



Decommissioning & Demolition
1 River Street
Hastings-On-Hudson, New York

Atlantic Richfield Company

Final Community Air Monitoring Plan

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1. Introduction

This Community Air Monitoring Plan (CAMP) describes the perimeter air monitoring that will be conducted during the decommissioning and demolition of Building 52 at the former Anaconda Wire and Cable Plant Site (site) in the Village of Hastings-on-Hudson, New York for Atlantic Richfield Company. A Project Locus (Figure 1) and an Air Sample Location Figure (Figure 2) are provided for reference. This plan complies with the regulations set forth in New York State Department of Health (NYSDOH) generic community air monitoring plan (CAMP), NYSDOH CAMP (NYSDOH, June 2000) and Occupational Safety and Health Administration (OSHA) regulations promulgated under 29 CFR 1910.120.

During the implementation of this CAMP, steps will be taken to prevent and reduce fugitive dust emissions and to ensure proper precautions are taken to protect human health to the surrounding community during demolition activities at the site. The CAMP addresses silicon dioxide (silica), Polychlorinated Biphenyls (PCBs), lead, asbestos containing material (ACM), and particulate air monitoring to assess if fugitive dust is transported from the site during demolition activities. The details of the dust control and air monitoring program are described in the following sections of this CAMP.

1.1 Project Objectives

There are four primary objectives of this CAMP:

- Protect human health and the environment;
- Monitor dust generation using real-time monitoring;
- Evaluate the effectiveness of dust suppression controls and determine when additional controls are required; and
- Document air quality during demolition activities.

1.2 Community Air Monitoring Program Overview

Monitoring conducted as part of this work plan shall be completed as outlined below.

- The first phase of sampling will establish baseline or background concentrations at the site prior to demolition activities. Baseline conditions will be determined utilizing real-time data and laboratory data for silica, PCBs and lead that will be collected at least 2 days before the start of work. During establishment of baseline conditions dust monitoring stations will be set up and visual inspections will be conducted to determine how nearby train traffic from Metro-North, Amtrak and commercial freight operations impact the movement of dust in and immediate to the Building 52 site. This information will be used to place dust control equipment in locations that will be the most effective in stopping train-generated dust conditions.
- The second phase of sampling will be conducted during ACM abatement activities where a third party contractor will monitor the site perimeter to ensure that ACM is not impacting the surrounding community. Air monitoring will occur, per New York State Department of Labor (NYSDOL) Rule 12 NYCRR Part 56.
- The third phase of sampling will be conducted during the daily construction/demolition tasks to document ambient air conditions at the site perimeter and to compare these conditions to the established action level criteria determined for the site. This will include real-time air sample collection for the documentation of conditions at the property boundary during demolition activities.

Real-time particulate matter (dust) data will be collected from one fixed sampling point north of the building, one fixed sampling point southeast of the building, one fixed sampling point near or on the Main Street Bridge

crossing the railroad tracks, and one fixed sampling point near the dock during barging operations. Additionally, samples will be collected from up to three additional sampling points (upwind, downwind, and on the east side of the building) during demolition activities. The location and number of the monitoring locations may change from day to day depending on site activities and meteorological conditions. Anticipated air monitoring locations are illustrated on Figure 2 (attached). The following list is a summary of the sample point locations:

- Fixed sampling point on north side of building near adjacent tennis courts
- Fixed sampling point on southeast side of building near adjacent train station
- Fixed sampling point on or near the Main Street Bridge crossing the railroad tracks
- Fixed barge sampling point
- Sampling point on east side of building during all demolition activities (movable within area)
- Upwind sampling point, as needed (movable point, to include the barge area)
- Downwind sampling point, as needed (movable point, to include the barge area)

During activities, sampling points may provide coverage for more than one of the criteria listed above (i.e. a single sampling point may be used for monitoring the east side of the building and the downwind sampling point).

Dust monitoring will be conducted utilizing direct reading aerosol (particulate) equipment capable of continuous air flow monitoring. As described herein, ambient air samples will also be collected downwind of demolition activities and analyzed for silicon dioxide, PCBs and lead. Additionally, meteorological parameters consisting of wind speed, wind direction, sigma theta, temperature and relative humidity will be monitored.

The Technical Guidance for Site Investigation and Remediation program policy issued by the New York State Department of Environmental Conservation provides guidance regarding fugitive dust and particulate monitoring. The following information is excerpted from that technical guidance regarding the particulate (dust) action levels.

“The action level will be established at 150 $\mu\text{g}/\text{m}^3$ (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 $\mu\text{g}/\text{m}^3$, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 $\mu\text{g}/\text{m}^3$ greater than 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 $\mu\text{g}/\text{m}^3$ continue to be exceeded work must stop and DER [Division of Environmental Remediation] 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.”

Based on regulatory guidance and OSHA’s time-weighted average (TWA) Permissible exposure Limits (PEL), perimeter non-ACM air quality action levels are summarized in the table below:

	Particulate matter	Silicon dioxide	PCBs (per Aroclor)	Lead
Activity	During demolition activities			
Action Level	100 µg/m ³ greater than background (15 min. avg.) or persistent visible fugitive dust is leaving the site.	The action level for particulate matter was established to limit TWA exposures to other constituents as follows: <ul style="list-style-type: none"> • Silicon dioxide (respirable crystalline silica) < 250 µg/m³ • PCBs < 0.11 µg/m³ • Lead < 30 µg/m³ 		
Response	If the action level concentration is reached downwind, confirm background level. If the working site particulate exceeds the action level, implement dust suppression techniques.			
Stop Work Limit	150 µg/m ³ greater than background for (15 min. avg.) with suppression techniques in place or persistent visible fugitive dust is leaving the site.	The stop work limit for particulate matter is intended to control other constituents as follows: <ul style="list-style-type: none"> • Silicon dioxide < 250 µg/m³ TWA per OSHA's PEL • PCBs < 500 µg/m³ TWA per OSHA's PEL • Lead < 50 µg/m³ TWA per OSHA's PEL Action level and suppression techniques shall be reviewed if analytical results exceed these levels.		
Sampling Period	15 minute average	8 hrs minimum		
Sampling Method	Data RAM	NIOSH 7500, using filter media inside pre-weighted PVC cassettes	EPA Method TO-10A using Sorbent, Polyurethan	Modified NIOSH 7300, using filter media inside pre-weighted PVC cassettes
Location	Fixed monitoring points (Tennis Club and the Train Station) and upwind location, if different than the fixed monitoring points.	Downwind locations, determined based on wind direction.		
Frequency	Continuously during all demolition activities.	Silicon dioxide, PCBs, and lead will be sampled during the beginning of demolition activities and at the onset of each significantly different activity until three days sample results are returned. If results are below the action level, sampling will be suspended.		

The particulate matter action level was evaluated to determine if this action level was protective for silica, PCBs, and lead in Section 3 of this document. This analysis concluded that this action level for particulate matter at $100 \mu\text{g}/\text{m}^3$ provides appropriate protection for the community.

ACM air monitoring locations will be determined by the ACM oversight contractor once the final ACM abatement plan is finalized by the abatement contractor.

2. Air Quality Constituents of Interest

Demolition activities have the potential to generate health risks to nearby and off-site receptors through inhalation exposures to the Constituents of Interest (COI) in the air-borne particulates (dust). Constituents of interest specific to the demolition of Building 52 include silicon dioxide (silica), PCBs, and lead, which are discussed below.

2.1 Silicon Dioxide

Silica is the common name for silicon dioxide, a white or colorless crystalline compound found naturally in sand, granite and many other types of rocks. Concrete and masonry products contain both silica sand and rock containing silica. Crystalline silica is a natural substance found in stone, rocks, sand and clay, as well as products like bricks, tiles, concrete and some plastic composites. When these materials are worked on, for example by cutting or drilling, the crystalline silica is released as a very fine dust which could be inhaled. Silica dust is only harmful when inhaled deep into the lungs, where oxygen is taken up into the blood and only from the respirable fraction typically less than 5 micrometers in size. Due to its crystalline structure, a health concern associated with inhalation of silica is an incurable lung disease called silicosis.

2.2 Polychlorinated Biphenyls (PCBs)

Polychlorinated biphenyls (PCBs) are a group of manufactured organic chemicals, with no known natural sources, which contain 209 individual isomers (known as congeners). PCBs are either oily liquids or solids and are colorless to light yellow in color. Some commercial PCB mixtures are known in the United States by their industrial trade name, Aroclor.

PCBs do not burn easily and are good insulating material. They have been used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacture of PCBs ceased in the United States in 1977. Products containing PCBs include old fluorescent lighting fixtures, electrical appliances containing PCB capacitors, old microscope oil, and hydraulic fluids.

2.3 Lead

Lead can affect most organs and systems in the body through ingestion or inhalation. The most sensitive receptor to lead is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. Construction workers are exposed to lead during the removal, renovation, or demolition of structures painted with lead pigments. Workers may also be exposed during installation, maintenance, or demolition of lead pipes and fittings, lead linings in tanks and radiation protection, leaded glass, work involving soldering, and other work involving lead metal or lead alloys.

2.4 Asbestos Containing Material

Asbestos, due to its versatility, heat resistance, tensile strength, and insulating properties was once used in most construction material, including adhesives, insulation, tar paper and tiles. Exposure to asbestos containing material (ACM), primarily friable ACM, can cause mesothelioma cancer. The ACM located at the Building 52

Site is primarily non-friable and is bound in with flashing, tar adhesive, window caulking, and window glaze. The ACM material will be abated following NYSDOL Rule 12 NYCCR Part 56, and a licensed third party contractor will provide air-monitoring oversight during abatement activities.

3. Construction/Demolition Air Monitoring

The monitoring program for this Site is intended to produce sufficient information in order to control the potential risk associated with fugitive emissions during demolition activities. Site personnel will use particulate monitoring equipment and review results to determine the need to implement dust control measures. Site constituents of interest are not volatile and therefore the predominate pathway for exposure will be inhalation of dust particles to which COIs are attached. The perimeter monitoring program will address potential exposure of the surrounding community to respirable dust generated during site operations through monitoring particulate matter on a continuous real time basis.

Air monitoring for particulate matter (fugitive dust) shall comply with NYSDOH CAMP and requirements found in DER-10. The purpose of the requirement to conduct air monitoring is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Although direct measurement of concentration of site COIs in air cannot be practicably measured in real time, an evaluation of the concentration of dust that would result in an exceedance of COIs in air was completed for each site COI to determine if the particulate matter monitoring and associated action level would provide sufficient protection.

3.1 Review of Action Level Effectiveness

The New York State Department of Environmental Conservation (NYSDEC) guidance regarding fugitive dust and particulate monitoring requires dust suppression techniques be implemented if the working site particulate measurement is greater than 100 $\mu\text{g}/\text{m}^3$ greater than the background level. This action level protects receptors and also limits the transport of constituents of interest. The following evaluation considers if the NYSDEC action level is sufficient to limit constituent-specific concentrations to below their respective desired levels.

- Institution of Occupational Safety and Health literature provides the approximate ranges for the amount of crystalline silica found in materials such as concrete/mortar and brick. Silica ranges between 25% and 70% in concrete/mortar and up to 30% in brick. Building 52 is primarily constructed with brick and mortar walls. An action level of 100 $\mu\text{g}/\text{m}^3$ for particulate matter would be protective for dust with silica content even assuming all dust was from these materials. Based on the highest potential for silica content, the maximum concentration of silica would be up to 70 $\mu\text{g}/\text{m}^3$ which is well below the PEL of 250 $\mu\text{g}/\text{m}^3$. An action level of 100 $\mu\text{g}/\text{m}^3$ can therefore be considered conservative based on the fact that the duration of public exposure would be significantly less than 45 years, the average concentration for all materials would be less than the maximum concentration of silica (70%), and the volume would not be entirely composed of materials containing silica.
- Site-specific PCBs are not volatile and therefore would not be airborne unless they are associated with particulate matter. The maximum concentration of PCBs in building materials associated with demolition is approximately 500 PPM (parts per million), which was measured within a coating material at one location on the ceiling. Typical concentrations are less than 500 PPM. Assuming an action level of 100 $\mu\text{g}/\text{m}^3$ for particulate matter, an analysis using the maximum concentration for all particulate matter would result in PCB concentrations less than 0.11 $\mu\text{g}/\text{m}^3$.
- Lead is not volatile and therefore would not be observed in air unless it is associated with particulate matter. Based on the pre-characterization sampling results, the primary source of lead containing particulate matter would be from paint. Prior to demolition activities, loose paint will be scraped to reduce the potential for lead to be present in the air during demolition. Remaining paint is well bonded to the masonry materials or steel beams and therefore has a limited potential for becoming airborne. Some paints

used prior to 1955 contained lead concentration of up to 50% by weight. Assuming an action level of $100 \mu\text{g}/\text{m}^3$ for particulate matter, an analysis using the maximum lead concentration for paint and assuming 50% of all particulate matter to be paint would result in concentrations below $30 \mu\text{g}/\text{m}^3$. This approach can be considered conservative based on the fact that pre-demolition activities will remove loose paint and field observations indicated the paint was well bonded to the building materials and resisted removal during pre-characterization sampling efforts.

Given that the action level for particulate matter is established at $100 \mu\text{g}/\text{m}^3$, it can be concluded that this action level provides adequate protection for the community for all constituents of interest (silica, PCBs, and lead). While the assumptions used for this determination are conservative, verification sampling will also be completed. Verification samples will be collected at the beginning of each demolition phase (1 – Interior paint scraping/ACM removal; 2 – East, west and north wall brick removal; 3 – West Bay Removal, 4 – East Bay Removal, etc.) or whenever there is a significantly different demolition activity that may increase concentrations of site COIs to determine the concentration of silica, PCBs, and lead in the air until three consecutive days of data is returned. These results will be compared to levels established in this CAMP for silica, PCBs, and lead. ACM air monitoring during ACM abatement will be performed by a licensed third party contractor.

3.2 Field Screening Methods

Particulate monitoring will be conducted at locations in accordance with the criteria outlined in Section 1.2.

An aerosol meter will be used to provide screening results for particulate matter. This direct reading instrument (the DataRAM, or equivalent) has a measurement range from 0.001 to $400 \text{mg}/\text{m}^3$, and provides appropriate sensitivity for site applications.

These direct reading instruments will be calibrated on a daily basis and maintained in accordance with the manufacturer's specifications. All real-time monitoring data will be logged. Data records will be referenced to site location, time and date of reading, and the initials of the field technician. The air-monitoring information will be monitored throughout the day during site activities and reviewed with the documentation package to ensure the airborne levels at the Site perimeter are less than the established Site action levels.

Airborne particulates at the monitoring points will be measured on a throughout the day during work activities and reported as 15-minute averages. An alarm (e.g. audible alarm and an electronic notification to a computer or mobile phone) would provide notification that the downwind location is measuring concentrations equal to or greater than the particulate matter action level. If the ambient air concentration at the downwind location is $100 \mu\text{g}/\text{m}^3$ greater than background (as measured at the upwind site) for a 15-minute period, or if airborne dust is observed leaving the work site, dust suppression activities will be employed. Work activities may continue during dust suppression activities provided that the downwind levels do not continually exceed $150 \mu\text{g}/\text{m}^3$ greater than background and persistent visible dust is not migrating from the work site. If Site activities warrant monitoring overnight or on the weekends, the dust monitors will continue collecting measurements, with an alarm sent to Site personnel if thresholds are exceeded.

If, after implementation of dust suppression techniques, downwind levels are greater than $150 \mu\text{g}/\text{m}^3$ greater than the upwind level, work will cease and a re-evaluation of activities initiated. Work will resume once dust suppression measures and other controls are successful in reducing the downwind concentration to less than

150 $\mu\text{g}/\text{m}^3$ of the upwind level for 15 minutes and in preventing persistent visible dust from migrating beyond the work site.

Meteorological parameters consisting of wind speed, wind direction, temperature and relative humidity will be monitored continuously onsite and reported as 15-minute averages in the data set.

3.3 Constituent Specific Monitoring

A characterization of air quality with respect to site COIs can be verified through additional constituent-specific sampling and laboratory analysis to determine that there are not exceedances of the levels included in Section 1.2.

3.3.1 Sampling Location and Frequency

Constituent-specific monitoring provides verification samples that shall be collected to determine the concentration of silica, PCBs, and lead in the air at the beginning of each demolition phase or whenever there is a significantly new demolition activity that may increase concentrations of site COIs (i.e., Interior paint scraping/ACM removal; brick removal; ceiling demolition and bay removal, etc., as listed in Section 3.1, above) until three consecutive days of data is returned. These results will be compared to levels established in this CAMP for silica, PCBs, and lead. Constituent-specific monitoring will be conducted downwind of the demolition activities.

Downwind directions will be pre-established each day by reviewing the actual site-specific meteorological data at a representative location on site. Air monitoring locations may be moved if a significant change in wind direction is observed, or due to the location, nature and intensity of site activity, or results of the contractor's health and safety monitoring. Modifications of monitoring locations shall be documented. Perimeter monitors will be placed as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

Samples will be collected during the active working period on the site for each sampling day, generally during the hours of 7 AM to 5 PM. Air pumps will be installed and operated at continuous flow. The pumps pull ambient air through a sample media at a constant flow rate. The devices, set approximately 5 feet above ground, will be deployed at the beginning of each day prior to any demolition activities taking place. The sampling devices will be removed at the end of the workday, and the sample media will be sent off site for laboratory analysis. Samples collected will be sent to the laboratory at the end of each day of monitoring whenever practicable.

Third party ACM sampling will follow NYSDOL Rule 12 NYCRR Part 56 procedures, and will occur only during ACM abatement activities. Prior to abatement contractor mobilization, a minimum of five (5) samples will be collected within Building 52, and at minimum of one background ambient sample will be collected outside of Building 52. Subsequent collection of air samples during all phases of ACM abatement will follow Subpart 56-7 to Subpart 56-9 of NYSDOL Rule 12 NYCRR Part 56.

3.3.2 Constituents of Interest

Constituents of Interest	Action Level	Detection Limit	Sampling Method	Media	Sampling Period
Silica	250 $\mu\text{g}/\text{m}^3$	Quartz/Cristobalite – 3 $\mu\text{g}/\text{m}^3$ Tridymite – 5 $\mu\text{g}/\text{m}^3$	NIOSH 7500	PVC Filter	8 hrs
PCBs	0.11 $\mu\text{g}/\text{m}^3$	0.1 to 1 $\mu\text{g}/\text{m}^3$	EPA Method TO-10A	Sorbent, Polyurethane Foam	8 hrs
Lead	30 $\mu\text{g}/\text{m}^3$	0.062 $\mu\text{g}/\text{m}^3$	Modified NIOSH 7300	MCE Filter	8 hrs
ACM (Only During ACM Abatement Activities)	0.01 fibers/cc	0.002 fibers/cc	NIOSH 7400	Cellulose Ester Membrane	8 hrs

Air samples will be collected using SKC universal sample pumps (or equivalent) at the perimeter locations over time periods that average approximately 8-10 hours a day for lead, PCBs, and silica at a rate of approximately 5.0 liters/minute.

Meteorological data and real-time data collected will be evaluated and used to select what sample is anticipated to be the downwind sample for each day of monitoring if there is any uncertainty regarding the predominant wind direction.

At the conclusion of each sampling day or event, the sample pumps will be removed from their monitoring locations, sampling tubes will be removed from the inlet tubing, individual cassettes will be labeled with the monitoring location identification number, date, and total monitoring time, and then be refrigerated or placed into an approved shipping container. Chain-of custody forms will be completed and shipped with the samples to the analytical laboratory. When completing the chain-of- custody forms, the sampling technician will identify the specific analytes to be analyzed.

Reporting of sampling events will include meteorological data, and the presence of potential sources of site COIs. Weather observations will be taken from the weather station on Site.

3.4 Equipment and Sample Media Specifications

3.4.1 SKC Leland Legacy Sample Pumps

Silica, PCBs and lead air samples will be collected using SKC Leland Legacy Sample Pumps (SKCs) or equivalent. SKCs will operate at flow rates of approximately 5 l/min for the collection of air samples. Silica will be sampled using a 37-mm, 5.0 μm pre-weighted PVC cassette. PCBs will be sampled using a 20-mm x 7.6 cm polyurethane foam (PUF) cylinder, fitted under slight compression inside a glass cartridge. Lead will be sampled using a 37-mm, 5.0 μm pre-weighted PVC cassette.

Operation

After individual calibration of each pump/cassette combination, pumps will be placed at their specific monitoring locations, at heights generally 4 to 6 feet above ground surface to simulate the breathing zone. Pumps will be routinely checked during the day, generally on an hourly basis, to verify proper operation.

At the end of the day, the total accumulated time as registered on the pump run time clock will be compared with the times calculated from the recorded start/end times. If consistent, the time noted on the pump will be used to calculate the total volume sampled by the pump according to:

$$\text{Total minutes (min)} \times \text{flow rate (l/min)} = \text{total volume (l)}$$

Calibration

Each pump cassette combination will be individually calibrated using a SKC calibrator. Pumps will be calibrated at the beginning and end of each day and the arithmetic mean of the two measurements will be used to calculate the flow rate and, from that, the total volume.

3.4.2 The DataRAM (pDR-1000AN)

Real time monitoring of particulates will be conducted using a DataRAM or equivalent device. The DataRAM monitor provides essentially real time analyses of particle matter less than 10µm in diameter using internally mounted precision spaced pulsed laser beams for quantification. Air enters the sampling cavity by diffusion and by the passing of ambient air over and around the instrument. Output is in mg/m³ with a detection limit of 1 µg/m³ declared by the manufacturer.

Calibration

The instrument will be calibrated prior to each day of use, and during the day, if necessary. The DataRAM is calibrated at the zero point by placing it in a zippered polyethylene bag, which was then closed and purged with at least 3 volumes of zero air obtained by using a sub-micron filter capable of filtering particles of less than 0.1µm diameter in line with the fill port. After setting the zero point, the instrument is, according to the manufacturer's instructions, ready for the analyses of particles.

3.4.3 Meteorological Station

Meteorological data will be recorded using a Weather Monitor II from Davis Instruments or equivalent device. Pertinent parameters with respect to the CAMP will be recorded and primarily include wind direction and high maximum wind speed.

3.5 Documentation

The instruments will be calibrated at the beginning of each workday and the time and name of field personnel will be recorded. In addition, weather conditions at the site will be recorded each day. Measurements will be documented for each reading at all designated monitoring locations.

The following information will be recorded for each instrument reading:

- Date and time of reading;
- Reading location;
- Concentration reading; and
- Demolition activities.

Third party ACM documentation activities will follow the procedures and protocols outlined in NYSDOL Rule 12 NYCRR Part 56.

3.5.1 Sample Custody

For each sample that is collected, an entry will be made on a chain-of-custody form supplied by the laboratory. The information to be recorded includes the sampling date and time, sample identification number, matrix type, requested analyses and methods, preservatives, and the sampler's name. Sampling team members will maintain custody of the samples until they are relinquished to laboratory personnel or a professional courier service. The chain-of-custody form will accompany the samples from the time of collection until received by the laboratory. Each party in possession of the samples (except the professional courier service) will sign the chain-of-custody form signifying receipt. The chain-of-custody form will be placed in a plastic bag and shipped with samples packaged with ice. A copy of the original completed form will be provided by the laboratory along with the report of results. Upon receipt, the laboratory will inspect the condition of the sample containers and report the information on chain-of-custody or similar form.

3.6 Quality Assurance/Quality Control (QA/QC)

The quality assurance and quality control (QA/QC) procedures proposed for this program are described in this section. The QA/QC procedures associated with the air quality measurements program are designed to evaluate and ensure the accuracy and precision of monitoring methods. Third party ACM QA/QC activities will follow the procedures and protocols outlined in NYSDOL Rule 12 NYCRR Part 56

3.6.1 Particulate Monitors

The DataRAM will be used to continuously monitor particulate emissions at the designated locations. At a minimum, the DataRAMs will be field checked daily using zero calibration air. At the beginning of each workday, when site intrusive activities take place, a calibration check will be performed on each unit at the measurement location. Two calibration points will be checked to determine instrument performance. A zero (or particulate-free) test sample, using the appropriate particulate filter supplied by the manufacturer for this purpose, will be placed over the sample inlet.

The data output for the DataRAM will be observed and the response recorded in the field logbook. An upscale calibration point will also be checked by activating the "on-board" calibration feature. This procedure activates a light-emitting diode to simulate one upscale particulate concentration value. The results will be recorded in the field logbook and maintained on-site throughout the duration of site activities. Instrument calibration procedures will be conducted according to the manufacturer's recommendations.

If the field technician determines that the instrument has a problem, the unit will be repaired or replaced, whichever takes less time. During the latter part of the workday each air quality measurement device will be

QA/QC checked. If a system fails the QA/QC procedure and cannot be quickly corrected, the site manager will be immediately notified. The site technician will then take immediate measures to remedy the situation.

3.6.2 Constituent-specific Sampling

Procedures to maintain laboratory quality assurance and quality control include appropriately cleaned sample containers, proper sample identification and logging, applicable sample preservation and storage, and analysis within prescribed holding times. Laboratory Standard Operating Procedures for analysis of silica, PCB, and lead shall be available upon request from the selected laboratory.

Field duplicate and field blank samples will be collected during the beginning of demolition activities and as-needed thereafter consistent with a rate of 1 per 20 samples and submitted to the laboratory for analysis consistent with non-QA/QC samples. Field duplicate samples will be collected by co-locating a second SKC pump with the existing SKC pump. Horizontal separation between co-located probe inlets will be between 1 and 3 meters. The duplicate will be collected during the same period as the primary sample.

Field blanks will be sample media that will be handled in the exact same way as regular samples (open, seal, transport), except that no ambient air is drawn through them. Laboratory control samples will be analyzed in duplicate with each batch of project samples and results provided in laboratory reports.

Field Duplicate Samples

Precision will be measured in terms of the absolute value of the relative percent difference (RPD) as expressed by the following equation:

$$RPD = \frac{\frac{R1-R2}{(R1+R2)}}{2} \times 100\%$$

Acceptance criteria for duplicate analyses performed on solid matrices will be 100% and aqueous matrices will be 35%. RPD values outside these limits will require an evaluation of the sampling and/or analysis procedures. Corrective actions may include re-analysis of additional sample aliquots and/or qualification of the data.

Laboratory Control Sample (LCS) Analyses

The laboratory will perform LCS analyses prepared from Standard Reference Materials (SRMs). The SRMs will be supplied from an independent manufacturer and traceable to National Institute of Standards and Technology (NIST) materials with known concentrations of each target analyte. In cases where an independently supplied SRM is not available, the LCS will be prepared by the laboratory from a reagent lot other than that used for instrument calibration.

The laboratory will evaluate LCS analyses in terms of percent recovery using the following equation:

$$\% \text{ Recovery} = \frac{\text{Spiked Sample} - \text{Background}}{\text{Known Value of Spike}} \times 100\%$$

LCS recoveries that do not meet acceptance criteria will be deemed invalid. If sample analysis is performed in association with an out-of-control LCS sample analysis, the data will be deemed invalid.

Corrective actions will be initiated to investigate the problem. The analytical anomaly will be noted in the sample delivery group (SDG) Case Narrative and reviewed by the data validator. The data validator will confirm that appropriate corrective actions were implemented and recommend the applicable use of the affected data.

Surrogate Compound Recoveries

For PCB sample analyses, surrogates will be added to the sample to assess extraction efficiency. Method specific quality control (QC) limits are provided in the attached laboratory method SOPs. Surrogate compound recoveries that do not fall within accepted QC limits for the analytical methodology performed will have the analytical results qualified as appropriate by the laboratory and noted in the laboratory report Case Narrative.

To ascertain the effect non-compliant surrogate compound may have on the reported results, the recovery data will be evaluated as part of the validation process. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

Laboratory Method Blank Analyses

Method blank sample analysis will be performed as part of each batch for each analytical method. If target compounds are detected in the method blank samples, the reported results will be qualified by the laboratory and noted in the laboratory report Case Narrative. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

3.6.3 Meteorological Measurement System

The on-site meteorological system will continuously measure and report the parameters listed in Section 1.2 of this plan. QA/QC and calibration procedures will follow the manufacturer's recommendation for meteorological systems. A calibration of each parameter will be conducted on-site at the time of installation of the meteorological tower system and at the end of the program. The calibration results will be noted in the on-site field logbook and provided in the project report.

4. Data Summaries

4.1 Data Summaries

Daily data summaries will be prepared to document the field screening results for the day. The summaries will include the locations monitored, hourly measured results, the date and time of the reading, location-specific observations, weather conditions, site activities related to air quality, and the daily maximum value and daily average value for each day. Monitoring results (real-time and constituent-specific) will be summarized as they become available and results will be maintained on site as well as uploaded to the Hastings-on-Hudson website (www.oneriverstreet.com).

4.2 Final Report

The final report for the air monitoring program will include a description of site conditions, summary of sampling and analytical procedures, and analytical results. The air monitoring results will be compared with action levels to provide an evaluation of the potential human health risk associated with site activities. Third party ACM reporting activities will follow the procedures and protocols outlined in NYSDOL Rule 12 NYCRR Part 56

5. Corrective Actions

Based upon perimeter particulate monitoring data described in the previous sections and/or visual observation, the need for dust suppression procedures will be determined by the Site Health and Safety Officer. The documents, which will serve as guidance for the implementation of dust control procedures, are the Air Quality Management District (AQMD) Rule 403 and the NYSDOH CAMP (NYSDOH, June 2000). The demolition activities will be conducted in a manner that reduces the potential to generate dust and particulates from being generated. Based on the guidance from these documents the following techniques may be employed to mitigate the generation and migration of fugitive dust during demolition activities:

- 1) Increase frequency, volume, and/or coverage of water misting, sprays, and foggers to prevent debris and dirt from drying.
- 2) Provide additional dust suppression systems and operating personnel during the task duration.
- 3) Routine checks to ensure that covered stockpiles remain covered
- 4) Reduce the pace of, or cease, dust producing activity until the problem is corrected.
- 5) Notify the area supervisor of dust conditions and implement dust suppression procedures.
- 6) Remove accumulated dirt and soil from problematic areas, and/or cover, enclose, or isolate dust generating areas/surfaces to shield them from the wind.
- 7) Modify operating procedures and methods to eliminate problematic conditions.
- 8) Increase level of worker awareness and instruct them on implementation of any new or modified operating procedures.
- 9) Report and document all procedural modifications and results.
- 10) Perform routine audits of dust suppression methods and work areas for dust sources.

If, after implementation of dust suppression techniques, downwind particulate concentrations are more than $150 \mu\text{g}/\text{m}^3$ greater than the upwind level or persistent visible fugitive dust is leaving the site, work will be suspended until appropriate corrective measures are identified and implemented to remedy the situation and the New York State Division of Environmental Remediation (DER), NYSDEC, and NYSDOH shall be notified, if necessary. Dust suppression techniques are outlined in the *Demolition Work Plan* (Envirocon 2017), Section 9.5, and consist of using "Dust Boss" demolition water misting fans throughout the interior and exterior of Building 52 as the work-fronts change, as well as using surfactants when practicable. Placement of the misting fans will be determined daily, and will be driven by site conditions. Fans may be moved throughout the day as conditions change. Metered water will be supplied from the Village of Hastings fire hydrant located on the eastern edge of the property. Stockpile material from demolition will be treated with water, treated with surfactant, or tarped, depending on the duration that the stockpile will remain in place, in order to minimize dust migration. Intermodal containers will be tarped immediately after loading to eliminate migration of dust.

6. References

Air Quality Management District (AQMD). 2001. Rules and Regulations.
<http://www.aqmd.gov/rules/rulesreg.html>.

Envirocon, Inc., 2017. *Hastings on Hudson Building 52 Demolition Project, Demolition Work Plan*.

Haley & Aldrich, Inc., 2008. *Modified conceptual Site Model Former Anaconda Wire and Cable Site, Hastings on Hudson, New York, NYSDEC Site #3-60-022*.

Haley & Aldrich, Inc., 2009. *Decommissioning and demolition of Buildings 51, 51A, 72, 72A, 22, 22A, 22B, 22C, 57, and 17. Atlantic Richfield Company, Hastings on Hudson, New York*.

Haley & Aldrich, Inc., 2001. *Hammond Air Monitoring Plan, Hammond Indiana*.

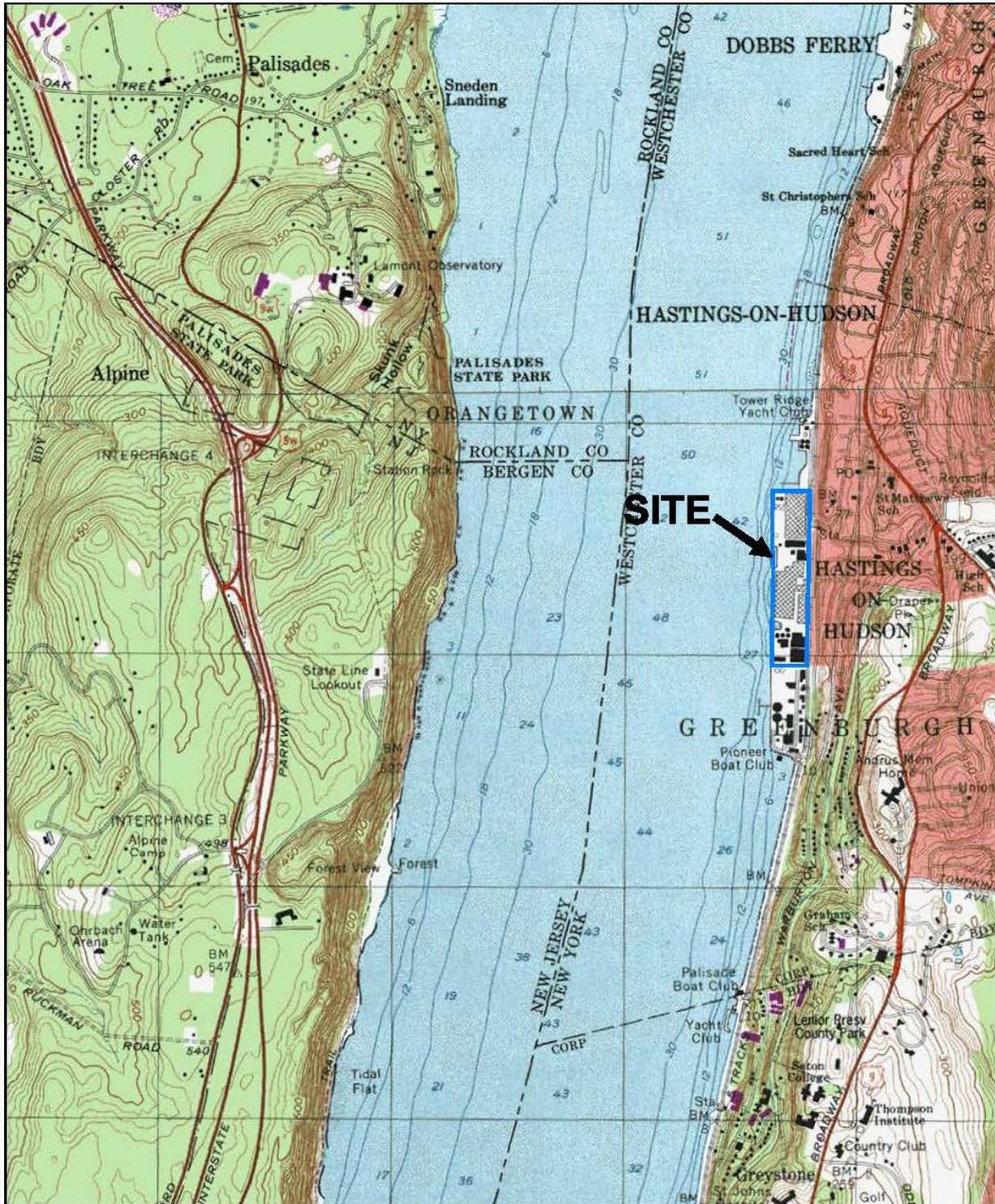
Haley & Aldrich, Inc., 2008. *Air Monitoring Work Plan for Remediation of Area of Interest, Old Fort Wayne Former MGP Site, Fort Wayne, Indiana*.

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

IT Corporation. 2000. *Remedial Investigation Report, Harbor-At-Hastings Site, Hastings-On- Hudson, New York, NYSDEC Site Code #3-60-22*.

DER-10 / *Technical Guidance for Site Investigation and Remediation (DER-10)*, New York State Department of Environmental Conservation. Office of Remediation and Materials Management. May, 2010.

Figures



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SITE COORDINATES: 40°58'36"N 73°53'9"W

U.S.G.S. QUADRANGLE: HASTINGS-ON-HUDSON, NEW YORK

HALEY ALDRICH

OU-1 REMEDIATION
 NYSDEC SITE #3-60-022
 1 RIVER STREET
 HASTINGS-ON-HUDSON, NEW YORK

PROJECT LOCUS

SCALE: 1:24000
 APRIL 2015

FIGURE 1



JACOBS

Source: Bing Maps Aerial, ESRI

NAME: gs.cob

Date: 4/24/2017



Legend

-  Fixed Air Monitoring Locations
-  Potential Upwind/Downwind Monitoring Locations

0 100 200
1:2,400 Feet

Figure 2
Building 52 Demolition
Air Monitoring Locations