

# **FORMER EXCELSIOR BAG**

**YONKERS, NEW YORK**

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## **Site-Specific Community Air Monitoring Plan**

**NYSDEC BCP Site Number: C360190**

**AKRF Project Number: 200131**

### **Prepared For:**

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**JANUARY 2025**

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## **1.0 INTRODUCTION**

This Site-Specific Community Air Monitoring Plan (CAMP) was prepared by AKRF, Inc. (AKRF) for implementation during ground intrusive construction/remedial activities at the property located at 25, 35 and 45 Riverside Drive (f/k/a Alexander Street) in Yonkers, New York (hereafter referred to as the “Site”).

The Volunteer was accepted into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as a Volunteer (BCP Site No. C360190), and a NYSDEC Brownfield Cleanup Agreement (BCA) (BCA Index No. C360190-04-20) was executed on April 30, 2020.

The Site is located at 25, 35 and 45 Riverside Drive (f/k/a 159-161 Alexander Street and 15 Babcock Place) in Yonkers, New York. The Site is part of a larger Extell Hudson Waterfront redevelopment plan approved by the City of Yonkers Planning Board on April 11, 2018, for which the final subdivision map was filed with the Westchester County Clerk’s office on January 24, 2020. The Site is now identified by the City of Yonkers Tax Map as Section 2, Block 2620, Lot 2, portion of Lot 9, Lots 10, 11 and 12, Fisherman Way, Colman Way, and portion of Riverside Drive. The Site consists of an approximately 243,952-square foot vacant property with concrete/asphalt paved and surficial soil surfaces, an active construction area to the north and east (Phase I Construction), and a stone revetment (along the western boundary adjacent to the Hudson River). A Site Location Map is provided as Figure 1.

The NYSDEC-approved August 2023 Remedial Action Work Plan (RAWP), which included a combined Health and Safety Plan (HASP) and CAMP as Appendix B, involved in-situ solidification (ISS) of coal tar dense non-aqueous phase liquid (DNAPL) source material present at the Site. ISS treatment activities commenced in December 2023 in accordance with the NYSDEC-approved RAWP, including the combined HASP and CAMP.

Due to unforeseen equipment refusal issues resulting from extensive subsurface obstructions encountered during pre-clearing and ISS mixing activities, it became necessary to evaluate alternative remedial options to achieve the remedial action objectives outlined in the RAWP. Extensive strategy, planning, and coordination efforts with the Volunteer, NYSDEC, contractors, and AKRF have been ongoing to facilitate the design and coordination of an alternative/modified remedy. While selection of the preferred alternative remedial approach has not been finalized, NYSDEC conceptually agreed with a proposed alternative emphasizing a containment, monitoring, and recovery remedial approach via email on July 2, 2024.

As part of the pre-design process for a modified remedy emphasizing containment, monitoring, and recovery, AKRF prepared a DNAPL Pilot Study Work Plan that will be implemented to collect preliminary data in strategic locations to: establish whether recoverable DNAPL is present; identify the most effective areas and methods for long-term DNAPL monitoring and recovery; and support the design of a full-scale containment and recovery remedial approach. The DNAPL Pilot Study Work Plan was initially submitted to NYSDEC for review on October 16, 2024, and revised and resubmitted to NYSDEC on November 21, 2024 (addressing an initial round of comments provided by NYSDEC on October 18, 2024).

NYSDEC provided a second round of comments on the DNAPL Pilot Study Work Plan on December 20, 2024, which requested that the combined HASP and CAMP (included in the RAWP as Appendix B) be revised as separate documents (i.e., this Site-Specific CAMP and a separate HASP. In response, this Site-Specific CAMP has been prepared for all ground intrusive activities during implementation of the DNAPL Pilot Study Work Plan and all future remedial activities (i.e., full-scale containment, monitoring, and recovery) conducted at the Site.

This Site-Specific CAMP outlines appropriate monitoring, mitigation measures, and reporting requirements to ensure that the surrounding community is not affected during ground intrusive activities conducted at the Site.

As the date of this Site-Specific CAMP, the CAMP procedures detailed herein supersede CAMP procedures detailed in the combined HASP and CAMP included in the NYSDEC-approved August 2023 RAWP.

Notwithstanding the CAMP procedures detailed herein, additional health and safety guidelines and procedures detailed in the combined HASP and CAMP included in the NYSDEC-approved August 2023 RAWP will continue to be adhered to during implementation of future remedial/construction activities conducted at the Site.

## 2.0 SITE-SPECIFIC COMMUNITY AIR MONITORING PLAN (CAMP)

The purpose of the CAMP is to identify any exposure of the community to potential environmental hazards in the soil and groundwater. Community air monitoring will be conducted during all ground intrusive Site activities in compliance with this Site-Specific CAMP, and the New York State Department of Health (NYSDOH) Generic CAMP (Attachment A). Results of the air monitoring will be used to determine the appropriate response action, if needed. Field personnel will be trained in the proper operation of all field instruments at the start of the program. The equipment will be calibrated according to manufacturer specifications at the start of each day of fieldwork. If an instrument fails calibration, the project manager will be contacted immediately to obtain a replacement instrument and arrange for repairs.

CAMP summary reports will be prepared and submitted to NYSDEC and NYSDOH for review on at least a weekly basis. In the event there is an action level exceedance or complaint, NYSDEC and NYSDOH will be notified within 24 hours (same day to the extent possible) of the exceedance or complaint. The notification will include a description of the exceedance or complaint, the cause of the exceedance, and any corrective actions taken. A summary of CAMP action level exceedances and corrective actions will also be documented in monthly progress reports. All recorded CAMP data will be included in the Final Engineering Report (FER).

### 2.1 Nearby Sensitive Receptors

The areas immediately surrounding the Site are predominantly residential and commercial in nature. Potential off-site receptors within a 0.25-mile radius of the Site include adult and child residents, commercial and construction workers, students, pedestrians, and cyclists associated with the following existing and future surrounding uses:

1. Commercial businesses, including the east adjacent Metropolitan Transit Authority bus depot and the southeast adjacent Greyston Bakery;
2. Residential buildings, including the south-adjacent Avalon Yonkers multi-family residential development;
3. Building construction/renovation, including the ongoing north-adjacent redevelopment on the north adjacent BICC Cables NYSDEC BCP site,
4. Roadways, bike paths;
5. Schools/day care facilities, including the Charter School of Educational Excellence located approximately 1,050 feet northeast of the Site; and Beczak Environmental Education Center, located approximately 1,110 feet south of the Site; and
6. Commercial and recreational use of the Hudson River.

### 2.2 Real-Time Community Air Monitoring

#### Volatile Organic Compound (VOC) Monitoring

Continuous monitoring for VOCs will be conducted during all ground intrusive activities, including drilling and excavation activities. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background concentrations. VOCs will be monitored continuously at the downwind perimeter of the exclusion zone. Monitoring will be conducted with a photoionization detector (PID) equipped with a 10.6 eV lamp capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedances of action levels. An inspection of the monitoring stations will be conducted on at least an hourly basis. All 15-minute average PID readings will be recorded and available for NYSDEC and NYSDOH personnel to review.

Continuous monitoring for VOCs will also be conducted during non-intrusive remedial activities, such as DNAPL Pilot Study monitoring well gauging and recovery events, however, monitoring procedures may be reduced to periodic air monitoring procedures for long term non-intrusive remedial activities, in consultation with NYSDEC and NYSDOH.

Air monitoring station locations and required monitoring is summarized in Table 1. CAMP action levels and their respective required responses are summarized in Table 2.

#### Airborne Particulate Monitoring

Continuous monitoring for airborne particulates (i.e., the measurement of respirable dust) will be conducted during all ground intrusive activities, including drilling and excavation activities. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background concentrations. Particulates will be monitored continuously at the downwind perimeter of the exclusion zone. Community air monitoring for dust particulates will be conducted using a DustTrak® or equivalent to measure the concentration of airborne respirable particulates less than 10 micrometers in size (PM10). The dust monitor will be capable of calculating 15-minute running average concentrations and equipped with an audible alarm to indicate exceedance of action levels. An inspection of the monitoring stations will be conducted on at least an hourly basis. All 15-minute average readings will be recorded and available for NYSDEC and NYSDOH personnel to review.

Air monitoring station locations and required monitoring is summarized in Table 1. CAMP action levels and their respective required responses are summarized in Table 2.

## 2.3 Air Monitoring Stations

Depending on the nature and extent of the work activity being performed, air monitoring stations will be located and configured to monitor for VOCs/particulates as detailed in Table 1 below.

**Table 1**  
**CAMP Air Monitoring Station Locations and Required Monitoring**

Work Activity	Number of Stations/Location	Required Monitoring
Site-wide ground intrusive activities (i.e., full-scale remedial/construction activities)	Three stations (one upwind and two downwind) positioned in fixed locations along the Site perimeter (shown on Figure 2) <sup>1</sup>	Continuous air monitoring for VOCs and particulates at upwind and downwind air monitoring stations
Limited ground intrusive activities (i.e., advancement of soil borings/installation of monitoring/recovery wells)	Two stations (one upwind and one downwind) positioned at the perimeter of the exclusion zone	Continuous air monitoring for VOCs and particulates at upwind and downwind air monitoring stations
Non-intrusive remedial activities (i.e., DNAPL gauging and recovery events)	Two stations (one upwind and one downwind) positioned at the perimeter of the exclusion zone	Continuous air monitoring for VOCs only at upwind and downwind air monitoring stations. May be reduced to periodic monitoring in consultation with NYSDEC/NYSDOH for long term events
<b>Notes:</b> <sup>1</sup> Fixed locations shown on Figure 2 were biased toward nearby populations/occupied structures with the highest potential for exposure to Site-related contaminants during ground intrusive activities. These locations may be adjusted, in consultation with NYSDEC and NYSDOH, based upon location of work activities and/or other special requirements detailed within this Site-Specific CAMP.		

The monitors will continuously log VOC and particulate levels, as applicable, during work activities. The tripod-mounted monitoring stations will be fully enclosed and equipped with the following:

- A PID equipped with an 10.6 eV lamp capable of calculating 15-minute running average VOC concentrations;
- A Netronix™ Thiamus™ ICU-820 or equivalent Global System for Mobile Communication (GSM)/Global Positioning System (GPS) device capable of recording air monitoring and location data; and
- For Site-wide ground-intrusive activities (i.e., full-scale remedial/construction activities), a TSI 8530 DustTrak II or equivalent dust monitor capable of measuring the concentration of airborne respirable particulates less than 10 micrometers in size (PM10) and calculating 15-minute running average particulate concentrations.

The monitoring stations will be capable of sending e-mail and/or text alerts to the SSO to indicate an exceedance of action levels. Additionally, the SSO or his/her designee will conduct an inspection of the monitoring stations on at least an hourly basis. Upon completion of Site activities, all air monitoring data will be available to download via the telemetry website (e.g., iEnvironet®). All air monitoring data recorded at the tripod-mounted monitoring stations will be available for NYSDOH and/or NYSDEC review and will be included in the FER.

## 2.4 Community Air Monitoring Action Levels

Response actions will be implemented if particulate or VOC levels are measured above established CAMP action levels. The action levels and their respective required responses are summarized in Table 2.

**Table 2**  
**CAMP Action Levels and Required Responses**

Monitoring	Action Level <sup>1</sup>	Response Action
Particulates	15-minute average between 0.100 mg/m <sup>3</sup> and 0.150 mg/m <sup>3</sup> above background	Implement dust suppression measures and continue monitoring. Work may continue if levels remain below 0.150 mg/m <sup>3</sup> and no visible dust is migrating from the work area.
	15-minute average greater than 0.150 mg/m <sup>3</sup> above background	Stop work until dust suppression measures mitigate levels to below 0.150 mg/m <sup>3</sup> .
Volatile Organic Compound (VOC)	15-minute average between 5 and 25 ppm	Stop work, identify source of vapors, and mitigate. Work may continue if instantons readings rapidly decrease below 5ppm above background.
	15-minute average more than 25 ppm	Shutdown of work. Mitigate levels to below 5 ppm.
<b>Notes:</b> <sup>1</sup> - 15-minute time-weighted average parts per million = ppm milligrams per cubic meter = mg/m <sup>3</sup>		

## 2.5 Special Requirements

### Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, additional Site-specific CAMP air monitoring provisions will be implemented (as necessary) to ensure that the surrounding community is not exposed to Site-related contaminants during ground intrusive activities. Additional CAMP provisions include the following:

- The continuous air monitoring locations for VOCs and particulates will be adjusted along the Site or exclusion zone perimeter to adequately reflect the nearest potentially exposed population(s) and/or the location of ventilation system intake(s) for nearby structures.

- The use of engineering controls such as vapor/dust barriers, special ventilation devices, ventilation intake filters, etc. will be considered, as necessary, to prevent exposures related to the work activities and to control dust and odors.
- Consideration will be given to implementing the planned activities at times when potentially exposed populations are at a minimum.
- If total (instantaneous) VOC concentrations at the Site or exclusion zone perimeter opposite the potentially exposed population(s) or occupied structure intake vent(s) exceed 1 ppm, work activities will be suspended until controls are implemented and are successful in reducing the total VOC concentration to 1 ppm or less at the monitoring point.
- If total (instantaneous) particulate concentrations at the Site or exclusion zone perimeter opposite the potentially exposed population(s) or occupied structure intake vent(s) exceed 150 mcg/m<sup>3</sup>, work activities will be suspended until controls are implemented and are successful in reducing the particulate concentration to 150 mcg/m<sup>3</sup> or less at the monitoring point.
- Supplemental VOC and particulate monitoring beyond the Site or exclusion zone (i.e., within the off-site area of exposed population(s), opposite of building wall(s) near ventilation intake(s), and/or within occupied structures) may also be considered in consultation with NYSDEC and NYSDOH, to the extent feasible. Procedures and action levels will be pre-determined with NYSDEC and NYSDOH prior to commencing any VOC or particulate monitoring beyond the Site or exclusion zone perimeter that becomes necessary to facilitate work activities.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work With Co-Located Residences or Facilities

- Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work will be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under “Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures” except that in this instance “nearby/occupied structures” would be adjacent occupied rooms.
- Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g., weekends or evenings) when building occupancy is at a minimum, as applicable.

## 2.6 Odor Emission Monitoring

In the event nuisance odors are identified during ground intrusive activities within the exclusion zone, frequent monitoring for nuisance odors will be conducted (30-minute intervals) 200 feet downwind, or at the nearest Site perimeter, whichever is less of a distance from the exclusion zone. In the event nuisance odors are identified, all work activities must be halted until adjustment to work practices and/or odor suppression measures are implemented to eliminate the nuisance condition.



Nuisance odors, if observed by nearby community members, can be reported to the NYSDEC Project Manager and/or the NYSDOH Public Health Specialist. Contact information is provided in Section 2.8.

## **2.7 Odor and Dust Control Plans**

Proactive mitigation measures to control odors and dust will be implemented during all ground intrusive activities, including drilling and excavation activities. The components of the odor and dust control plans are outlined in Section 12.13 and 12.14 of the RAWP, respectively.

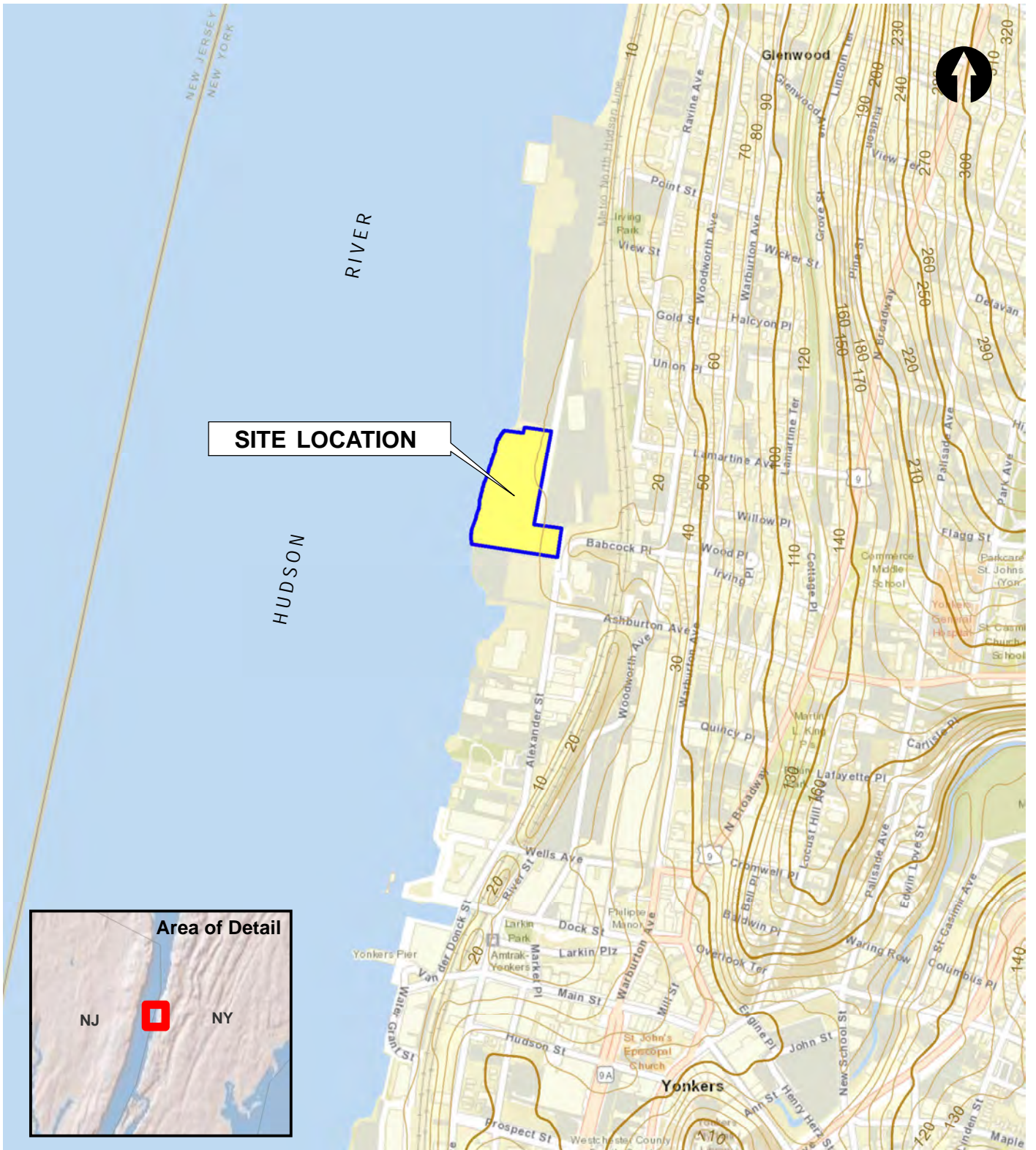
## **2.8 Project Contacts**

**Table 3**  
**Project Contacts**

<b>Company</b>	<b>Individual Name</b>	<b>Title</b>	<b>Contact Number</b>
AKRF	Marc Godick	Project Technical Support Officer, Quality Assurance/Quality Control Officer	(914) 922-2356
	Rebecca Kinal	Remedial Engineer	(914)-922-2362
	Scott Caporizzo	Project Manager	(914) 922-2354
	Brian Quinn	Field Team Leader, Site Safety Officer	(201)-314-8032 (cell)
	Claire Bearden	Field Team Leader, Site Safety Officer (Alternate)	(336) 266-9330 (cell)
Extell Hudson Waterfront LLC	Moshe Botnick	Owner's Representative	(646) 218-4215
NYSDEC	Justin Starr	Project Manager	(518) 402-9797
NYSDOH	Angela Martin	Public Health Specialist	(518) 473-4671

## FIGURES

© 2023 AKRF Q:\Projects\200131 - EXTELL FORMER EXCELSIOR BAG\Technical\GIS and Graphics\Hazmat\R\200131 Fig 1 BCP site loc map.mxd/16/2023 7:07:20 AM MAP.mvelieux



Service Layer Credits: ESRI Worldwide Street Map data; 2019.

Map Source - BCP Site Boundary from Ward Carpenter Engineers, Inc. "Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.



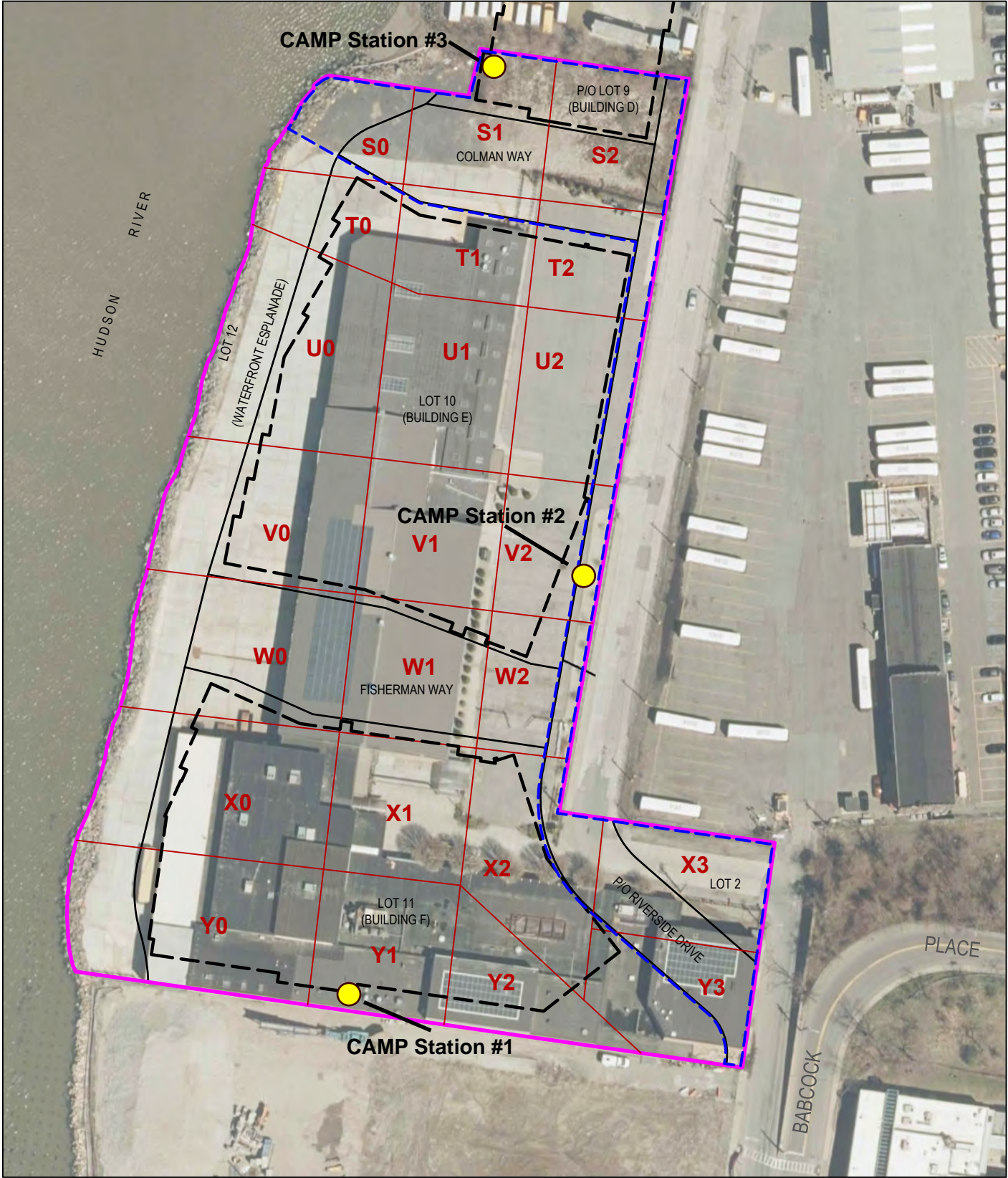
440 Park Avenue South, New York, NY 10016

**FORMER EXCELSIOR BAG**  
Yonkers, New York

**SITE LOCATION MAP**

DATE
<b>1/6/2025</b>
PROJECT NO.
<b>200131</b>
FIGURE
<b>1</b>





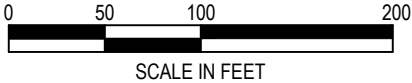
Aerial Source:  
2018 New York State ITS GIS Orthoimagery

Map Source - BCP Site Boundary from Ward Carpenter Engineers, Inc. "Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

LOT NAME

**LEGEND**  
BCP SITE BOUNDARY  
LOT BOUNDARY AND NAME  
PROPOSED LOCATION OF FUTURE BUILDING  
PHASE I CONSTRUCTION AREA  
ALPHA NUMERIC GRID  
CAMP STATION LOCATION

**NOTE:**  
1. CAMP STATION LOCATIONS MAY BE ADJUSTED, IN CONSULTATION WITH NYSDEC AND NYSDOH, BASED UPON LOCATION OF WORK ACTIVITIES AND/OR OTHER SPECIAL REQUIREMENTS DETAILED WITHIN THE SITE-SPECIFIC CAMP.



**FORMER EXCELSIOR BAG**  
Yonkers, New York

**CAMP STATION LOCATION MAP**



440 Park Avenue South, New York, NY 10016

DATE  
**1/16/2025**

PROJECT NO.  
**200131**

FIGURE  
**2**

**ATTACHMENT A**  
**NYSDOH GENERIC CAMP**

## Appendix 1A

### New York State Department of Health Generic Community Air Monitoring Plan

#### Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

#### Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

#### VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

#### Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter ( $\text{mcg}/\text{m}^3$ ) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed  $150 \text{ mcg}/\text{m}^3$  above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than  $150 \text{ mcg}/\text{m}^3$  above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within  $150 \text{ mcg}/\text{m}^3$  of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009



## **Appendix 1B**

### **Fugitive Dust and Particulate Monitoring**

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM<sub>10</sub>) with the following minimum performance standards:
  - (a) Objects to be measured: Dust, mists or aerosols;
  - (b) Measurement Ranges: 0.001 to 400 mg/m<sup>3</sup> (1 to 400,000 :ug/m<sup>3</sup>);
  - (c) Precision (2-sigma) at constant temperature: +/- 10 :g/m<sup>3</sup> for one second averaging; and +/- 1.5 g/m<sup>3</sup> for sixty second averaging;
  - (d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
  - (e) Resolution: 0.1% of reading or 1g/m<sup>3</sup>, whichever is larger;
  - (f) Particle Size Range of Maximum Response: 0.1-10;
  - (g) Total Number of Data Points in Memory: 10,000;
  - (h) Logged Data: Each data point with average concentration, time/date and data point number
  - (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
  - (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
  - (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
  - (l) Operating Temperature: -10 to 50° C (14 to 122° F);
  - (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.
4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.
5. The action level will be established at 150 ug/m<sup>3</sup> (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m<sup>3</sup>, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m<sup>3</sup> above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m<sup>3</sup> continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM<sub>10</sub> at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- (a) Applying water on haul roads;
- (b) Wetting equipment and excavation faces;
- (c) Spraying water on buckets during excavation and dumping;
- (d) Hauling materials in properly tarped or watertight containers;
- (e) Restricting vehicle speeds to 10 mph;
- (f) Covering excavated areas and material after excavation activity ceases; and
- (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m<sup>3</sup> action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.