,f]	2.4	ND
Endrin	0.014	ND
Heptachlor	0.042	ND
Lindane	0.1	ND
Polychlorinated biphenyls	0.1	ND
Semivolatile organic compounds		
Acenaphthene	20	0.014 - 2.0
Acenapthylene [f]	100 [a]	0.015 - 0.4

Table 3
Summary of Remaining Soil Contamination Above Unrestricted Levels

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives	Range Remaining in Site Soils (mg/kg)
Anthracene [f]	100 [a]	0.04 - 1.6
Benz(a)anthracene [f]	1 [c]	0.046 - 1.5
Benzo(a)pyrene	1 [c]	0.044 - 1.6
Benzo(b)fluoranthene [f]	1 [c]	0.058 - 1.6
Benzo(g,h,i)perylene [f]	100	0.026 - 1.1
Benzo(k)fluoranthene [f]	0.8 [c]	0.028 - 1.3
Chrysene [f]	1 [c]	0.038 - 1.7
Dibenz(a,h)anthracene [f]	0.33 [b]	0.03 - 0.4
Fluoranthene [f]	100 [a]	0.014 - 3.0
Fluorene	30	0.022 - 0.087
Indeno(1,2,3-cd)pyrene [f]	0.5 [c]	0.029 - 1.1
m-Cresol [f]	0.33 [b]	NA
Naphthalene [f]	12	0.012 - 0.089
o-Cresol [f]	0.33 [b]	NA
p-Cresol [f]	0.33 [b]	NA
Pentachlorophenol	0.8 [b]	ND
Phenanthrene [f]	100	0.019 - 3.6
Phenol	0.33 [b]	ND
Pyrene [f]	100	0.013 - 2.2
Volatile organic compounds		
1,1,1-Trichloroethane [f]	0.68	ND
1,1-Dichloroethane [f]	0.27	ND
1,1-Dichloroethene [f]	0.33	ND
1,2-Dichlorobenzene [f]	1.1	ND
1,2-Dichloroethane	0.02 [c]	ND
cis-1,2-Dichloroethene [f]	0.25	0.0004 - 0.5
trans-1,2-Dichloroethene [f]	0.19	ND
1,3-Dichlorobenzene [f]	2.4	ND
1,4-Dichlorobenzene	1.8	ND
1,4-Dioxane	0.1 [b]	ND
Acetone	0.05	0.014 - 130
Benzene	0.06	ND
n-Butylbenzene [f]	12	ND
Carbon tetrachloride [f]	0.76	ND
Chlorobenzene	1.1	ND
Chloroform	0.37	ND
Ethylbenzene [f]	1	ND
Hexachlorobenzene [f]	0.33 [b]	ND

Table 3
Summary of Remaining Soil Contamination Above Unrestricted Levels

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives	Range Remaining in Site Soils (mg/kg)
Methyl ethyl ketone	0.12	NA
Methyl tert-butyl ether [f]	0.93	ND
Methylene chloride	0.05	0.0008 - 8.1
n-Propylbenzene [f]	3.9	ND
sec-Butylbenzene [f]	11	ND
tert-Butylbenzene [f]	5.9	ND
Tetrachloroethene	1.3	ND - 0.2
Toluene	0.7	0.0004 - 0.0014
Trichloroethene	0.47	0.0005 - 0.56
1,2,4-Trimethylbenzene [f]	3.6	ND
1,3,5-Trimethylbenzene [f]	8.4	ND
Vinyl chloride [f]	0.02	ND - 0.17
Xylene (mixed)	0.26	ND

All soil cleanup objectives (SCOs) are in parts per million (ppm).

General Notes:

Consituents with levels above Unrestricted Use SCO.

ND = Not Detected.

NA = Not Analyzed

Footnotes:

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO valu

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

[g] Range presented is for total chromium detected, which includes all forms. Trivalent chromium is the most commonly occurring natural form.

[h] The maximum lead value is an outlier. Duplicate analysis of the same sample indicated 1,270 ppm. Excluding outlier, maximim lead is 3,490 ppm.

Table 4
Summary of Remaining Soil Contamination Above Restricted Residential Levels

Site Management Plant
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives - Restricted Residential	Range Remaining in Site Soils (mg/kg)
Metals		
Arsenic	16[d]	0.74 - 19.4
Barium	400	6.0 - 638
Beryllium	72	0.11 - 1.2
Cadmium	4.3	0.25 - 3.1
Chromium, hexavalent [e]	110	-
Chromium, trivalent [e]	180	4.1 - 697 [h]
Copper	270	6.3 - 7,560
Total Cyanide [e]	27	2.06 - 3.99
Lead	400	2.1 - 43,500 [i]
Manganese	2,000[d]	65.7 - 2,900
Total Mercury	0.81[g]	0.02 - 61.4
Nickel	310	5.9 - 54.2
Selenium	180	1.4 - 49.7
Silver	180	1.6 - 3.6
Zinc	10,000[c]	16.9 - 1,870
PCBs/Pesticides		
2,4,5-TP Acid (Silvex)	100[a]	NA
4,4'-DDE	8.9	ND - 0.012
4,4'-DDT	7.9	ND
4,4'-DDD	13	ND
Aldrin	0.097	ND
alpha-BHC	0.48	ND
beta-BHC	0.36	ND
Chlordane (alpha)	4.2	ND
delta-BHC	100[a]	ND
Dibenzofuran	59	0.0086 - 0.044
Dieldrin	0.2	ND
Endosulfan I	24[f]	ND
Endosulfan II	24[f]	ND
Endosulfan sulfate	24[f]	ND
Endrin	11	ND
Heptachlor	2.1	ND
Lindane	1.3	ND
Polychlorinated biphenyls	1	ND

Table 4
Summary of Remaining Soil Contamination Above Restricted Residential Levels

Site Management Plant
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives - Restricted Residential	Range Remaining in Site Soils (mg/kg)
Semivolatiles		
Acenaphthene	100[a]	0.014 - 2.0
Acenapthylene	100[a]	0.015 - 0.4
Anthracene	100[a]	0.04 - 1.6
Benz(a)anthracene	1[d]	0.046 - 1.5
Benzo(a)pyrene	1[d]	0.044 - 1.6
Benzo(b)fluoranthene	1[d]	0.058 - 1.6
Benzo(g,h,i)perylene	100[a]	0.026 - 1.1
Benzo(k)fluoranthene	3.9	0.028 - 1.3
Chrysene	3.9	0.038 - 1.7
Dibenz(a,h)anthracene	0.33	0.03 - 0.4
Fluoranthene	100[a]	0.014 - 3.0
Fluorene	100[a]	0.022 - 0.087
Indeno(1,2,3-cd)pyrene	0.5[d]	0.029 - 1.1
m-Cresol	100[a]	NA
Naphthalene	100[a]	0.012 - 0.089
o-Cresol	100[a]	NA
p-Cresol	100[a]	NA
Pentachlorophenol	6.7	ND
Phenanthrene	100[a]	0.019 - 3.6
Phenol	100[a]	ND
Pyrene	100[a]	0.013 - 2.2
Volatile organic compounds		
1,1,1-Trichloroethane	100[a]	ND
1,1-Dichloroethane	26	ND
1,1-Dichloroethene	100[a]	ND
1,2-Dichlorobenzene	100[a]	ND
1,2-Dichloroethane	3.1	ND
cis-1,2-Dichloroethene	100[a]	0.0004 - 0.5
trans-1,2-Dichloroethene	100[a]	ND
1,3-Dichlorobenzene	49	ND
1,4-Dichlorobenzene	13	ND
1,4-Dioxane	13	ND
Acetone	100[b]	0.014 - 130
Benzene	4.8	ND
Butylbenzene	100[a]	ND
Carbon tetrachloride	2.4	ND
Chlorobenzene	100[a]	ND
Chloroform	49	ND
Ethylbenzene	41	ND
Hexachlorobenzene	1.2	ND

Table 4
Summary of Remaining Soil Contamination Above Restricted Residential Levels

Site Management Plant
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Contaminant	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives - Restricted Residential	Range Remaining in Site Soils (mg/kg)
Methyl ethyl ketone	100[a]	NA
Methyl tert-butyl ether	100[a]	ND
Methylene chloride	100[a]	0.0008 - 8.1
n-Propylbenzene	100[a]	ND
sec-Butylbenzene	100[a]	ND
tert-Butylbenzene	100[a]	ND
Tetrachloroethene	19	ND - 0.2
Toluene	100[a]	0.0004 - 0.0014
Trichloroethene	21	0.0005 - 0.56
1,2,4-Trimethylbenzene	52	ND
1,3,5- Trimethylbenzene	52	ND
Vinyl chloride	0.9	ND - 0.17
Xylene (mixed)	100[a]	ND

All soil cleanup objectives (SCOs) are in parts per million (ppm).

General Notes:

Consituents with levels above Restricted Residential Use SCO.

ND = Not Detected.

NA = Not Analyzed

Footnotes:

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[d] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] This SCO is for the sum of endosulfan I,endosulfan II, and endosulfan sulfate.

[g] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

[h] Range presented is for total chromium detected, which includes all forms. Trivalent chromium is the most commonly occurring natural form.

[i] The maximum lead value is an outlier. Duplicate analysis of the same sample indicated 1,270 ppm. Excluding outlier, maximim lead is 3,490 ppm.

Table 5
Applicable SCOs for Potential Special Uses of East Parcel by HHV

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Land Use	Soil Cleanup Objectives (SCOs)		
	UNRESTRICTED	RESIDENTIAL	RESTRICTED RESIDENTIAL
TILLING (direct contact issue only)			√
GRAZING GRASSES (animals not consumed/demonstration farming only)		√	
GRAZING GRASSES (animals/offspring may leave demonstration farm)	√		
ORCHARD		√	
VEGETABLE GARDEN		√	

Notes:
1. SCOs are specified in 6NYCRR Part 375 (see SMP Appendix E for SCOs).
2. Track 4 cleanup is anticipated - depth of soils which must meet SCO corresponds to depth that potential future use may come in contact with (backup documentation would be required): Tilling - depth that plow blade penetrates/turns soil; Grazing grasses/orchard/vegetable garden - SCOs must be met to the depth of the root systems (including tap root).
HHV = Historic Hudson Valley

ARCADIS

Figures

REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., WHITE PLAINS, NY, 1967, PHOTOREVISED 1979.

2000' 0 2000'

Approximate Scale: 1" = 2000'

Area Location

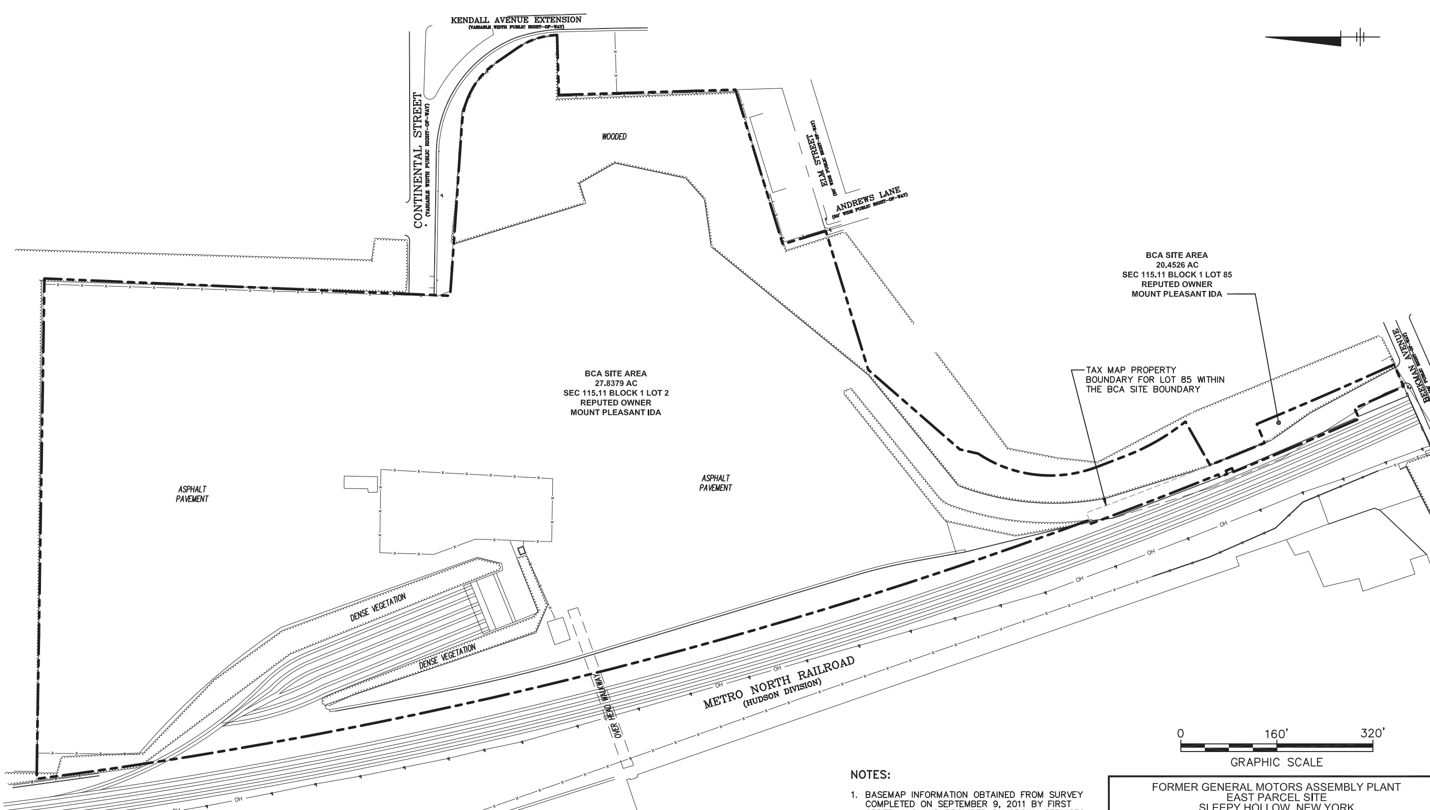
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1

08/06/2013 SYRACUSE, NY-ENV/CAD DJHOWES
B0064462/0001/00067/CDR/64462N03.CDR



LEGEND:

- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- OH — OVERHEAD LINES
- x — CHAINLINK FENCE

NOTES:

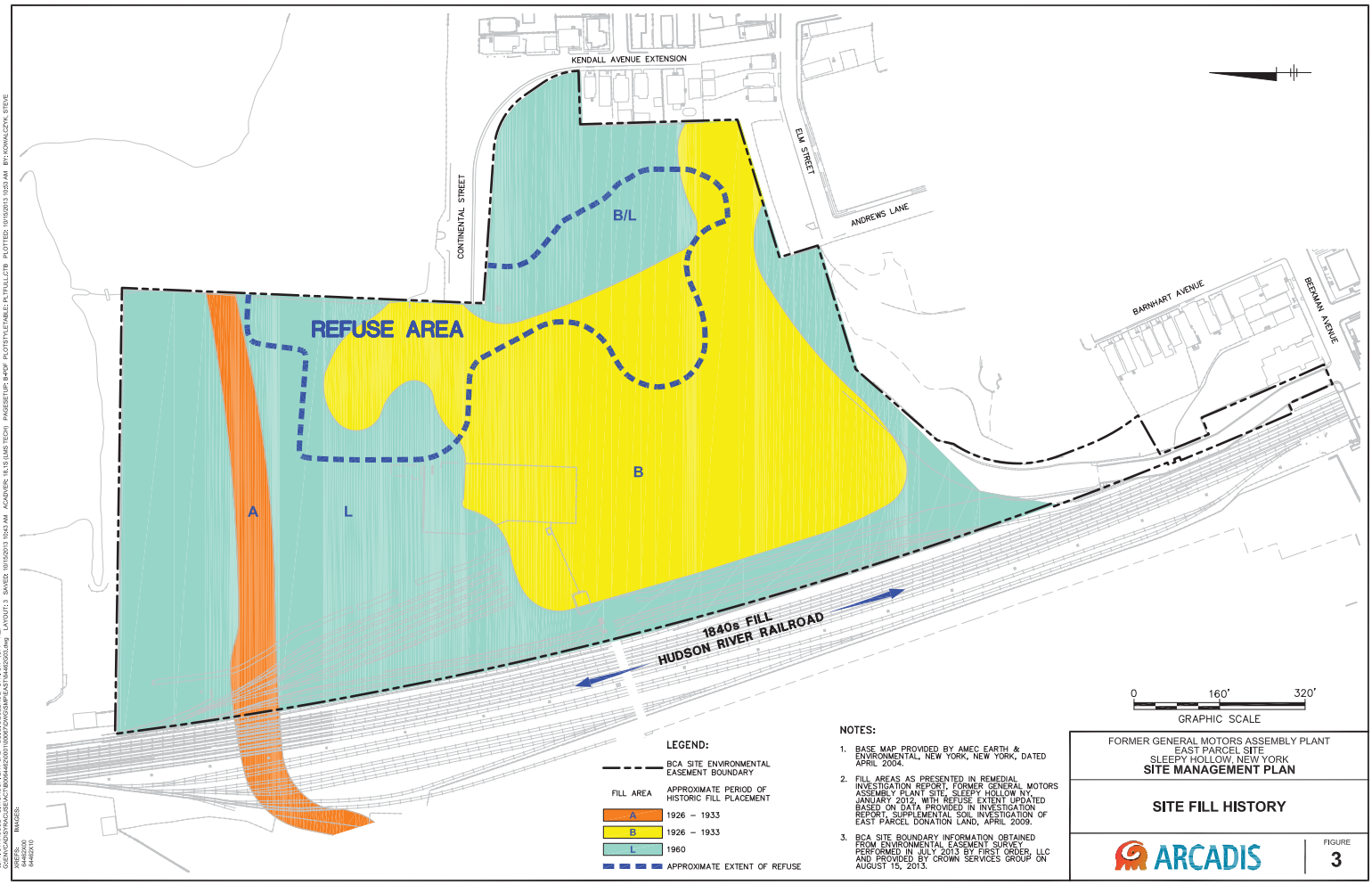
1. BASEMAP INFORMATION OBTAINED FROM SURVEY COMPLETED ON SEPTEMBER 9, 2011 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.
2. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.
3. BCA SITE ENVIRONMENTAL EASEMENT AREA INCLUDES BOTH TAX LOTS FOR A TOTAL OF 28.2905 ACRES.

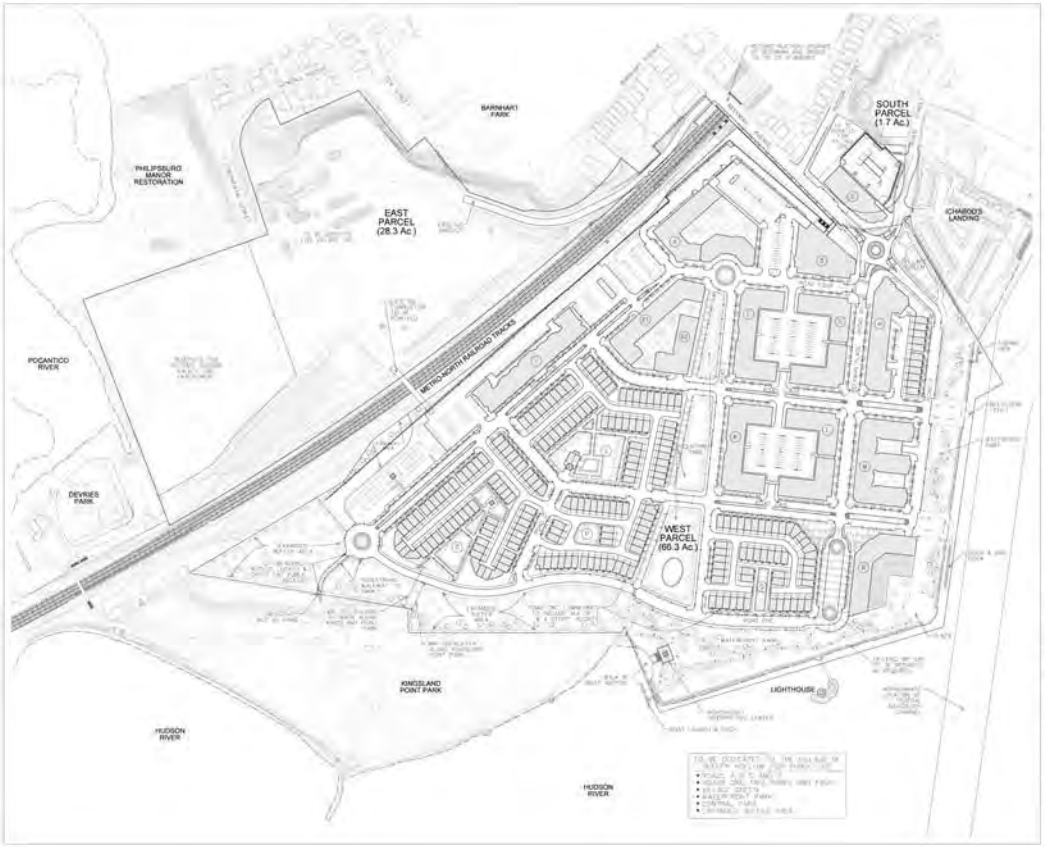
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

SITE PLAN
EAST PARCEL SITE BCA LIMITS

ARCADIS

FIGURE
2


KENDALL AVENUE EXTENSION
CONTINENTAL STREET
ELM STREET
ANDREWS LANE
BARNHART AVENUE
BEEKMAN AVENUE
REFUSE AREA
B/L
B
A
L
1840s FILL
HUDSON RIVER RAILROAD
0
160'
320'
GRAPHIC SCALE
LEGEND:
BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
FILL AREA
APPROXIMATE PERIOD OF HISTORIC FILL PLACEMENT
A 1926 – 1933
B 1926 – 1933
L 1960
APPROXIMATE EXTENT OF REFUSE
NOTES:
1. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
2. FILL AREAS AS PRESENTED IN REMEDIAL INVESTIGATION REPORT, FORMER GENERAL MOTORS ASSEMBLY PLANT SITE, SLEEPY HOLLOW NY, JANUARY 2012, WITH REFUSE EXTENT UPDATED BASED ON DATA PROVIDED IN INVESTIGATION REPORT, SUPPLEMENTAL SOIL INVESTIGATION OF EAST PARCEL DONATION LAND, APRIL 2009.
3. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY, PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN
SITE FILL HISTORY
ARCADIS
FIGURE
3



LIGHTHOUSE LANDING AT SLEEPY HOLLOW
Sleepy Hollow, New York

GENERAL MOTORS LLC

SITE ENGINEER & LANDSCAPE ARCHITECT:
Dewey • Engel • Schwalje

RIVERFRONT DEVELOPMENT CONCEPT PLAN -
MASTER SITE PLAN

SP-1.0

NOTE:
The West Parcel and South Parcel shown on this concept plan will be managed under a separate Site Management Plan for the West Parcel Site.

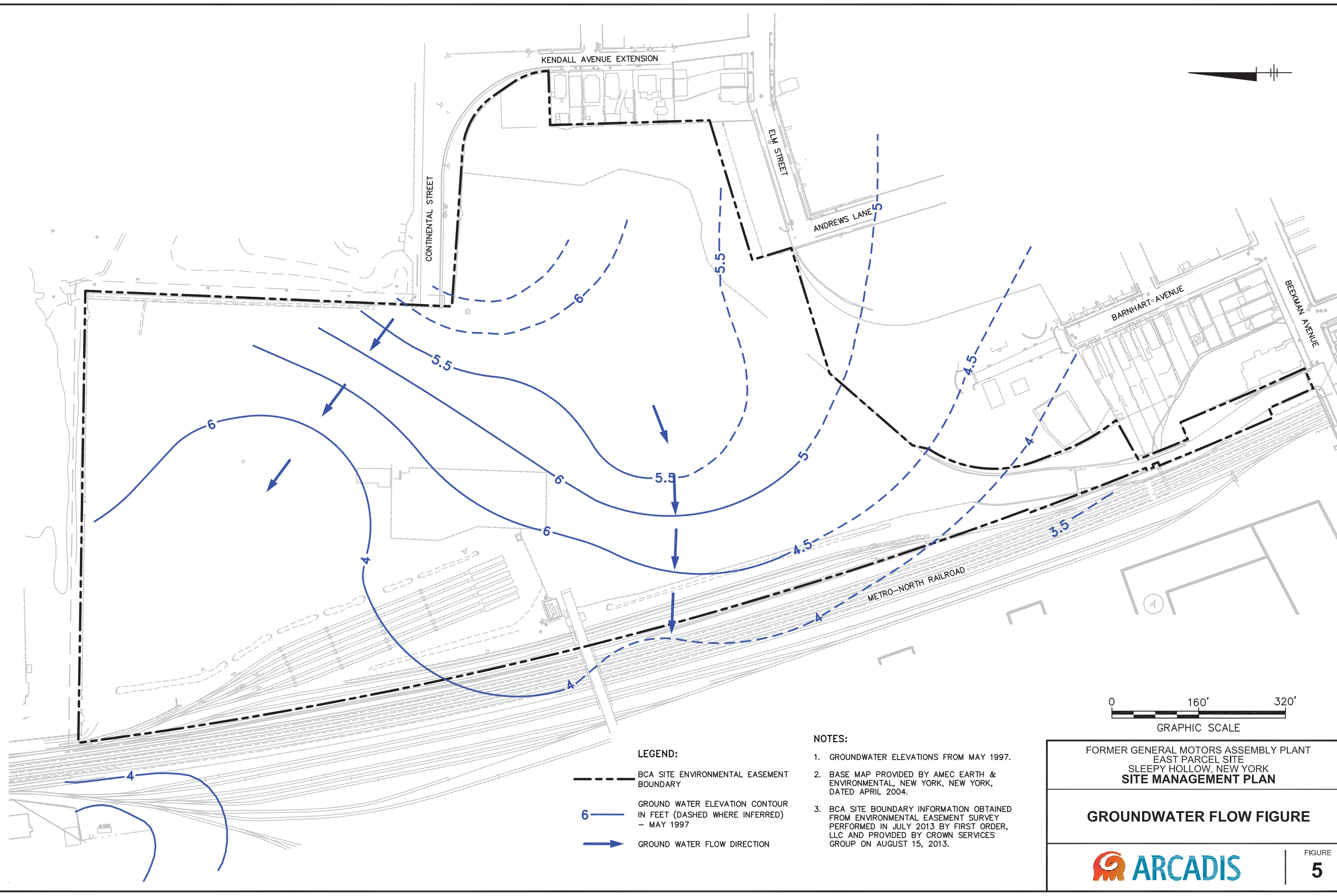
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

RIVERFRONT DEVELOPMENT CONCEPT PLAN

ARCADIS

FIGURE
4

10/10/2013 S:\SYRACUSE_NY-ENV\CAD-DJH\CWES B0064402\0001\0067\CDR\64402Q07.CDR



LEGEND:

- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- 6 — GROUND WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED) – MAY 1997
- GROUND WATER FLOW DIRECTION

NOTES:

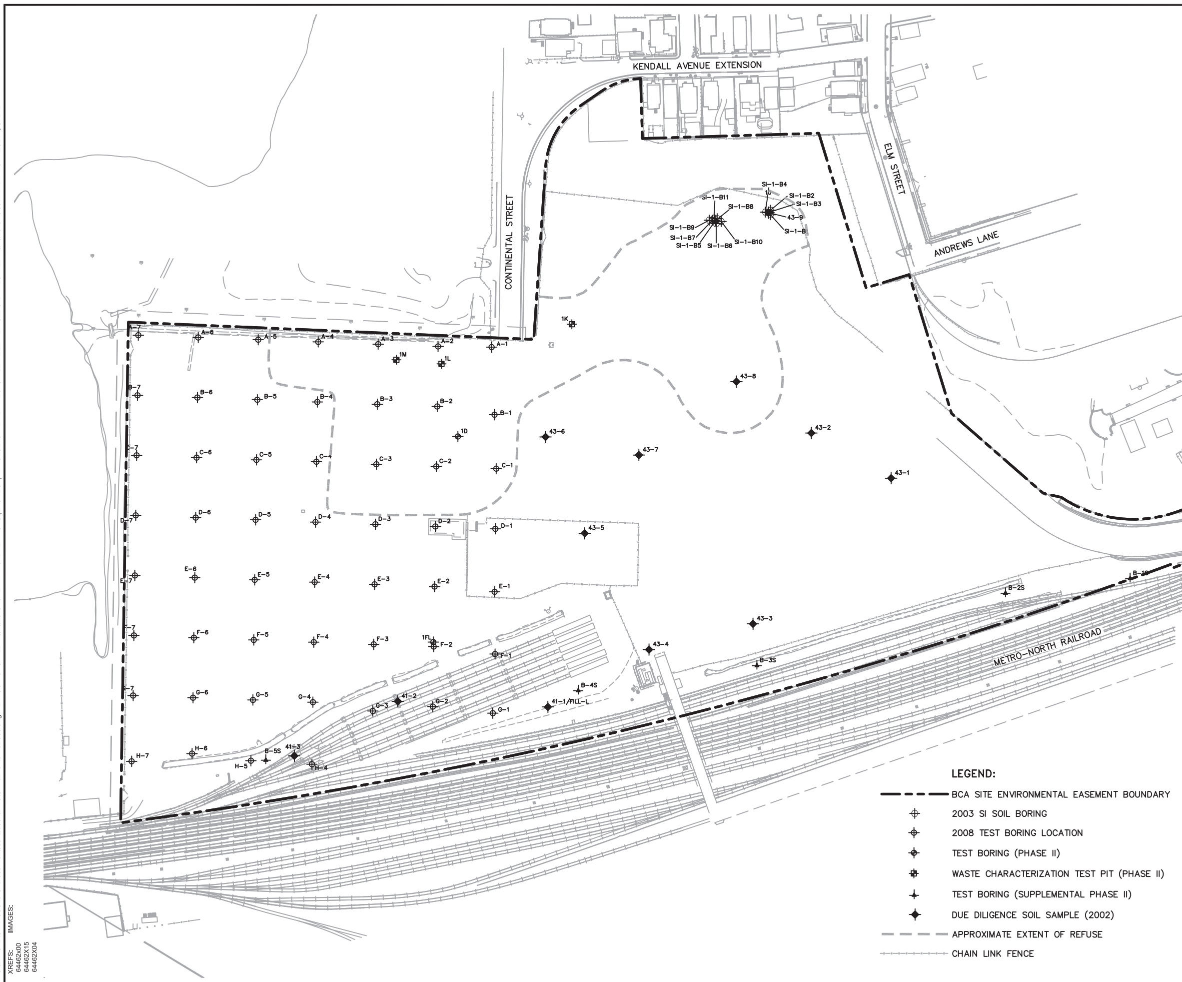
1. GROUNDWATER ELEVATIONS FROM MAY 1997.
2. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
3. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

GROUNDWATER FLOW FIGURE

ARCADIS

FIGURE
5



NOTES:

1. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
2. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.
3. FIGURE INCLUDES SOIL AND HISTORIC FILL SAMPLE LOCATIONS FROM REMEDIAL INVESTIGATION REPORT, 2012 (INCLUDING PRE-RI REPORTS), IRM COMPLETION REPORT, 2008, AND SUPPLEMENTAL SOIL INVESTIGATION OF PROPOSED EAST PARCEL DONATION LAND, 2009.

0 160' 320'

GRAPHIC SCALE

LEGEND:

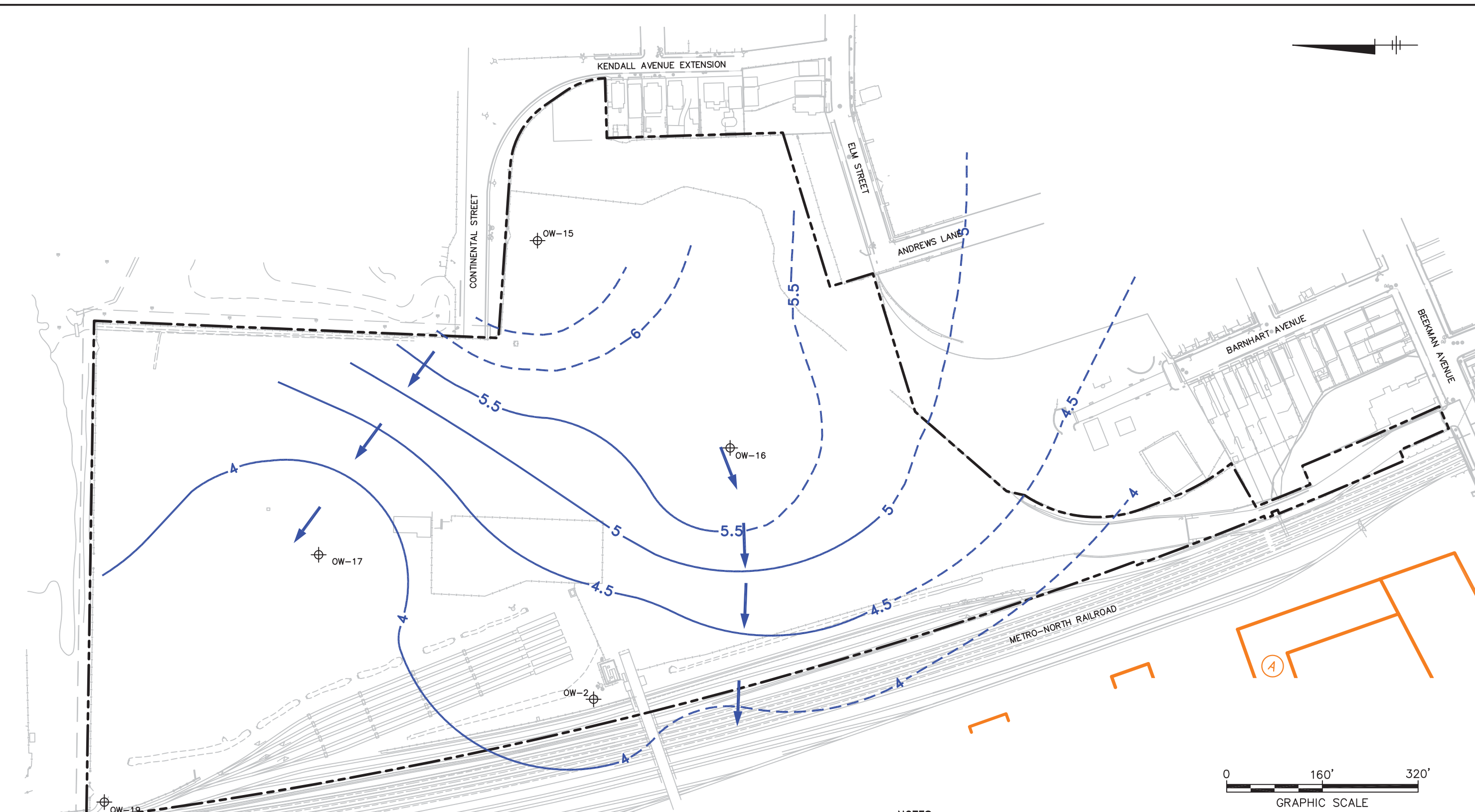
- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- 2003 SI SOIL BORING
- 2008 TEST BORING LOCATION
- TEST BORING (PHASE II)
- WASTE CHARACTERIZATION TEST PIT (PHASE II)
- TEST BORING (SUPPLEMENTAL PHASE II)
- DUE DILIGENCE SOIL SAMPLE (2002)
- APPROXIMATE EXTENT OF REFUSE
- CHAIN LINK FENCE

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

REMEDIAL INVESTIGATION SOIL SAMPLING LOCATIONS

ARCADIS

FIGURE
6



LEGEND:

BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY

FORMER MONITORING WELL LOCATION

4.5 GROUNDWATER ELEVATION CONTOUR – MAY 1997

GROUNDWATER FLOW DIRECTION

NOTES:

1. GROUNDWATER ELEVATIONS FROM MAY 1997.
2. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
3. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.

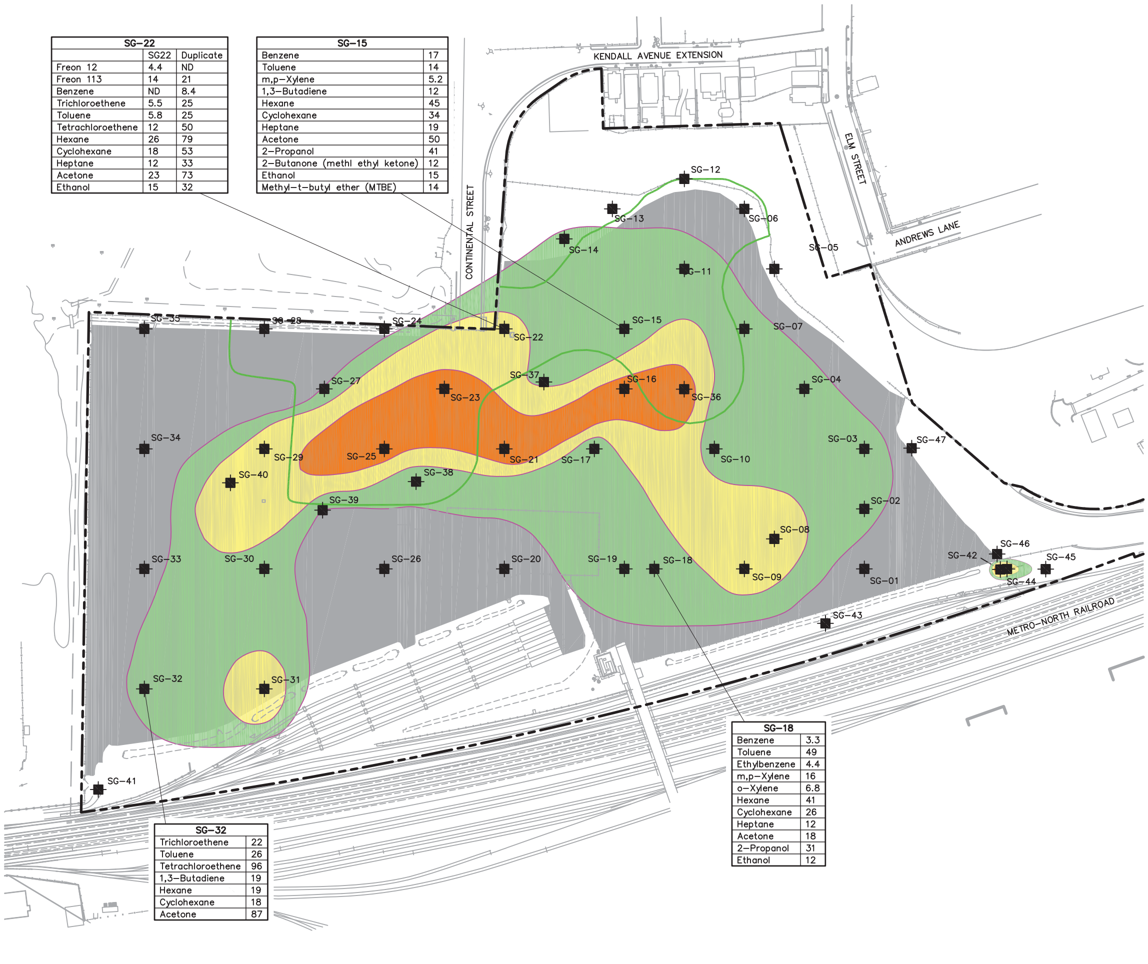
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

REMEDIAL INVESTIGATION GROUNDWATER SAMPLING LOCATIONS

ARCADIS

FIGURE
7

CITY: SYRACUSE DIV/GROUP: ENV CAD DB: B. DECLERCQ LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0064462\0001\00067\DWG\SMP\EAST\64462G07.dwg LAYOUT: 7 SAVED: 10/15/2013 10:42 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/15/2013 10:53 AM BY: KOWALCZYK, STEVE
XREFS: 64462x00 64462X04 IMAGES:



SG-22

	SG22	Duplicate
Freon 12	4.4	ND
Freon 113	14	21
Benzene	ND	8.4
Trichloroethene	5.5	25
Toluene	5.8	25
Tetrachloroethene	12	50
Hexane	26	79
Cyclohexane	18	53
Heptane	12	33
Acetone	23	73
Ethanol	15	32

SG-15

Benzene	17
Toluene	14
m,p-Xylene	5.2
1,3-Butadiene	12
Hexane	45
Cyclohexane	34
Heptane	19
Acetone	50
2-Propanol	41
2-Butanone (methl ethyl ketone)	12
Ethanol	15
Methyl-t-butyl ether (MTBE)	14

SG-18

Benzene	3.3
Toluene	49
Ethylbenzene	4.4
m,p-Xylene	16
o-Xylene	6.8
Hexane	41
Cyclohexane	26
Heptane	12
Acetone	18
2-Propanol	31
Ethanol	12

SG-32

Trichloroethene	22
Toluene	26
Tetrachloroethene	96
1,3-Butadiene	19
Hexane	19
Cyclohexane	18
Acetone	87

LEGEND:

- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- APPROXIMATE LIMITS OF REFUSE
- SOIL-GAS MEASUREMENT AND/OR SAMPLE LOCATION
- 70-100% METHANE
- 40-70% METHANE
- 0-40% METHANE
- EXTENT OF PAVED AREA
- CHAIN LINK FENCE

NOTES:

1. METHANE DATA FROM OCTOBER 2003.
2. SAMPLE RESULTS FOR VOCs SHOWN IN ug/m^3.
3. ND = CONSTITUENT NOT DETECTED.
4. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
5. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.

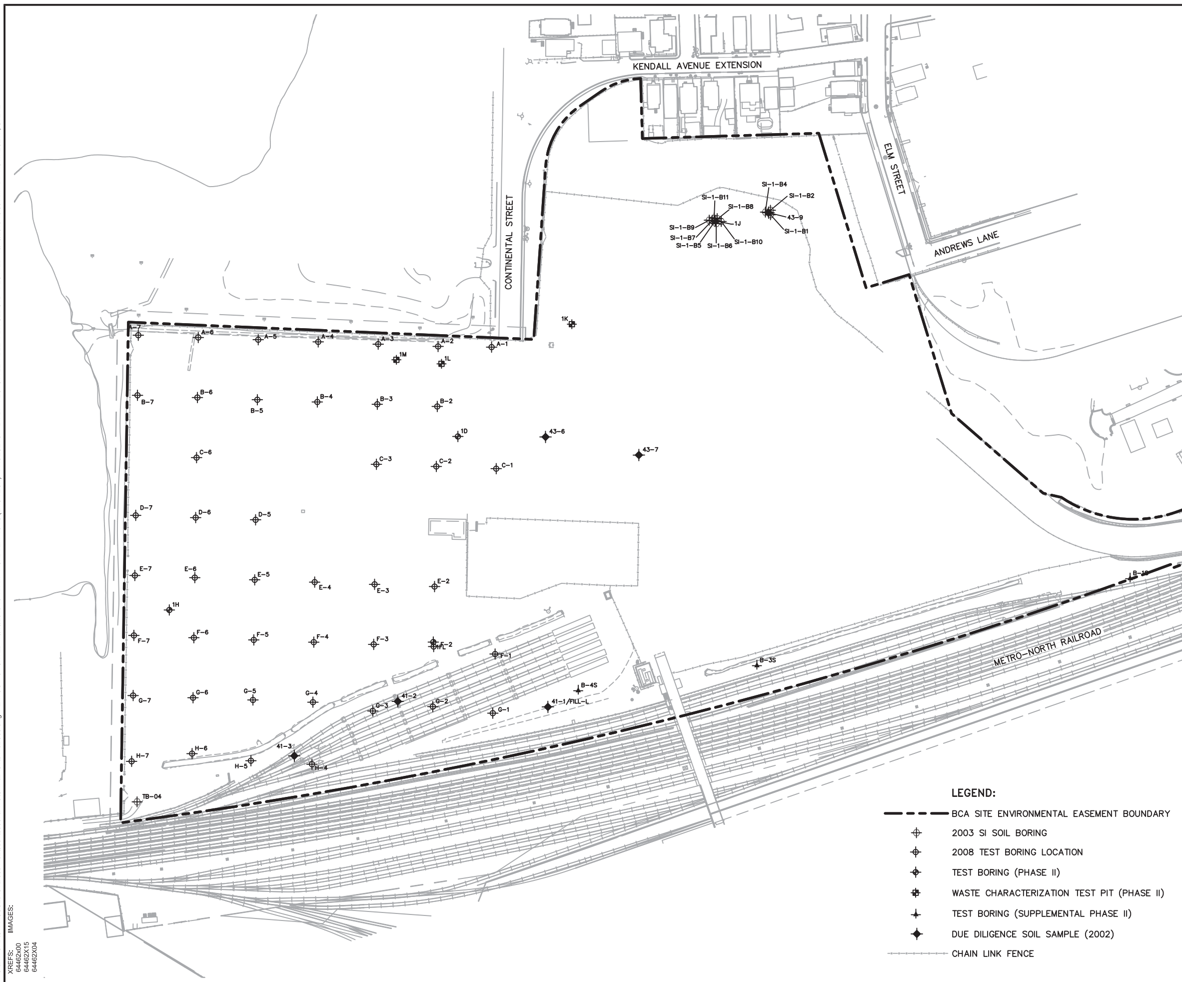
FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

REMEDIAL INVESTIGATION SOIL VAPOR AND METHANE DATA

ARCADIS

FIGURE
8

CITY: SYRACUSE DIV/GROUP: ENV CAD DB: B. DECLERCQ LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0064462\0001\00067\DWG\SMP\EAST\64462G08.dwg LAYOUT: 8 SAVED: 10/15/2013 10:50 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/15/2013 10:53 AM BY: KOWALCZYK, STEVE
XREFS: 64462X04 64462X00 IMAGES:



NOTES:

1. BASE MAP PROVIDED BY AMEC EARTH & ENVIRONMENTAL, NEW YORK, NEW YORK, DATED APRIL 2004.
2. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.
3. SAMPLING LOCATIONS SHOWN EXHIBIT SOIL CONSTITUENTS AT LEVELS GREATER THAN 6NYCRR PART 375 SOIL CLEANUP OBJECTIVES FOR UNRESTRICTED USE.

LEGEND:

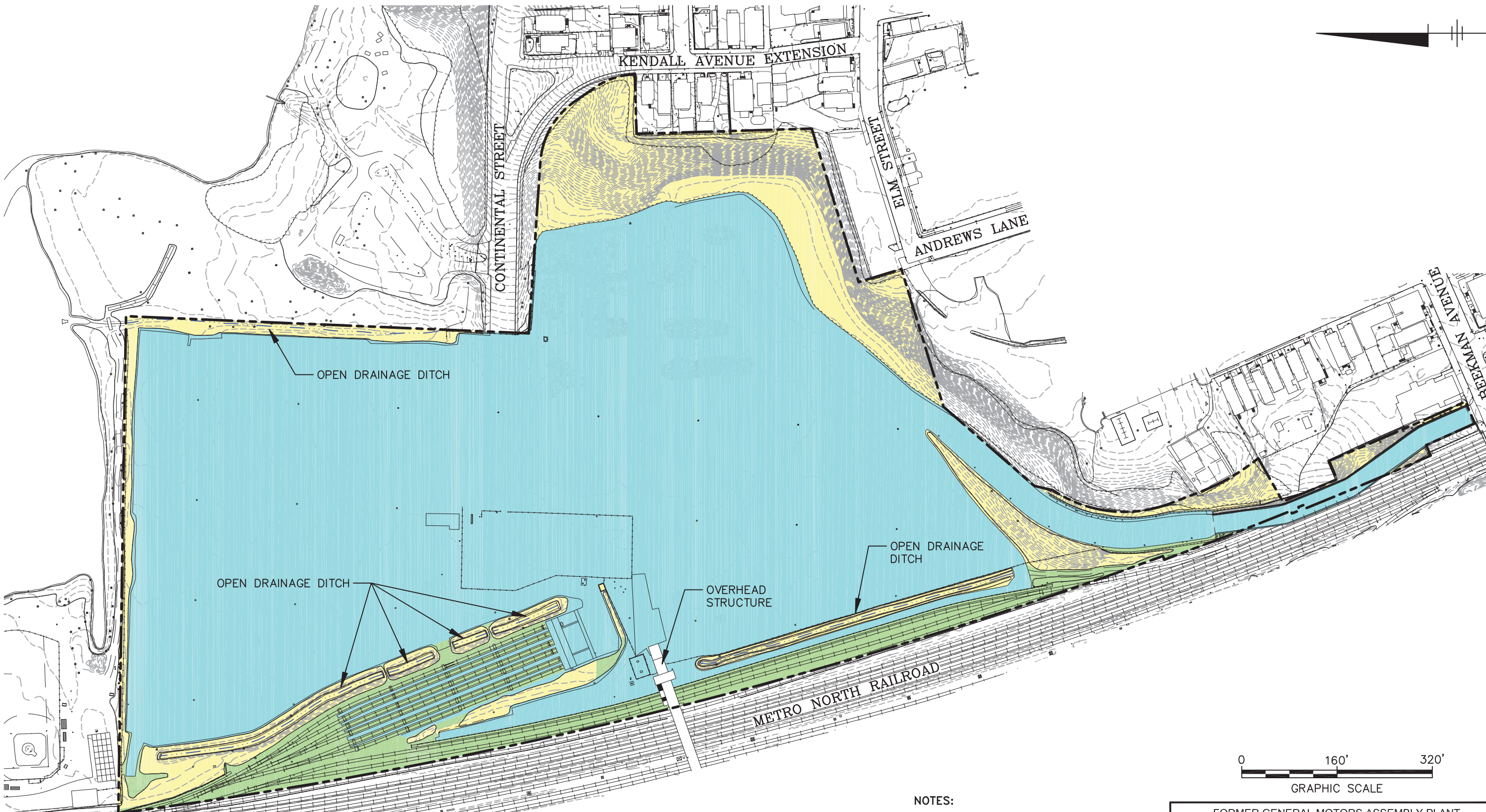
- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- 2003 SI SOIL BORING
- 2008 TEST BORING LOCATION
- TEST BORING (PHASE II)
- WASTE CHARACTERIZATION TEST PIT (PHASE II)
- TEST BORING (SUPPLEMENTAL PHASE II)
- DUE DILIGENCE SOIL SAMPLE (2002)
- CHAIN LINK FENCE

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

LOCATION OF REMAINING SOIL CONTAMINATION ABOVE UNRESTRICTED LEVELS

ARCADIS

FIGURE
9



LEGEND:

- BCA SITE ENVIRONMENTAL EASEMENT BOUNDARY
- BITUMINOUS PAVEMENT
- GRAVEL COVER
- VEGETATED SOIL
- CHAIN LINK FENCE

NOTES:

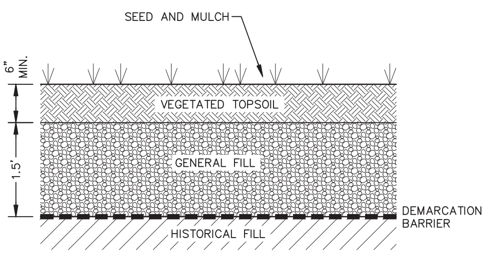
1. EXISTING COVER TYPES DETERMINED BASED ON FIELD CONDITIONS APRIL, 2013.
2. COVER SYSTEM BOUNDARIES ARE APPROXIMATE.
3. BASE MAP INFORMATION TAKEN FROM CHAS H. SELLS INC. 1997 SURVEY AND DELANO TOPOGRAPHIC SURVEY, 2004.
4. BCA SITE BOUNDARY INFORMATION OBTAINED FROM ENVIRONMENTAL EASEMENT SURVEY PERFORMED IN JULY 2013 BY FIRST ORDER, LLC AND PROVIDED BY CROWN SERVICES GROUP ON AUGUST 15, 2013.

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

EXISTING COVER MAP

ARCADIS

FIGURE
10

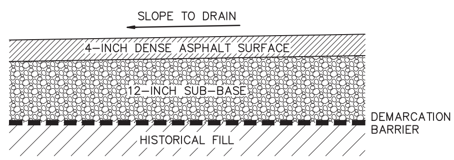


TYPICAL SOIL COVER (1)

NOT TO SCALE

NOTES:

1. DEMARCATION BARRIER WILL BE INSTALLED BELOW SOIL COVER TO IDENTIFY THE INTERFACE BETWEEN THE PERMANENT SURFACE FILL AND HISTORICAL FILL. APPROVED MATERIAL WILL BE HIGHLY VISIBLE COLORED SYNTHETIC GEOTEXTILE MATERIAL.
2. TOP 2 FT OF SOIL COVER SHALL MEET SOIL CLEANUP OBJECTIVES (SCOs) FOR RESTRICTED RESIDENTIAL USE.
3. GENERAL FILL DEPTH CAN BE INCREASED TO ACCOMMODATE PLANTINGS WITH DEEPER ROOT ZONES.

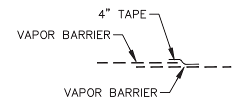


TYPICAL ASPHALT ROAD (2)

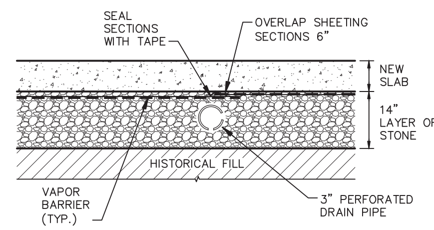
NOT TO SCALE

NOTES:

1. SUBBASE WILL CONSIST OF 12 INCHES TYPE 2 MATERIAL WITH COMPACTION TO 95% THROUGHOUT THE SUBBASE.
2. BASE ASPHALT COURSE WILL BE A 2.5-INCH COMPACTED DEPTH. TOP ASPHALT COURSE WILL BE 1.5 INCH COMPACTED DEPTH.
3. DEMARCATION BARRIER WILL BE INSTALLED BELOW COVER SYSTEM TO IDENTIFY THE INTERFACE BETWEEN THE APPROVED PERMANENT COVER SYSTEM AND HISTORICAL FILL. MATERIAL WILL BE HIGHLY VISIBLE COLORED SYNTHETIC GEOTEXTILE MATERIAL.



VAPOR BARRIER SEAMS

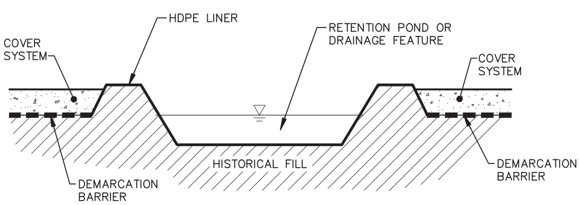


TYPICAL BUILDING SLAB ON GRADE WITH ENVIRONMENTAL VAPOR BARRIER (3)

NOT TO SCALE

NOTES:

1. ENVIRONMENTAL VAPOR BARRIER WILL BE A MINIMUM 15-MIL POLYETHYLENE OR EQUIVALENT REINFORCED POLYETHYLENE, AND WILL MEET ASTM E1745 CLASS A.
2. MINIMUM 6" OVERLAP AT ALL SEAMS.
3. VAPOR COLLECTION PIPING WILL BE 3" PVC PERFORATED DRAIN PIPE.
4. NO DEMARCATION BARRIERS REQUIRED UNDER PERMANENT BUILDING SLABS.

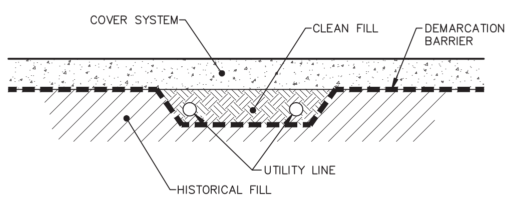


DRAINAGE FEATURE DETAIL (4)

NOT TO SCALE

NOTE:

1. LINER SHALL ALSO SERVE AS DEMARCATION BARRIER.



TYPICAL UTILITY TRENCH (5)

NOT TO SCALE

NOTES:

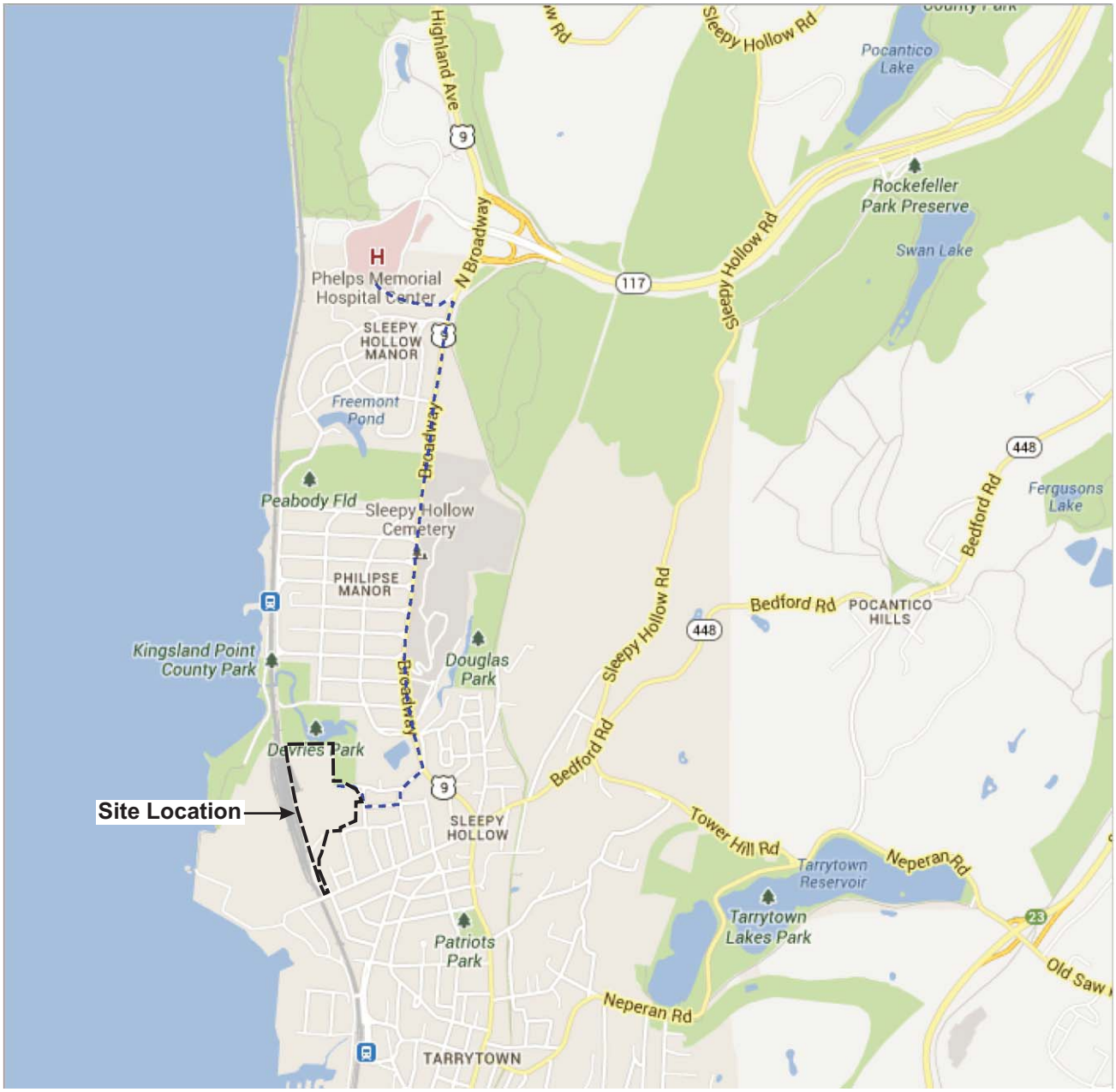
1. CLEAN BACKFILL WILL BE PLACED AROUND SUBSURFACE UTILITIES. THE USE OF DEMARCATION BARRIER WILL BE USED AROUND CLEAN FILL AREAS, AS SHOWN.
2. UTILITY TRENCHES WILL PROVIDE A MINIMUM OF 1 FT OF APPROVED BACKFILL BETWEEN UTILITY INVERT AND BOTTOM DEMARCATION BARRIER AND MINIMUM OF 2 FT OF APPROVED BACKFILL BETWEEN UTILITY AND SIDEWALL DEMARCATION BARRIER.

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

TYPICAL COVER DETAILS FOR FINAL COVER TYPES

ARCADIS

FIGURE
11



REFERENCE: BASE MAP FROM GOOGLE.

Emergency Notification Procedure:

Step 1: Dial 911 (if necessary) and/or Work Care 800-455-6155 (mandatory for ARCADIS staff)
Step 2: Contact ARCADIS project manager
Step 3: Contact ARCADIS H&S manager
Step 4: Contact Client

- - - - - Hospital Route

The East Parcel hospital route:

1. Head east on Continental Ave toward Kendall Ave – 200 ft.
2. Slight right onto Kendall Ave – 400 ft.
3. Turn left onto Howard St. – 0.1 Mi
4. Take the first left onto Pocantico St. 0.1 Mi
5. Turn left onto US-9 North / Broadway – 1.3 Mi
6. Turn left into Phelps Memorial Medical Center

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

MAP OF ROUTE FROM SITE TO HOSPITAL

ARCADIS

FIGURE
12

08/06/2013 SYRACUSE, NY-ENV/CAD DJHOWES
B0064462/0001/00067/CDR/64462g04.CDR

Appendix A

Excavation Work Plan

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

General Motors LLC

Appendix A – Excavation Work Plan

Former General Motors Assembly Plant
East Parcel Site
Sleepy Hollow, New York

December 2013

ARCADIS

Table of Contents

Tables

Figures

Acronyms and Abbreviations

BCA	Brownfield Cleanup Agreement
BUD	Beneficial Use Determination
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
COC	Certificate of Completion
DER	Division of Environmental Remediation
EWP	Excavation Work Plan
HASP	Health and Safety Plan
IC	Institutional Controls
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
PCB	polychlorinated biphenyl
RP	Remedial Party
RWP	Remedial Work Plan
SCOs	Soil Clean-up Objectives
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List
TCL	Target Compound List

1. Introduction

This Excavation Work Plan (EWP), prepared in support of the Site Management Plan (SMP), establishes procedures to follow in the event that soil excavation or other intrusive activities are required for specific areas at the Former General Motors Assembly Plant East Parcel Site in Sleepy Hollow, New York Site (hereinafter referred to as the "Site"). The Site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# C360070-12-10 administered by New York State Department of Environmental Conservation (NYSDEC) and executed on December 31, 2010 and amended August 20, 2012.

As described in the SMP, after completion of the remedial work, impacted materials, including soil, groundwater, and soil gas/vapor remain at the site. Impacted materials may be encountered in excavations throughout the low lying area (paved areas) and around the edges of the paved areas, including the rail sidings and drainage ditches. Soils on the vegetated slopes should contain little to no historic fill, although no testing of slope soils was conducted during the RI or previous investigations to confirm soil quality. Unless data are provided to the Department to demonstrate that existing soils in certain areas of the site meet 6NYCRR Part 375 Soil Cleanup Objectives (SCOs) for Unrestricted Use, all excavation activities must adhere to this EWP.

Note that simple excavations may only require compliance with a portion of the EWP. For example, excavation of a small volume of soil from above the water table that is directly loaded for off-site disposal would not require the stockpiling or fluids management provisions of this EWP.

2. Notification

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the Site owner or their representative will notify the Department. Currently, this notification will be made to:

Ms. Jamie Verrigni
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014
jlverrig@gw.dec.state.ny.us

and

Site Control Section
Bureau of Technical Support
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7020

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for Site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control.
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling.
- A schedule for the work, detailing the start and completion of all intrusive work.
- A summary of the applicable components of this EWP.
- A statement that the work will be performed in compliance with this EWP and 29 Code of Federal Regulations (CFR) 1910.120.
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix H of this SMP document.
- Identification of disposal facilities for potential waste streams.

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

3. Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the Certificate of Completion (COC).

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

4. Stockpile Methods

Soil stockpiles of excavated materials will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

5. Materials Excavation and Load Out

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this SMP.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate federal, state, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

A truck wash will be operated onsite. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

6. Materials Transport OffSite

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 New York Codes, Rules, and Regulations (NYCRR) Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of offsite in an appropriate manner.

Truck transport routes (Figure A-1) are as follows:

1. Head east on Continental Ave toward Kendall Ave – 200 ft.
2. Slight right onto Kendall Ave – 400 ft.
3. Turn left onto Howard St. – 0.1 Mi
4. Take the first left onto Pocantico St. to US-9 / Broadway.

All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; (g) community input (where necessary).

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed onsite in order to minimize offsite disturbance. Offsite queuing will be prohibited.

7. Materials Disposal Off-Site

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, Construction/Demolition recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted Soil Clean-up Objectives (SCOs) is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

8. Materials Reuse On-Site

Soil which exists at a site, which is used to construct a soil cover, site cap system or as excavation backfill, or which may be exported offsite for reuse, must meet the requirements of DER-10, Section 5.4 (e), as applicable to the site. Chemical criteria for onsite reuse of material have been approved by NYSDEC and are listed in Table A-1 below.

Table A-1
Criteria for On-Site Reuse of Excavated Materials

Soil on Site	Reuse on Site	Offsite Export and Reuse
Meets Unrestricted Use SCOs	Without restrictions	Without restrictions
Meets Restricted Residential Use SCOs	In the soil cover or as backfill within the area of the site subject to institutional controls (IC)	Not allowed, unless going to a site with IC subject to a 6NYCRR Part 360 Beneficial Use Determination (BUD)
Exceeds Restricted Residential Use SCOs	Placement below the final cover system within the area subject to IC, except use as backfill for utility trenches in the public right of way	Not allowed, unless going to a site with IC subject to a 6NYCRR Part 360 Beneficial Use Determination (BUD)

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Based on the available database for remaining contamination, it may be assumed that existing site soil does not meet restricted residential use SCOs unless testing results demonstrate otherwise. Sampling and analysis of excavated backfill to qualify it for unrestricted or restricted residential uses or offsite reuse will be performed in

accordance with the Field Sampling Plan for the Site (Appendix H in this SMP). Representative sampling in accordance with Section 5.4 (e) 10 and Table 5.4 (e) 10 of DER-10 (Appendix H in this SMP), will be utilized to characterize excavated soil.

Any demolition material, not already approved in a BUD and proposed for reuse on-site will be sampled for PCBs, lead, TAL Metals, SVOCs, and PCBs if no prior data are available, and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing onsite will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site will not be reused on-site as fill.

9. Fluids Management

All liquids to be removed from the Site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, state, and federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, but will be managed offsite.

Discharge of water generated during large-scale construction activities to surface waters (i.e., a local pond, stream or river) will be performed under a State Pollutant Discharge Elimination System (SPDES) permit.

10. Cover System Restoration

After the completion of soil removal and any other invasive activities, the cover system will be restored in a manner that complies with the IRM Decision Document, the Final Decision Document and the final Remedial Work Plan (RWP). The demarcation layer, consisting of orange snow fencing material or equivalent material (e.g., orange or yellow geotextile) will be placed to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the Remaining Contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

11. Backfill from Off-Site Sources

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the Site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use (restricted residential with prohibited use of groundwater), the resulting soil quality standards are SCOs for restricted residential use provided in Appendix 5 of DER-10 under “Restricted Residential Use” (see Table A-4). Soil imported to a site for use in a soil cap, soil cover or as backfill must meet the criteria summarized in Table A-5 below.

Table A-5
Criteria for Imported Soils

Proposed Use	Criteria
Soil Cover System	Meets SCOs for restricted residential use provided in Appendix 5 of DER-10 under "Restricted Residential Use" (See Table A-4).
Public Utility Trench Backfill	Meets SCOs for restricted residential use provided in Appendix 5 of DER-10 under "Restricted Residential Use" (See Table A-4).
Fill beneath the Cover System	Meets SCOs for restricted residential use provided in Appendix 5 of DER-10 under "Restricted Residential Use"(See Table A-4) and is free of extraneous debris or solid waste, or is approved for use by a 6NYCRR Part 360 Beneficial Use Determination (BUD), or meets the definition of exempt fill under 6NYCRR Part 360.

The imported fill should be sampled and analyzed in accordance with Section 5.4(e) 10 and Table 5.4(e)10 of DER-10 , as described in Appendix H to this SMP.

Imported Materials Other Than Soils

Consistent with DER-10, Section 5.4(e), the following material may be imported, without chemical testing provided that it contains less than 10% by weight material which would pass through a size 80 sieve and consists of:

i. gravel, rock or stone, consisting of virgin material from a permitted mine or quarry; or

ii. for placement under the final cover system other than use in public utility trenches, recycled concrete or brick from a NYSDEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the

New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002).

The Owner must provide documentation of the source of fill to Division of Environmental Remediation (DER) for approval of the source of the material before it is used on the site, which should include:

iii. the name of the person providing the documentation and relationship to the source of the fill

iv. the location where the fill was obtained;

v. identification of any state or local approvals as a fill source; and

vi. if no prior approval is available for the source, a brief history of the use of the property which is the source of the fill.

Bills of lading should be provided to DER to document that the fill delivered was from a DER-approved source(s).

For use of such materials as fill under the final cover system, DER may issue site-specific exemption for one or more of the requirements described or referenced above, based upon site- specific conditions, such as:

vii. use and redevelopment of the site;

viii. depth of the placement of the backfill material relative to the surface or subsurface structures

ix. depth of the placement of the backfill material relative to groundwater;

x. volume of backfill material;

xi. potential for odor from the backfill material;

xii. presence of historic fill in the vicinity of the site;

xiii. NYSDEC-issued beneficial use determination, pursuant to 6 NYCRR Part 360;

xiv. background levels of contamination in areas surrounding the site.

Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

12. Stormwater Pollution Prevention

Permit Requirements

Construction activities in New York that disturb one or more acres of land must (with some exceptions for agricultural projects, silviculture projects and maintenance activities) be authorized under a SPDES Permit for Stormwater Discharges from Construction Activity.

An owner or operator of a construction activity that is subject to SPDES regulation must obtain permit coverage through either an individual SPDES permit that addresses the stormwater discharges, or obtain coverage under the current SPDES General Permit for Stormwater Discharges from Construction Activity prior to the commencement of construction activity. The current General Permit (GP-0-10-001) for New York State was issued in January 2010. An owner or operator of a construction activity that is eligible for coverage under General Permit GP-0-10-001 must obtain coverage under the permit prior to the commencement of construction activity. The NYSDEC will determine the eligibility of the Owner to obtain a General Permit, and may require that the Owner apply for and/or obtain either an individual SPDES permit or an alternative SPDES General Permit. However, if the Owner or Remedial Party (RP) is performing work that meets the definition of "remedial program" in 6 NYCRR Part 375, the substantive requirements of a SPDES permit would have to be met, but a formal permit would not be required for such work.

Municipal construction operations by the Village (including roadway and underground utility installation, maintenance and repair) are covered under their MS4 Permit issued through the SPDES program. The Village's MS4 Permit requires the use of best management practices for stormwater pollution prevention. However, the Village must comply with all other requirements of this SMP applicable to construction and maintenance associated with underground utilities, disruption and restoration of the final cover system, and dust control.

Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan (SWPPP) will be required by any stormwater permit issued for construction activities, or alternatively, will be required by the Department for construction performed as a remedial activity (e.g., handling soil and fill until completion of the final cap system) by the Owner or RP performing this work under the BCA, regardless of the size of the construction project. An SWPPP is a plan for

controlling runoff and pollutants from a site during and after construction activities. The principle objective of an SWPPP is to comply with the NYSDEC SPDES Stormwater Permit (or equivalent) for construction activities by planning and implementing the following practices:

- reduction or elimination of erosion and sediment loading to water bodies during construction
- control of the impact of stormwater runoff on the water quality of receiving waters
- control of the increased volume and peak rate of runoff during and after construction
- maintenance of stormwater controls during and after completion of construction

An example site-specific SWPPP is provided in Appendix K of this SMP. General procedures, for disruption or handling of soil or backfill, are outlined below.

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

13. Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (Target Analyte List [TAL] metals; Target Compound List [TCL] volatiles and semi-volatiles, TCL pesticides and polychlorinated biphenyl [PCBs]), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

14. Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) will be implemented during all ground intrusive activities. The applicable CAMP is provided in Appendix G of this SMP, based on a previously implemented CAMP at the Site A figure showing the location of air sampling stations based on generally prevailing wind conditions is included in Appendix G. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and New York State Department of Health (NYSDOH) Project Managers.

15. Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site, if there are residents or tenants on the property. Specific odor control methods to be used on a routine basis will include:

- Performing activities that may generate odors during normal working hours
- Covering vehicles transporting materials on-site when possible and in accordance with Department of Transportation requirements when transporting materials offsite
- Maintaining covered/tarped stockpiles on site with covering at the end of each work shift, at a minimum.
- Loading trucks such that material will not be dropped from heights above the truck body
- Cleaning excavated material spills immediately
- Reporting and addressing odor complaints accordingly with appropriate follow-up

If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent onsite and offsite nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for offsite disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering

the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

16. Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

17. Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

ARCADIS

Tables

Table A-2

Soil Cleanup Objectives for the Site - Unrestricted Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Unrestricted Use
Metals	
Arsenic	13
Barium	350
Beryllium	7.2
Cadmium	2.5
Chromium, Hexavalent[1]	1 [3]
Chromium, Trivalent[1]	30
Copper	50
Cyanide	27
Lead	63
Manganese	1600
Mercury (total)	0.18
Nickel	30
Selenium	3.9
Silver	2
Zinc	109
PCBs/Pesticides	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	0.0033[3]
4,4'-DDT	0.0033[3]
4,4'-DDD	0.0033[3]
Aldrin	0.005
Alpha-BHC	0.02
Beta-BHC	0.036
Chlordane (alpha)	0.094
Delta-BHC	0.04
Dibenzofuran	7
Dieldrin	0.005
Endosulfan I	2.4[2]
Endosulfan II	2.4[2]
Endosulfan sulfate	2.4[2]
Endrin	0.014
Heptachlor	0.042
Lindane	0.1
Polychlorinated biphenyls	0.1

Table A-2

Soil Cleanup Objectives for the Site - Unrestricted Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Unrestricted Use
Semi-volatile Organic Compounds	
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33[3]
Fluoranthene	100
Fluorene	30
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol(s)	0.33[3]
Naphthalene	12
o-Cresol(s)	0.33[3]
p-Cresol(s)	0.33
Pentachlorophenol	0.8[3]
Phenanthrene	100
Phenol	0.33[3]
Pyrene	100
Volatile Organic Compounds	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1[3]
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1

Table A-2

Soil Cleanup Objectives for the Site - Unrestricted Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Unrestricted Use
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	0.33[3]
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47
Trimethylbenzene-1,2,4	3.6
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	0.26

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(a) is the source for unrestricted use.

All concentrations are in parts per million (ppm)

Footnotes:

[1]The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analusis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

[2]The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[3]For constituents where the calcalated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

Table A-3

Soil Cleanup Objectives for the Site - Restricted Residential Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health, Restricted-Residential Use**
Metals		
Arsenic	7440-38-2	16[f]
Barium	7440-39-3	400
Beryllium	7440-41-7	72
Cadmium	7440-43-9	4.3
Chromium, hexavalent [h]	18540-29-9	110
Chromium, trivalent [h]	16065-83-1	180
Copper	7440-50-8	270
Total Cyanide [h]		27
Lead	7439-92-1	400
Manganese	7439-96-5	2,000[f]
Total Mercury		0.81[j]
Nickel	7440-02-0	310
Selenium	7782-49-2	180
Silver	7440-22-4	180
Zinc	7440-66-6	10,000[d]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex)	93-72-1	100[a]
4,4'-DDE	72-55-9	8.9
4,4'-DDT	50-29-3	7.9
4,4'-DDD	72-54-8	13
Aldrin	309-00-2	0.097
alpha-BHC	319-84-6	0.48
beta-BHC	319-85-7	0.36
Chlordane (alpha)	5103-71-9	4.2
delta-BHC	319-86-8	100[a]
Dibenzofuran	132-64-9	59
Dieldrin	60-57-1	0.2
Endosulfan I	959-98-8	24[i]
Endosulfan II	33213-65-9	24[i]
Endosulfan sulfate	1031-07-8	24[i]
Endrin	72-20-8	11
Heptachlor	76-44-8	2.1
Lindane	58-89-9	1.3
Polychlorinated biphenyls	1336-36-3	1

Table A-3

Soil Cleanup Objectives for the Site - Restricted Residential Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health, Restricted-Residential Use**
Semivolatiles		
Acenaphthene	83-32-9	100[a]
Acenapthylene	208-96-8	100[a]
Anthracene	120-12-7	100[a]
Benz(a)anthracene	56-55-3	1[f]
Benzo(a)pyrene	50-32-8	1[f]
Benzo(b)fluoranthene	205-99-2	1[f]
Benzo(g,h,i)perylene	191-24-2	100[a]
Benzo(k)fluoranthene	207-08-9	3.9
Chrysene	218-01-9	3.9
Dibenz(a,h)anthracene	53-70-3	0.33[e]
Fluoranthene	206-44-0	100[a]
Fluorene	86-73-7	100[a]
Indeno(1,2,3-cd)pyrene	193-39-5	0.5[f]
m-Cresol	108-39-4	100[a]
Naphthalene	91-20-3	100[a]
o-Cresol	95-48-7	100[a]
p-Cresol	106-44-5	100[a]
Pentachlorophenol	87-86-5	6.7
Phenanthrene	67580	100[a]
Phenol	108-95-2	100[a]
Pyrene	129-00-0	100[a]
Volatiles		
1,1,1-Trichloroethane	71-55-6	100[a]
1,1-Dichloroethane	75-34-3	26
1,1-Dichloroethene	75-35-4	100[a]
1,2-Dichlorobenzene	95-50-1	100[a]
1,2-Dichloroethane	107-06-2	3.1
cis-1,2-Dichloroethene	156-59-2	100[a]
trans-1,2-Dichloroethene	156-60-5	100[a]
1,3-Dichlorobenzene	541-73-1	49
1,4-Dichlorobenzene	106-46-7	13
1,4-Dioxane	123-91-1	13
Acetone	67-64-1	100[b]
Benzene	71-43-2	4.8
Butylbenzene	104-51-8	100[a]
Carbon tetrachloride	56-23-5	2.4

Table A-3

Soil Cleanup Objectives for the Site - Restricted Residential Use

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives		
Contaminant	**CAS Number**	**Protection of Public Health, Restricted-Residential Use**
Chlorobenzene	108-90-7	100[a]
Chloroform	67-66-3	49
Ethylbenzene	100-41-4	41
Hexachlorobenzene	118-74-1	1.2
Methyl ethyl ketone	78-93-3	100[a]
Methyl tert-butyl ether	1634-04-4	100[a]
Methylene chloride	64164	100[a]
n-Propylbenzene	103-65-1	100[a]
sec-Butylbenzene	135-98-8	100[a]
tert-Butylbenzene	72477	100[a]
Tetrachloroethene	127-18-4	19
Toluene	108-88-3	100[a]
Trichloroethene	65386	21
1,2,4-Trimethylbenzene	95-63-6	52
1,3,5- Trimethylbenzene	108-67-8	52
Vinyl chloride	63923	0.9
Xylene (mixed)	1330-20-7	100[a]

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes:

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be me if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I,endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salt See TSD Table 5.6-1.

Table A-4

Allowable Constituent Levels for Imported Fill or Soil

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Restricted Residential Use
Metals	
Arsenic	16
Barium	400
Beryllium	47
Cadmium	4.3
Chromium, Hexavalent[1]	19
Chromium, Trivalent[1]	180
Copper	270
Cyanide	27
Lead	400
Manganese	2000
Mercury (total)	0.73
Nickel	130
Selenium	4
Silver	8.3
Zinc	2480
PCBs/Pesticides	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	8.9
4,4'-DDT	7.9
4,4'-DDD	13
Aldrin	0.097
Alpha-BHC	0.02
Beta-BHC	0.09
Chlordane (alpha)	2.9
Delta-BHC	0.25
Dibenzofuran	59
Dieldrin	0.1
Endosulfan I	24
Endosulfan II	24
Endosulfan sulfate	24
Endrin	0.06
Heptachlor	0.38
Lindane	0.1
Polychlorinated biphenyls	1

Table A-4

Allowable Constituent Levels for Imported Fill or Soil

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Restricted Residential Use
Semi-volatile Organic Compounds	
Acenaphthene	98
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenz(a,h)anthracene	0.33[3]
Fluoranthene	100
Fluorene	100
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol(s)	0.33[3]
Naphthalene	12
o-Cresol(s)	0.33[3]
p-Cresol(s)	0.33
Pentachlorophenol	0.8[3]
Phenanthrene	100
Phenol	0.33[3]
Pyrene	100
Volatile Organic Compounds	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1[3]
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1

Table A-4

Allowable Constituent Levels for Imported Fill or Soil

Site Management Plan
Former General Motors Assembly Plant East Parcel Site, Sleepy Hollow, NY

Constituent	Restricted Residential Use
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	1.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47
Trimethylbenzene-1,2,4	3.6
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	1.6

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375.6.8(b) is the source for restricted use. Restricted Residential Use values represent the lower of restricted residential SCOs or protection of groundwater SCOs, as presented in DER-10, Appendix 5.

All concentrations are in parts per million (ppm)

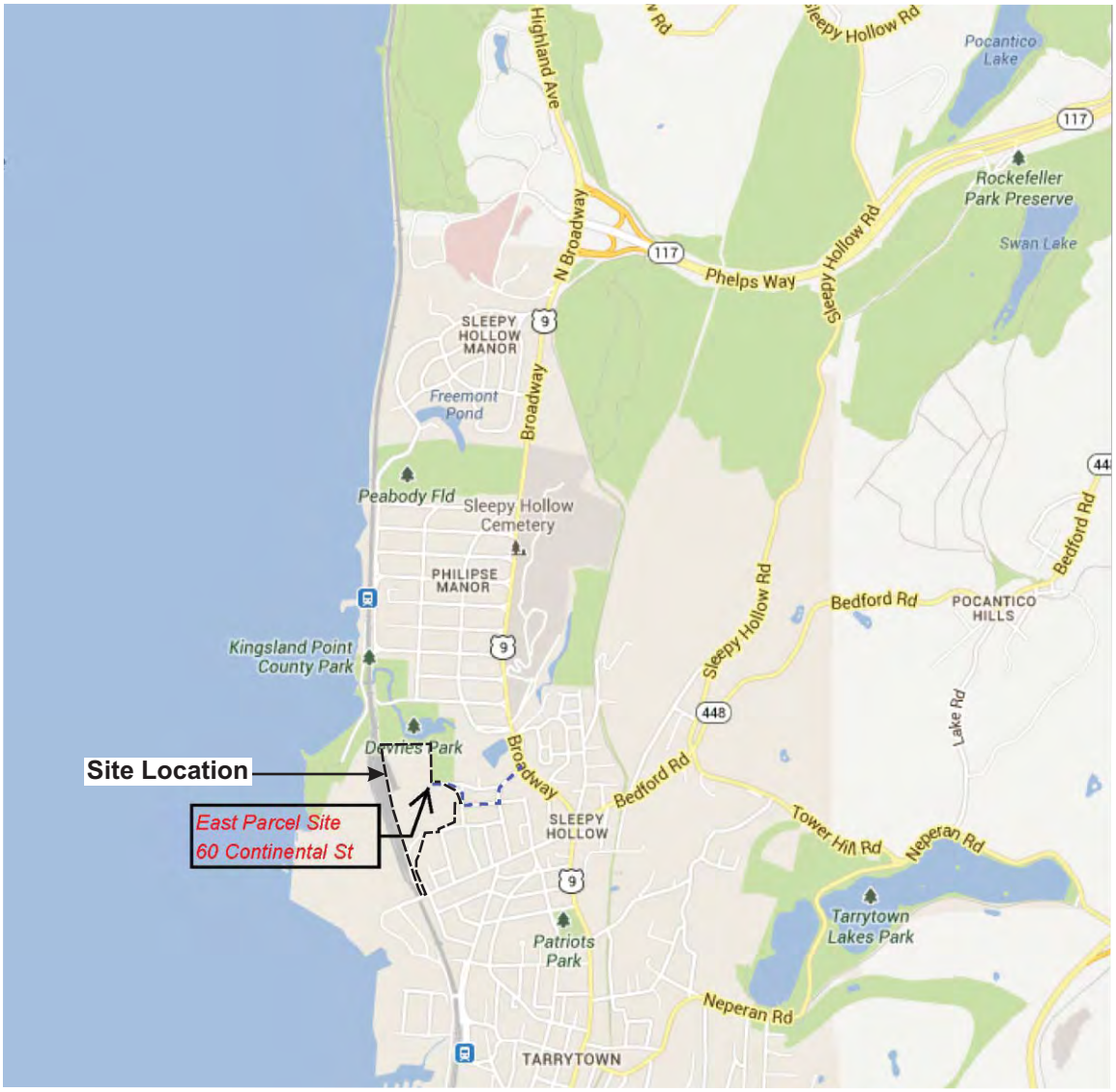
Footnotes:

[1]The SCO for Hexavalent or Trivalent Chromium is

[3]For constituents where the calcalated SCO was lower than

ARCADIS

Figures



REFERENCE: BASE MAP FROM GOOGLE.

The East Parcel truck route:

- - - - - Truck Route

1. Head east on Continental Ave toward Kendall Ave - 200 ft.
2. Slight right onto Kendall Ave - 400 ft.
3. Turn left onto Howard St. - 0.1 Mi
4. Take the first left onto Pocantico St. to US- 9 / Broadway

FORMER GENERAL MOTORS ASSEMBLY PLANT
EAST PARCEL SITE
SLEEPY HOLLOW, NEW YORK
SITE MANAGEMENT PLAN

TRUCK ROUTE

ARCADIS

FIGURE
A-1

08/06/2013 SYRACUSE, NY-ENV/CAD DJHOWES
B0064462/0001/00067/CDR/64462g02.CDR