Site A OU-2
Remedial Excavation Work Plan

Prepared for
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SITE AOU-2 EXCAVATION WORK PLAN (EWP)

1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter contamination, the site owner or their representative will notify the NYSDEC. Table [1] includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information.

Table [1]: Notifications*

Ronnie Lee	518-402-9767 Ronnie.lee@dec.ny.gov
Jane O'Connell	718 482-4599 jane.oconnell@dec.ny.gov
Toni Chioffi *(SWPPP and NOI)	518 402-8109 toni.chioffi@dec.ny.dec

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the temporary engineered cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered 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 copy of the Contractor's Stormwater Pollution Prevention Plan (SWPPP) stamped by a NYS Professional Engineer and Notice of Intent (NOI);
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor's health and safety plan (HASP), in electronic format;
- Identification of proposed disposal facilities for potential waste streams; and
- Contractor's proposed transportation routes for all waste stream removals; and
- Identification of sources of any additional imported backfill, along with all required chemical testing results (If testing has not been performed, backfill may not be imported until testing has been submitted to and approved by NYSDEC).

2 SOIL/WASTE SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a Qualified Environmental Professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during remediation.

Soils will be segregated based on previous delineation and screening results into material that requires off-site disposal and material that can be reused on-site as soil beneath a cover. Section 7 discusses reuse of on-site material.

3 SOIL STAGING METHODS

Soil and waste stockpiles 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 daily and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. Daily construction reports will be compiled into weekly reports and submitted to NYSDEC.

4 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 remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The Qualified Environmental Professional will be responsible for ensuring that all outbound trucks will be free of loose soil and washed (if necessary) at the truck wash before leaving the site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

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.

5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 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 loaded with site materials will exit the vicinity of the site and transport material directly to the disposal facility. No additional material may be added and no temporary storage of trucks are allowed once material leaves the site.

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 on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

6 MATERIALS DISPOSAL OFF-SITE

The vast majority of material excavated and removed from the site will be treated as contaminated and regulated material. There will be several different waste streams leaving the site for treatment and/or disposal as well as some material that will be available to remain on-site for reuse as backfill. Material removed from the site will include trees and shrubs from the clearing activity, boulders that remain on-site that cannot be broken into smaller sizes sufficient for backfill, MGP-impacted material and other excess fill. All material will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. 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, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Construction Completion Report (CCR). The CCR will be submitted to NYSDEC prior to final development in order to provide formal notification that the removal presented in the Response Plan has been completed. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts. The

Final Engineering Report will be prepared and submitted to NYSDEC following the development of the Site that includes installation of all engineering and institutional controls.

7 MATERIALS REUSE ON-SITE

The Qualified Environmental Professional will ensure that procedures defined for materials reuse in this EWP are followed and that unacceptable material does not remain on-site. Stockpiled on-site material, including historic fill and non-MGP impacted material removed as part of the remediation that is acceptable for reuse on-site will be placed approximately 1 ft above the high water table.

Excavated material not allocated for off-site disposal will be segregated and staged separately from MGP-impacted material in either the area of the current large on-site stockpile or in stockpiles of an appropriate size that can be managed appropriately for dust or erosion control.

Prior to using onsite staged material as backfill, any excavation that has reached the water table will first be backfilled with approved stone aggregate and the 2-5% mixture of approved groundwater treatment material to a depth of 1 ft above the water table. A geotextile fabric material will then be placed on the surface of the gravel and along the sides of the excavation. Backfill material may then be placed and properly compacted in the excavation to a depth of 1 ft below final remedial grade. An orange or similar visual marker barrier will then be placed over the backfill in those areas that have reached the water table and the final 1 ft of backfill from the on-site staged stockpile will be used to complete the backfill. Areas that do not reach the water table will not require the visual barrier at the 1 ft depth. The remaining 1 ft of material will be placed and graded.

Concrete crushing or processing on-site 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.

The final graded surface will remain until the redevelopment activity begins and this will be performed following completion and submittal of the Final Engineering Report. Final development will require final engineering and institutional controls including but not limited to; asphalt pavement, concrete slabs and 1 ft of material meeting the commercial end-use SCOs in open areas.

8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed of 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, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) must be performed under a SPDES permit. Under current NYS Division of Environmental Remediation guidelines, the requirement for obtaining an SPDES permit for short-term releases of treated water resulting from remediation sites may be waived, so long as strict effluent standards developed by the NYS Division of Water are met prior to discharge.

If water generated from construction activities is desired to be recharged back to the Site the process for collection, treatment, sampling and reporting prior to discharge will be as follows: After dewatering and treatment has been performed, representative samples shall be collected in a temporary storage tank at a frequency of one sample per volume equal to 50% of the design capacity of the carbon treatment system as per the manufacturers recommendation combined with the groundwater concentrations. Re-treatment and re-sampling shall be performed as necessary until the criteria is met. NYSDEC will review results from post-treatment analysis prior to giving approval for discharge.

Effluent limitations for discharge back onto Site are provided in Table 2 below.

Table 2. TOGS Groundwater Effluent Limitations (µg/L)

Volatile Organic Compounds (VOCs)	
1,1,1,2-Tetrachloroethane	5
1,1,1-Trichloroethane	5
1,1,2,2-Tetrachloroethane	5
1,1,2-Trichloroethane	1
1,1-Dichloroethane	5
1,1-Dichloroethene	5
1,1-Dichloropropene	5
1,2,3-Trichlorobenzene	5
1,2,3-Trichloropropane	0.04
1,2,4,5-Tetramethylbenzene	5
1,2,4-Trichlorobenzene	5
1,2,4-Trimethylbenzene	5
1,2-Dibromo-3-chloropropane	0.04
1,2-Dibromoethane	0.0006
1,2-Dichlorobenzene	3
1,2-Dichloroethane	0.6
1,2-Dichloroethene, Total	NS
1,2-Dichloropropane	1
1,3,5-Trimethylbenzene	5
1,3-Dichlorobenzene	3
1,3-Dichloropropane	5
1,3-Dichloropropene, Total	NS
1,4-Dichlorobenzene	3
1,4-Dioxane	NS
2,2-Dichloropropane	5
2-Butanone	50
2-Hexanone	50
4-Methyl-2-pentanone	NS
Acetone	50
Acrylonitrile	5
Benzene	1
Bromobenzene	5
Bromochloromethane	5
Bromodichloromethane	50
Bromoform	50
Bromomethane	5
Carbon disulfide	60
Carbon tetrachloride	5
Chlorobenzene	5
Chloroethane	5
Chloroform	7
Chloromethane	NS
cis-1,2-Dichloroethene	5
cis-1,3-Dichloropropene	0.4
Dibromochloromethane	50
Dibromomethane	5
Dichlorodifluoromethane	5
Ethyl ether	NS
Ethylbenzene	5
Hexachlorobutadiene	0.5
Isopropylbenzene	5
Methyl tert butyl ether	10
Methylene chloride	5
n-Butylbenzene	5
n-Propylbenzene	5
Naphthalene	10
o-Chlorotoluene	5
o-Xylene	5
p-Chlorotoluene	5
p-Diethylbenzene	NS
p-Ethyltoluene	NS
p-Isopropyltoluene	5
p/m-Xylene	5
sec-Butylbenzene	5
Styrene	930
tert-Butylbenzene	5
Tetrachloroethene	5
Toluene	5
trans-1,2-Dichloroethene	5
trans-1,3-Dichloropropene	0.4
trans-1,4-Dichloro-2-butene	5
Trichloroethene	5
Trichlorofluoromethane	5
Vinyl acetate	NS
Vinyl chloride	2
Xylenes, Total	NS

Semi-Volatile Organic Compounds	
1,2,4,5-Tetrachlorobenzene	5
1,2,4-Trichlorobenzene	5
1,2-Dichlorobenzene	3
1,3-Dichlorobenzene	3
1,4-Dichlorobenzene	3
2,4,5-Trichlorophenol	NS
2,4,6-Trichlorophenol	NS
2,4-Dichlorophenol	2
2,4-Dimethylphenol	2
2,4-Dinitrophenol	2
2,4-Dinitrotoluene	5
2,6-Dinitrotoluene	5
2-Chlorophenol	NS
2-Methylphenol	NS
2-Nitroaniline	5
2-Nitrophenol	NS
3,3'-Dichlorobenzidine	5
3-Methylphenol/4-	NS
3-Nitroaniline	5
4,6-Dinitro-o-cresol	NS
4-Bromophenyl phenyl ether	NS
4-Chloroaniline	5
4-Chlorophenyl phenyl ether	NS
4-Nitroaniline	5
4-Nitrophenol	NS
Acetophenone	NS
Benzoic Acid	NS
Benzyl Alcohol	NS
Biphenyl	NS
Bis(2-chloroethoxy)methane	5
Bis(2-chloroethyl)ether	1
Bis(2-chloroisopropyl)ether	5
Bis(2-Ethylhexyl)phthalate	5
Butyl benzyl phthalate	50
Carbazole	NS
Di-n-butylphthalate	50
Di-n-octylphthalate	50
Dibenzofuran	NS
Diethyl phthalate	50
Dimethyl phthalate	50
Hexachlorocyclopentadiene	5
Isophorone	50
n-Nitrosodi-n-propylamine	NS
Nitrobenzene	0.4
NitrosoDiPhenylAmine(NDPA)/	50
P-Chloro-M-Cresol	NS
Phenol	2
2-Chloronaphthalene	10
2-Methylnaphthalene	NS
Acenaphthene	20
Acenaphthylene	NS
Anthracene	50
Benzo(a)anthracene	NS
Benzo(a)pyrene	NS
Benzo(b)fluoranthene	0.002
Benzo(ghi)perylene	NS
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Dibenzo(a,h)anthracene	NS
Fluoranthene	50
Fluorene	50
Hexachlorobenzene	0.04
Hexachlorobutadiene	0.5
Hexachloroethane	5
Indeno(1,2,3-cd)Pyrene	0.002
Naphthalene	10
Pentachlorophenol	2
Phenanthrene	50
Pyrene	50

Metals	
Aluminum	2,000
Antimony	6
Arsenic	50
Barium	2,000
Beryllium	3
Cadmium	10
Calcium	NS
Chromium	100
Cobalt	NS
Copper	1,000
Iron	600
Lead	50
Magnesium	35,000
Manganese	600
Mercury	1.4
Nickel	200
Potassium	NS
Selenium	20
Silver	100
Sodium	NS
Thallium	0.5
Vanadium	NS
Zinc	5,000
Cyanide	
Cyanide (Total)	400

9 TEMPORARY COVER SYSTEM

After the completion of soil removal, backfill of the excavation and any other invasive activities, a temporary cover system will be installed bringing the site to an elevation that prepares it for redevelopment. The approved Response Plan (November 2003) provides a description for the Site use to be a paved parking lot. This plan is expected to also include commercial redevelopment similar to other facilities within the Hunts Point Food Distribution Center that would fit the confines of the property. The redevelopment will be performed following the completion of remedial action efforts and will require notification of NYCEDC, NYSDEC and preparation of several documents that follow the processes presented in this excavation work plan. A demarcation layer, consisting of [orange snow fencing material, white geotextile or equivalent material, etc.] will be placed over areas where extensive remedial excavations have been completed and MGP impacted material was removed down into the water table. This will provide a visual reference to identify areas where specialized backfill was placed into the water table in order for this to be identified easily during future redevelopment and that no disturbance of the material occurs with possible exception of pile installation for structural supports. The intention is for specialized backfill material placed below the depth of groundwater to remain and not be removed.

The remedy being performed under the approved Response Plan is intended to present a temporary cap until final development design and contracting are completed. The Site will not be used for any active purpose until the final development. The type of cover system required for final development will include capping with a permanent engineering cap and will comprised of one or multiple cover elements.

10 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 EWP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

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 proposed land use (commercial), protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 3 below. 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.

Table 3: Backfill Analytical Parameters

Contaminant	CAS Number	Backfill Limits (ppm)
Metals		
Arsenic	7440-38-2	16
Barium	7440-39-3	400
Beryllium	7440-41-7	47
Cadmium	7440-43-9	7.5
Chromium, hexavalent [1]	18540-29-9	19
Chromium, trivalent [1]	16065-83-1	1,500
Copper	7440-50-8	270
Total Cyanide	57-12-5	27
Lead	7439-92-1	450
Manganese	7439-96-5	2,000
Total Mercury	-	0.73
Nickel	7440-02-0	130
Selenium	7782-49-2	4
Silver	7440-22-4	8
Zinc	7440-66-6	2,480
PCBs/Pesticides		
2,4,5-TP Acid (Silvex)	93-72-1	3.8
4,4'-DDE 72-55-9	17	
4,4'-DDT 50-29-3	47	
4,4'-DDD 72-54-8	14	
Aldrin 309-00-2	0.19	
alpha-BHC 319-84-6	0.02	
beta-BHC 319-85-7	0.09	
Chlordane (alpha)	5103-71-9	2.9
delta-BHC 319-86-8	0.25	
Dibenzofuran	132-64-9	210
Dieldrin 60-57-1	0.1	
Endosulfan I	959-98-8	102
Endosulfan II	33213-65-9	102
Endosulfan sulfate	1031-07-8	200
Endrin 72-20-8	0.06	
Heptachlor 76-44-8	0.38	
Lindane 58-89-9	0.1	
Polychlorinated biphenyls	1336-36-3	1

Table 3 Backfill Analytical Parameters (continued)

Contaminant	CAS Number	Backfill Limits (ppm)
Volatiles		
1,1,1-Trichloroethane	71-55-6	0.68
1,1-Dichloroethane	75-34-3	0.27
1,1-Dichloroethene	75-35-4	0.33
1,2-Dichlorobenzene	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02
cis-1,2-Dichloroethene	156-59-2	0.25
trans-1,2-Dichloroethene	156-60-5	0.19
1,3-Dichlorobenzene	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12
Carbon tetrachloride	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene	100-41-4	1
Hexachlorobenzene	118-74-1	3.2
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether	1634-04-4	0.93
Methylene chloride	75-09-2	0.05
n-Propylbenzene	103-65-1	3.9
sec-Butylbenzene	135-98-8	11
tert-Butylbenzene	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Vinyl chloride	75-01-4	0.02
Xylene (mixed)	1330-20-7	1.6

Table 3: Backfill Analytical Parameters (continued)

Contaminant	CAS Number	Backfill Limits (ppm)
Semi-volatiles		
Acenaphthene	83-32-9	98
Acenapthylene	208-96-8	107
Anthracene	120-12-7	500
Benz(a)anthracene	56-55-3	1
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1.7
Benzo(g,h,i)perylene	191-24-2	500
Benzo(k)fluoranthene	207-08-9	1.7
Chrysene	218-01-9	1
Dibenz(a,h)anthracene	53-70-3	0.56
Fluoranthene	206-44-0	500
Fluorene	86-73-7	386
Indeno(1,2,3-cd)pyrene	193-39-5	5.6
m-Cresol	108-39-4	0.33
Naphthalene	91-20-3	12
o-Cresol	95-48-7	0.33
p-Cresol	106-44-5	0.33
Pentachlorophenol	87-86-5	0.8
Phenanthrene	85-01-8	500
Phenol	108-95-2	0.33
Pyrene	129-00-0	500

Footnotes:
1. 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 for hexavalent chromium.

Notes:
The following material may be imported, without chemical testing, to be used as backfill beneath pavement or the final soil cover (i.e. the uppermost 1 or 2 feet, depending on the site's use restriction):
- Rock or stone, consisting of virgin material from a permitted mine or quarry;
- Recycled concrete, brick or asphalt from a NYSDEC-registered C&D processing facility which conforms to Section 304 of the New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002). This material must contain less than 10% (by weight) material which would pass through a size 200 sieve

11 STORMWATER POLLUTION PREVENTION

The Site will require a Stormwater Pollution Prevention Plan (SWPPP) prior to beginning any remediation and disturbance to the Site. Daily inspections of stormwater controls will be documented on reports and submitted in a weekly format. Weekly reports may be submitted to NYSDEC compiled as monthly summaries. Events, excursions or significant issues will be reported to NYSDEC as well as the proposed remedy and schedule.

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 EWP 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.

12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during remedial subsurface excavations or development-related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Following the remedial excavation and removal, it is anticipated that impacted material may be left at the Site. This is because there is no manner in which to identify all impacted material without full excavation of the entire volume of the Site. In the event that additional impacted material is encountered, this material

will be segregated and stockpiled for removal to an off-site facility. In the event dewatering is necessary, the groundwater will require evaluation and testing prior to handling and discharge.

In the event, additional impacted material is removed, end-point samples will be collected at the edge of the excavation in order to make a determination of the remaining conditions. 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 a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). In the event a shorter list of analyses are thought to be more appropriate, a specific written request will be made to NYSDEC.

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 for a specific determination for reporting to the Hotline. These findings will be also included in the CCR.

13 COMMUNITY AIR MONITORING PLAN

The purpose of the Community Air Monitoring Plan (CAMP) is to avoid or minimize exposure of the public to potential environmental hazards in the soil during remedial activities. Results of the air monitoring will be used to determine the appropriate response action and will be enforced by the design engineer as needed.

A total of three CAMP stations, each containing a MultiRae and DustTrak will be set up on-site during all excavation and material management activities. Two stations will be set up at downwind locations in the immediate vicinity of the active excavation and in the staging/material loading area. Background concentrations will be established at the third station (an upwind location), away from the work activities.

A MultiRae Meter (photoionization detector (PID) and 4-gas meter) will be used to monitor VOC, oxygen (O^2), hydrogen sulfide (H_2S), and hydrogen cyanide (HCN) concentrations immediately in the working areas at upwind and downwind locations.

Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will 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 will also be recorded.

Monitoring will be conducted in the breathing zone during remedial activities in contaminated areas. In addition to VOC monitoring above, if levels are sustained for one minute in the breathing zone above, 5 ppm for H_2S, and 1 ppm for HCN, the design engineer will stop work until these concentrations have subsided.

The dust monitors will be set up alongside the MultiRae at locations upwind and downwind of excavation activities to verify that dust control methods are adequate. If the downwind PM-10 particulate level is 100 µg/m^3 greater than background for the 15-minute period or if airborne dust is observed leaving the work area, dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 µg/m^3 above the upwind level and provided that no visible dust is migrating from the work area. Should dust control measures fail to reduce total dust concentrations below 150 µg/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 µg/ m^3 of the upwind level and in preventing visible dust migration.

14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include maintaining covered stockpile areas for impacted material that is awaiting off-site disposal. Excavation of MGP material as part of the remedy will be monitored for issues relating more specifically to VOC emissions as they relate to contaminants of concern. The control of nuisance odors during actual active excavation of MGP impacted material are difficult to eliminate without the requirement of a fully enclosed structure with internal engineered atmosphere. No engineered structure was proposed for this effort and is not expected to be necessary. Should emissions become a nuisance within the area of the site, foam and other engineering controls may be necessary upon the conclusion of each work day in order to prevent odors from continuing though the evening after work concludes. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted until the issue can be resolved or if the issue is part of the operation that is ongoing, an evaluation may be performed to minimize the odor in the most effective way feasible. 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 remedial party's

Remediation Engineer, and any measures that are implemented will be discussed in the Final Engineering Report.

All necessary means will be employed to prevent on- and off-site 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 off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods .

15 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 or sprayer capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing will be performed early in the project in order to allow removal of this material as unimpacted.
- Gravel or some other stabilizing material 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.