Former Clinton County Airport
Lot B, C, E, F and G
Plattsburgh, NY 12901

NYSDEC SITE NO. 510026

KAS Project #508215230

SITE CHARACTERIZATION WORK PLAN (STAGE 2)

July 29, 2022; Revised September 19, 2022

Prepared for:

Clinton County Government
137 Margaret Street
Plattsburgh, New York 12901

Cumberland Bay Geology, D.P.C.

kas
environmental science & engineering

13 Latour Avenue, Suite 204
PO Box 2787
Plattsburgh, NY 12901

www.kas-consulting.com

518 563.9445 p
518 563.5189 f

Table of Contents

Appendices

1.0 INTRODUCTION / BACKGROUND / OBJECTIVES

1.1 Introduction

This site characterization work plan (Stage 2) is for a portion of the former Clinton County Airport designated as Lot B, C E, F and G located at 11 Airport Road in Plattsburgh, New York ("Site" or "property"). A Site Location Map is included in Appendix A. KAS, Inc. (KAS), under the supervision of Cumberland Bay Geology, DPC (Cumberland Bay), has prepared this site characterization work plan to investigate surface/subsurface soils and groundwater as part of an Order on Consent between New York State Department of Environmental Conservation (NYSDEC) and Clinton County.

KAS under the supervision of Cumberland Bay completed the investigation (Stage 1) of Lots A, D and J, which was summarized in the Site Characterization Report dated May 27, 2022; Revised June 17, 2022. The NYSDEC accepted the Site Characterization Report of Lot A, D and J in a letter dated June 21, 2022. As stipulated in the Order on Consent this Site Characterization Work Plan (Stage 2) is due within 60 days of approval of the Site Characterization Report for Stage 1.

1.2 Background

The Site is located on a portion of the former Clinton County Airport in the Town of Plattsburgh. The groundwater flow direction beneath the Site is anticipated to be toward the Saranac River, which is located approximately 1,000-feet to the south. The Saranac River, located proximate to the Site (Lower, Main Stem – Segment ID 1003-0049[1]), is a Class C (fishing and non-contact activities) water body pursuant to 6 NYCRR Parts 700-705. The Site can be accessed from an access road that connects to Industrial Boulevard to the north. Currently, the planned redevelopment activities for the Site consist of the installation of a road/underground utilities and a warehouse (light industrial) building. Findings of the investigation will be taken into consideration for other development and any potential limitations that may need to be implemented.

On February 24, 2022, Mr. Michael Zurlo, Clinton County Administrator, received a letter from the NYSDEC about a "Potential Hazardous Waste Disposal Site" associated preliminary environmental work conducted on Lot D as part of a planned development. The letter stated, "If DEC determines that hazardous waste has been disposed of on the property and that the hazardous waste poses a significant threat to public health or the environment, the property will be listed on the Registry of Inactive Hazardous Waste Disposal Sites (Registry)." Subsequently, Clinton County has retained Barton & Loguidice, D.P.C. (B&L) to consult on their behalf and to perform/manage any investigation required by the NYSDEC.

On April 25, 2022, NYSDEC and Clinton County entered into an Order on Consent, which prescribed three (3) stages of investigation for the Site. Stage 1 addressed surface and subsurface soils at Lot A, D and J, which were designated as lots with shovel ready projects. The Site Characterization Report for Stage 1 was completed and approved by NYSDEC on

[1] https://www.dec.ny.gov/data/WQP/PWL/1003-0049.html?req=19981

June 21, 2022. The Site Characterization Report for Stage 1 provided the following conclusions:

1. A total of twenty-eight (28) soil borings were advanced into the water table (saturated soils) to depths ranging from 4 to 12 feet below ground surface (bgs) with groundwater encountered between 2.5 to 6.0 feet bgs. Soil samples were collected for laboratory analysis from each boring (28 total) at the soil/groundwater interface for per- and polyfluoroalkyl substances (PFAS). Additionally, eight (8) surface soil samples were collected from select borings and analyzed for PFAS, full target compound list (TCL), full target analyte list (TAL), and cyanide and eleven (11) of the soil samples collected at the soil/groundwater interface were submitted and analyzed for TCL, TAL and cyanide;
2. Field measurements (photoionization detector (PID) readings of soils for volatile organic compounds (VOCs)) and observations (visual and olfactory) did not identify any obvious signs of subsurface impacts;
3. Low level detections of various PFAS were identified in sixteen (16) of the thirty-seven (37) soil samples (including the duplicate sample). The total PFAS concentrations that were identified ranged from 0.031 nanograms per gram (ng/g) or parts per billion (ppb) to 5.25 ng/g (ppb). Perfluorooctane sulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) results were compared to the June 2021 Sampling, Analysis, and Assessment of PFAS and found to be below Unrestricted soil cleanup guidance values except for a detection of PFOS (1.88 ng/g (ppb)) in the SB-3 (0-2') sample location above the unrestricted use standard. This detection was below residential and commercial standards;
4. Two of the soil samples (SB-8 and SB-24), were analyzed for PFAS by Methods 537.1 and SPLP. The SPLP method determines the leachate potential and is a modified groundwater analysis that can have more sensitive detection limits. When comparing these results, SB-8 had no detections of PFAS using the 537.1 Method, but had a total PFAS concentration of 39.385 ng/L using the SPLP method. The SB-24 sample was also non-detect for PFAS using the 537.1 Method and had a total PFAS concentration of 5.270 ng/L using the SPLP method. When the SPLP concentrations are compared to 10 ppt, the SB-8 soil results exceed this value. Groundwater will be evaluated in the future investigation for the Site; and,
5. The majority TCL, TAL and cyanide samples analyzed were non-detect. The samples with detections had detections below the NYSDEC Soil Cleanup Objectives (SCO) – Unrestricted Use Standards with the exception of two samples (SB-5 and SB-6), which had detections of Acetone that exceed the NYSDEC SCO – Unrestricted Use Standard. However, Acetone is a common laboratory contaminant and in KAS' professional judgment it is likely the laboratory contamination is the cause of the detection of Acetone. The detection also had a qualifier note that it was an estimated value by the laboratory.

Based on the findings, KAS presented the following recommendations:

- No additional site characterization work be completed in association with soils on Lot A, D and J;
- The Soil and Groundwater Management Plan be modified to address the findings of the investigation;
- A copy of the investigation report be provided to the NYSDEC; and,

- If conditions are encountered during planned redevelopment activities on Lot A, D and J that differ from those identified in this report, an environmental professional should be contacted to assess the soils to ensure proper handling.

The Site Characterization work for Stage 2 (Lot B, C, E, F and G) will build off the existing surface and subsurface soil data collected for Lots A, D and J.

1.3 Objectives

The objectives of the Stage 2 site characterization are to assess surface and subsurface soils and groundwater on Lot B, C, E, F and G. This work is the second of three stages of investigation stipulated in the Order on Consent.

The means by which these objectives will be completed include the following:

- Advancement of eighteen (18) soil borings on Lot B, C, E, F and G that are spaced out over an approximate 500-foot grid;
- Observance of soils for evidence of visual or olfactory impacts;
- Screening of soils for the presence of VOCs using a properly calibrated PID;
- Collection of soil samples from select borings for analysis of PFAS with additional targeted analysis of the TCL, TAL, and cyanide;
- Completion of six (6) soil borings as one (1) inch monitoring wells from proposed borings on Lot B, C, E, F and G and two additional one (1) inch monitoring wells on Lot D;
- Surveying, development, purging and sampling of the monitoring wells for analysis of PFAS and TCL;
- Collection of quality assurance/quality control (QA/QC) samples to ensure the quality of the analytical results; and,
- Preparation of a summary report with a comparison of soil sample results to NYSDEC guidance levels and regulatory standards.

Specifics on the scope of work to be conducted are included in Section 2.0.

2.0 SITE CHARACTERIZATION

2.1 Pre-Sampling Activities

Prior to the initiation of subsurface activities at the Site, KAS will prepare a health and safety plan (HASP) and a Community Air Monitoring Plan (CAMP) in accordance with OSHA and the New York State Department of Health, respectively. The HASP will be present and enforced on Site with field personnel during the course of the work. Dig Safely New York will be contacted a minimum of 72 hours prior to commencement of work to mark out underground utilities. It is proposed that the CAMP will include dust meters installed in the upwind/downwind direction of the work area with the PID monitoring performed at the drilling rig, screening soils for VOC impacts. Based on past use of the site, it is not anticipated that VOC impacts are present. The New York State Department of Health Generic Community Air Monitoring Plan is included in Appendix D.

2.2 Surface/Subsurface Soil Sampling and Decontamination

KAS will advance eighteen (18) soil borings to a maximum depth of 15 feet bgs or intersection with the groundwater table, whichever occurs first. Based on previous investigation activities, groundwater is anticipated to be relatively shallow and borings will be advanced a minimum of two (2) feet into the water table. The locations of the borings will be spaced out in a grid pattern on Lots B, C, E, F and G approximately 500-feet apart (see Appendix A – Boring/Monitoring Well Location Map; provided by B&L). A total of six (6) of the soil borings will be completed as monitoring wells as depicted on the Boring Location Map and further discussed in Section 2.3. Two additional well locations will be installed along the southern and eastern portion of Lot D. The soil borings will be advanced using a track-mounted Geoprobe® rig with steel tooling and high-density polyethylene (HDPE) sleeves to prevent cross-contamination (commonly used low density polyethylene sleeves can contain PFAS). The steel tooling will be decontaminated between borings using Alconox and distilled water. Soil in the borings will be visually observed for any obvious signs of impacts and screened for the presence of VOCs using a properly calibrated PID. Borings will be logged in the field by a KAS scientist and boring logs will be generated with soil type, observations and PID readings included in the summary report. If soils are encountered that exhibit a PID reading above background levels or visual/olfactory evidence of impacts, a soil sample will be collected from that discrete interval for laboratory analysis of TCL, TAL, cyanide and PFAS. If evidence of impacts are identified in the field and/or by analytical results, additional borings/characterization may be required and will be coordinate with NYSDEC.

Soil cuttings will be placed back in the boring in which they were collected with the exception of the borings completed as monitoring wells. Soil cuttings from borings with monitoring wells installed will be thin spread proximate to the boring location. If impacts (i.e., PID readings above background levels or visual/olfactory evidence), the soil cuttings from that boring will be placed in 55-gallon drums and properly disposed pending laboratory analysis. The sampler will use nitrile gloves and avoid clothing and other equipment (ex. Write-In-Rain Field Books) that can cause cross-contamination in accordance with NYSDEC and KAS protocols.

A soil sample will be collected for laboratory analysis from each boring at the soil/groundwater interface for PFAS as PFAS can accumulate within the vadose zone while migrating to groundwater and may form a fluid-fluid interface on the groundwater (Guo et al., 2020)[2]. Additional surface soil samples will be collected from five (5) borings for PFAS, TCL, TAL, and cyanide, which will include one (1) from each lot being investigated. Also, a minimum of five (5) of the soil samples from the soil/groundwater interface will be submitted for analysis of TCL, TAL and cyanide. The sampling analysis at each location has been identified in the Summary Table in Appendix C. As mentioned above, additional soil samples will be collected for the full suite of analyses (TCL, TAL, cyanide and PFAS) from locations in which PID readings are encountered above background levels or visual/olfactory evidence of impacts. Soil samples will be transferred from the HDPE sleeves to laboratory-provided containers. Once collected, samples will be placed on ice and shipped with a properly completed chain of custody to a NYS-accredited laboratory for analysis. A summary table which includes sample location/designation, sample depth, analytical parameters, QA/QC, and rationale is included in Appendix C.

[2] https://doi.org/10.1029/2019WR026667

2.3 Monitoring Well Installation, Development, Purging and Sampling

A total of eight (8) soil borings will be completed as monitoring wells. The monitoring well locations are depicted in the Boring/Monitoring Well Location Map in Appendix A. Monitoring well construction will include a slotted PVC pipe extended from the bottom of the boring to a minimum of two (2) feet above the identified groundwater table. Above the slotted PVC pipe will be a solid PVC pipe to surface. A silica sand pack will be installed around the slotted PVC and extended to two (2) feet below surface. A bentonite/grout plug will be installed and wells will be either surface or stickup completed depending on the surface/location. The top of the monitoring wells (PVC pipe) will be surveyed to allow for determination of groundwater flow.

Once installed, the monitoring wells will be developed with the purging of ten (10) well volumes or until the well is purged dry. The wells will then be allowed to recover for a minimum of three (3) to five (5) days prior to purging and sampling. Once recovered and prior to purging/sampling, the locations and elevations of monitoring wells will be established by a New York-licensed surveyor. The monitoring well survey will include location coordinates, ground surface elevation, and top of PVC riser reference elevation data accurate to 0.01 feet. The depth to groundwater will be measured in each monitoring well using an interface probe and recorded on field data sheets. Purging will consist of removing a minimum of three (3) well volumes or until dry. Purging and sampling will be performed using low flow sampling equipment (i.e., peristaltic pump, PFAS free tubing, etc.) to minimize sediment load in the samples and provide accurate groundwater data. Additionally, once purged and prior to sampling, groundwater quality parameters will be collected for temperature, pH, conductivity, dissolved oxygen and turbidity. Samples will be collected in laboratory-provided containers and placed on ice. Samples will be collected for PFAS, TCL, TAL and cyanide for each monitoring well. Investigation derived purge water generated during development and purging will be containerized and properly disposed pending laboratory analysis.

2.4 Quality Assurance/Quality Control

A random field duplicate and matrix spike/matrix spike duplicate (MS/MSD) soil sample will be collected for QA/QC and will be collected from the same soil horizon as the parent sample. The field duplicate will be given a discrete sample identification to verify the accuracy of the laboratory analysis and will include the full suite of analytes (TCL, TAL, cyanide and PFAS). In addition, one (1) equipment blank sample, from properly decontaminated equipment tooling, will be collected for PFAS and submitted to determine if there is any cross contamination. The reason for the equipment blank is due to the extremely low detection limits. The equipment blank sample will be analyzed by EPA Method 537.1. In order to collect the tooling sample, lab provided PFAS-free water will be poured over the tooling and collected in laboratory provided container for analysis. If PFAS are identified in the equipment blank, the data can be used to correlate to detections in the soil samples.

Additionally, a field duplicate groundwater sample will be collected during sampling of monitoring wells. The field duplicate will be given a discrete sample identification and submitted with the groundwater sample for analysis of the full suite analyses (PFAS, TCL, TAL and cyanide).

2.5 Surface/Subsurface Soil and Groundwater Sample Laboratory Analysis

2.5.1 Surface/Subsurface Soil

One (1) soil sample from each boring (total of eighteen (18) soil samples) will be collected at the soil/groundwater interface and an additional five (5) soil samples will be collected from surface soil (0 to 2 feet bgs) to be analyzed for PFAS by EPA Method 537.1. Additionally, a total of ten (10) soil samples (five (5) from the surface and five (5) from the soil/groundwater interface) will be analyzed for TCL, TAL, and cyanide. Additional QA/QC samples will be collected in accordance with Section 2.4. The minimum detection limits for EPA Method 537.1 analytes can be found in Appendix B.

As discussed in Section 2.2, to be responsive to conditions that may be encountered on-site, if any of the soil boring locations exhibit PID readings above background levels or evidence of visual/olfactory impacts are encountered, KAS will collect soil samples for analysis of the full suite of TCL, TAL, cyanide and PFAS.

All samples upon collection will be preserved on ice and will be submitted under chain of custody to an ELAP-certified laboratory for analysis in accordance with New York State requirements. The results of the analysis will be compared to the *Sampling, Analysis, and Assessment of PFAS Under NYSDEC's Part 375 Remedial Programs* or most up to date NYSDEC Guidance Values for Protection of Groundwater and applicable regulatory standards. Using the minimum method (Part 537.1), reporting limits should be less than or equal to: solids - 0.5 ppb.

2.5.2 Groundwater

One (1) groundwater sample will be collected from each of the eight (8) monitoring wells. Groundwater samples will be analyzed for PFAS, TCL, TAL, and cyanide. An additional QA/QC sample will be collected in accordance with Section 2.4. The minimum detection limits for EPA Method 537.1 analytes can be found in Appendix B.

All samples upon collection will be preserved on ice and will be submitted under chain of custody to an ELAP-certified laboratory for analysis in accordance with New York State requirements. The results of the analysis will be compared to the *Sampling, Analysis, and Assessment of PFAS Under NYSDEC's Part 375 Remedial Programs* Guidance Values for Protection of Groundwater and applicable regulatory standards.

3.0 REPORTING

KAS will prepare the Stage 2 Site Characterization Summary Report upon receipt of laboratory results. The summary report will include the following:

- Methodology of work completed;
- Documentation of field activities (boring and well construction logs);
- Laboratory results with a comparison to NYSDEC guidance levels and regulatory standards;
- QA/QC data; and,

- Conclusions/Recommendations.

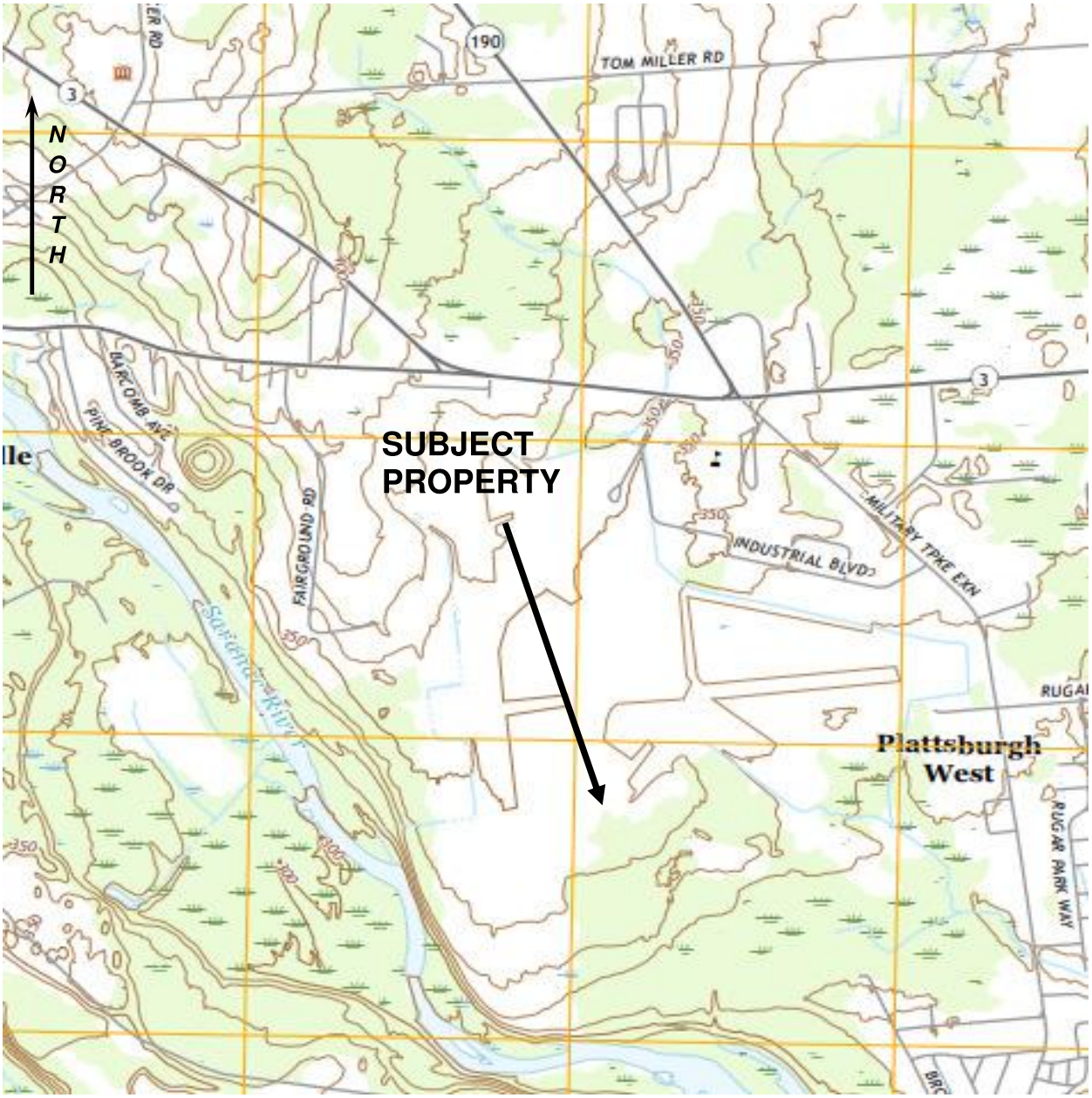
The appendices of the report will include site maps, distribution maps (as applicable), a groundwater contour map, boring logs, and summarized data.

4.0 SCHEDULE

Upon approval of this work plan, the site characterization will be scheduled within 60 days. NYSDEC will be made aware of the field work schedule prior to commencement. It is anticipated that the site characterization field work will take approximately 3 days. Upon completion of the field work, KAS will ship samples to the laboratory. A laboratory turnaround time of approximately 2 weeks is anticipated. The summary report will be completed in approximately 30 days of receipt of laboratory results.

APPENDIX A

1) Site Location Map
2) Boring/Monitoring Well Location Map

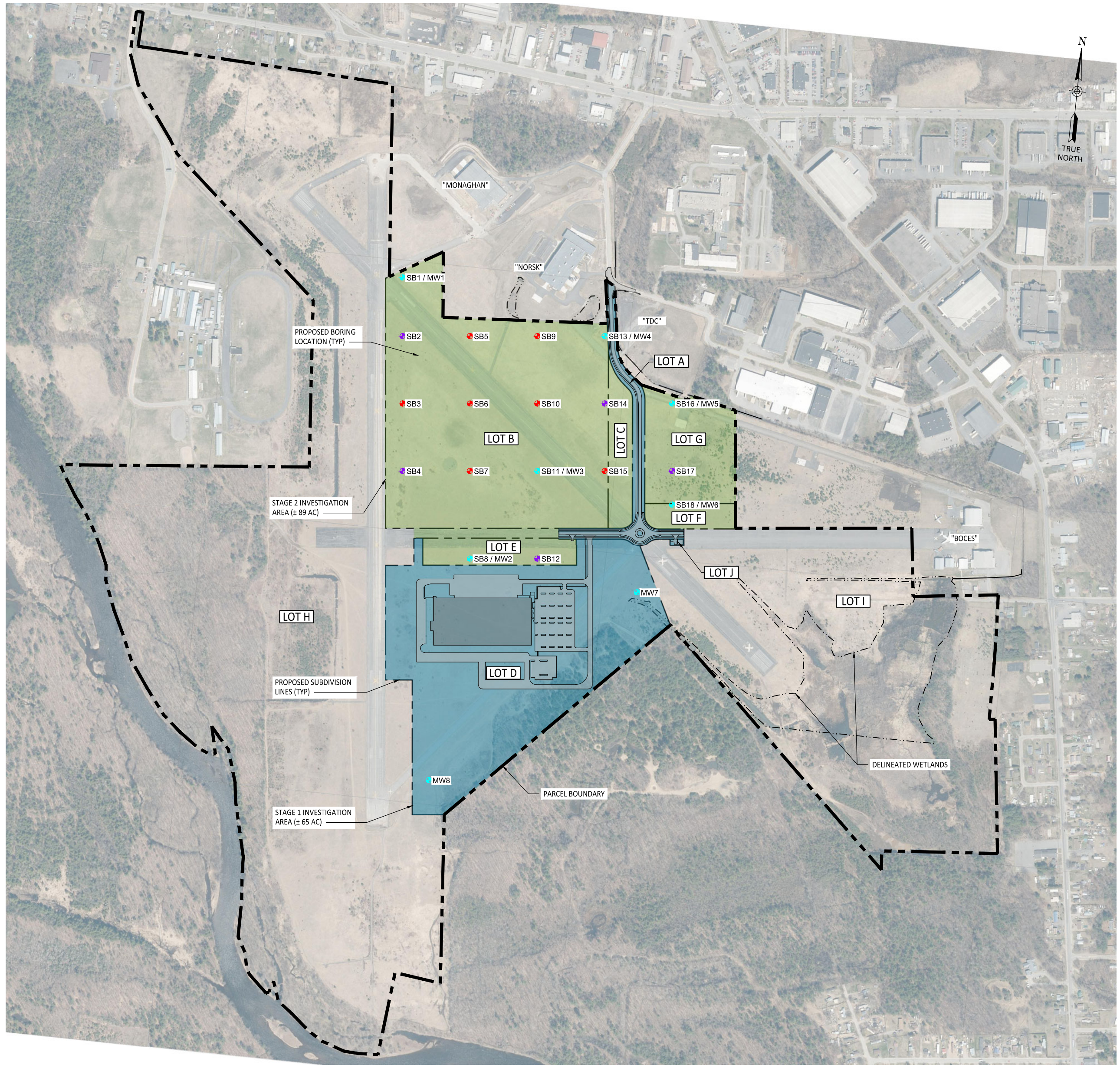


KAS Job Number *508212230*
Source: *USGS Store*

Industrial Boulevard
Plattsburgh, New York

2019 USGS Topographic Map

Date: 09/20/21	Drawing No. 0	Scale: NTS	By: AH



LEGEND

- PARCEL BOUNDARY
- PROPOSED SUBDIVISION LINES
- PROPOSED SOIL BORING LOCATION (PFAS SAMPLING AT SOIL/GROUNDWATER INTERFACE ONLY)
- PROPOSED SOIL BORING LOCATION (PFAS, TCL, TAL, CYANIDE SAMPLING SURFACE SOIL AND SOIL/GROUNDWATER INTERFACE)
- PROPOSED MONITORING WELL LOCATION
- STAGE 1 INVESTIGATION AREA (± 65 AC)
- STAGE 2 INVESTIGATION AREA (± 89 AC)

PROPOSED STAGE 2 BORING LOCATION PLAN

SCALE: 1" = 400'

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW, ARTICLE 145 §7209 SPECIAL PROVISIONS, FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING PROFESSIONAL SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS

CLINTON COUNTY
FORMER CLINTON COUNTY AIRPORT REDEVELOPMENT PROJECT

BORING LOCATION PLAN
STAGE 2

TOWN OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

B&L
Barton & Loguidice, D.P.C.
10 Airline Drive
Suite 200
Albany, NY
12205

REVIEW ONLY
NOT FOR
CONSTRUCTION

Date: AUGUST 2022
Scale: AS SHOWN
Sheet Number: BLP2
Project Number: 244.128.001

Checked by | Drawn by RBW | Designed by BDD | In charge of DHF

Plotted: Aug 03, 2022 – 10:45AM SYR By: rbw
Z:\BL-Vault\D2\18217AD2-1C71-4823-8927-990C405417\0\2558000-2558999\2558551\L\L\Boring Location Plan (ID 2558551).dwg

APPENDIX B

Laboratory Analysis Criteria

Date Created: 01/06/21
Created By: Alycia Mogayzel
File: PM9674-1
Page: 1

PFAAs via LCMSMS-Isotope Dilution (SOIL)

Holding Time: 14 days
Container/Sample Preservation: 1 - Plastic 8oz unpreserved

Analyte	CAS #	RL	MDL	Units	LCS Criteria	LCS RPD	MS Criteria	MS RPD	Duplicate RPD	Surrogate Criteria		
Perfluorobutanoic Acid (PFBA)	375-22-4	0.5	0.0227	ng/g	71-135	30	71-135	30	30			
Perfluoropentanoic Acid (PFPeA)	2706-90-3	0.5	0.046	ng/g	69-132	30	69-132	30	30			
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	0.25	0.039	ng/g	72-128	30	72-128	30	30			
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	1	0.0645	ng/g	62-145	30	62-145	30	30			
Perfluorohexanoic Acid (PFHxA)	307-24-4	0.5	0.0525	ng/g	70-132	30	70-132	30	30			
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	1	0.0835	ng/g	73-123	30	73-123	30	30			
Perfluoroheptanoic Acid (PFHpA)	375-85-9	0.25	0.0451	ng/g	71-131	30	71-131	30	30			
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	0.25	0.0605	ng/g	67-130	30	67-130	30	30			
Perfluorooctanoic Acid (PFOA)	335-67-1	0.25	0.0419	ng/g	69-133	30	69-133	30	30			
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	0.5	0.1795	ng/g	64-140	30	64-140	30	30			
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8	0.5	0.1365	ng/g	70-132	30	70-132	30	30			
Perfluorononanoic Acid (PFNA)	375-95-1	0.25	0.075	ng/g	72-129	30	72-129	30	30			
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	0.25	0.13	ng/g	68-136	30	68-136	30	30			
Perfluorodecanoic Acid (PFDA)	335-76-2	0.25	0.067	ng/g	69-133	30	69-133	30	30			
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	0.5	0.287	ng/g	65-137	30	65-137	30	30			
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	1	0.299	ng/g	69-125	30	69-125	30	30			
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSA	2355-31-9	0.5	0.2015	ng/g	63-144	30	63-144	30	30			
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	0.5	0.0468	ng/g	64-136	30	64-136	30	30			
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	0.5	0.153	ng/g	59-134	30	59-134	30	30			
Perfluorooctanesulfonamide (FOSA)	754-91-6	0.5	0.098	ng/g	67-137	30	67-137	30	30			
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	0.5	0.0845	ng/g	61-139	30	61-139	30	30			
Perfluorododecanoic Acid (PFDoA)	307-55-1	0.5	0.07	ng/g	69-135	30	69-135	30	30			
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	0.5	0.2045	ng/g	66-139	30	66-139	30	30			
Perfluorotetradecanoic Acid (PFTA)	376-06-7	0.5	0.054	ng/g	69-133	30	69-133	30	30			
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-P	13252-13-6	10	3.81	ng/g	41-165	30	41-165	30	30			
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	919005-14-4	1	0.0413	ng/g	68-143	30	68-143	30	30			
Perfluorohexadecanoic Acid (PFHxDA)	67905-19-5	2	0.12	ng/g	18-191	30	18-191	30	30			
Perfluorooctadecanoic Acid (PFODA)	16517-11-6	2	0.171	ng/g	10-123	30	10-123	30	30			
Perfluorododecane Sulfonic Acid (PFDoDS)	79780-39-5	1	0.086	ng/g	82-160	30	82-160	30	30			
1H,1H,2H,2H-Perfluorododecanesulfonic Acid (10:2FTS)	120226-60-0	1	0.275	ng/g	37-261	30	37-261	30	30			
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF	756426-58-1	1	0.0374	ng/g	69-139	30	67-139	30	30			
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11C	763051-92-9	1	0.0388	ng/g	51-155	30	51-155	30	30			
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	31506-32-8	1	0.379	ng/g	62-149	30	62-149	30	30			
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	4151-50-2	1	0.407	ng/g	71-156	30	71-156	30	30			
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	24448-09-7	2	0.52	ng/g	10-239	30	10-239	30	30			
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	1691-99-2	2	0.73	ng/g	10-275	30	10-275	30	30			
Perfluoropropane Sulfonic Acid (PFPrS)	423-41-6	1	0.2005	ng/g	50-150	30	50-150	30	30			
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	377-73-1	1	0.15	ng/g	50-150	30	50-150	30	30			
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	863090-89-5	1	0.168	ng/g	50-150	30	50-150	30	30			
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	113507-82-7	1	0.2235	ng/g	50-150	30	50-150	30	30			
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	151772-58-6	1	0.1515	ng/g	50-150	30	50-150	30	30			
Perfluoro[13C4]Butanoic Acid (MPFBA)	*NONE*									*61-135*		

Please Note that the RL information provided in this table is calculated using a 100% Solids factor (Soil/Solids only)
Please Note that the information provided in this table is subject to change at anytime at the discretion of Alpha Analytical, In

APPENDIX C

Summary Table

Sampling Summary Table
Former Clinton County Airport - Lots B, C, E, F and G
Plattsburgh, NY 12901

Designation	Location	Sample Depth	Matrix	Analytical Parameters	QA/QC	Sampling Rationale
SB-1	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
MW-1	Lot B	Groundwater	GW	PFAS, TCL, TAL, Cyanide	DUPE	To determine if impacts exist in the groundwater
SB-2	Lot B	0-2'	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-2	Lot B	Soil/GW Interface	Soil	PFAS, TCL, TAL, Cyanide	DUPE	To determine if impacts exist in the subsurface
SB-3	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-4	Lot B	0-2'	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-4	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-5	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-6	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-7	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-8	Lot E	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
MW-2	Lot E	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
SB-9	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-10	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-11	Lot B	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
MW-3	Lot B	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
SB-12	Lot E	0-2'	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-12	Lot E	Soil/GW Interface	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-13	Lot C	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
MW-4	Lot C	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
SB-14	Lot C	0-2'	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-14	Lot C	Soil/GW Interface	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-15	Lot C	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
SB-16	Lot G	Soil/GW Interface	Soil	PFAS	NONE	To determine if impacts exist in the subsurface
MW-5	Lot G	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
SB-17	Lot G	0-2'	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-17	Lot G	Soil/GW Interface	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
SB-18	Lot F	Soil/GW Interface	Soil	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the subsurface
MW-6	Lot F	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
MW-7	Lot D	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
MW-8	Lot D	Groundwater	GW	PFAS, TCL, TAL, Cyanide	NONE	To determine if impacts exist in the groundwater
Equipment Blank	NA	NA	Water	PFAS	Eq. Blank	To determine if equipment cross contamination has occurred

APPENDIX D

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 (mcg/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 mcg/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 mcg/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 mcg/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_{10}) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 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/m3, 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^{o} C (14 to 122^{o} 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/m3 (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/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 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/m3 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_{10} 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/m3 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.