FINAL
Work Plan
Universal Waste Inc.
Site No. 633009
Utica, Oneida County, New York

February 2013

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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1 Introduction

Ecology and Environment Engineering, P.C. (EEEPC) has prepared this Field Sampling Plan (FSP) under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment Number D007617-18) for an off-site remedial investigation (RI) at the Universal Waste Inc. Site (UWI Site) in the City of Utica, Oneida County, New York (see Figure 1).

This RI is an off-site investigation designed to assess off-site migration of contaminants from the UWI site. The UWI site is an inactive scrap yard that salvaged ferrous and stainless steel beginning in 1957. The site was owned by clearview Acres Ltd, Inc. and operated by Universal Waste Inc. (currently known as ELG Utica Alloys, Inc.). Universal Waste, Inc. handled electrical components including capacitors and transformers that contained PCBs. The site consists of approximately 22-acres that occupy tax parcels 319.005-1-32, 319.005-1-36, 319-005-1-37 and 319.009-1-73. It is partially fenced and is occupied by several vacant buildings. The Utica Alloys Inc. site (NYS Registry Number 633047) a "Class 2" site contaminated primarily by solvents, is owned and operated by the same entity as the UWI site, is located on one of the UWI site parcels and was formerly part of the UWI site. The UWI site is generally flat. A storm sewer transects the site, flowing west to east and draining into a stream on vacant land east of the site. An abandoned sanitary sewer line reportedly ran parallel to the storm sewer. The site is bordered to the north by a narrow strip of wooded land and the Mohawk River. A former petroleum bulk storage facility lies in a northwesterly direction from the site. South of the site is partially wooded vacant land with a rail yard further south. Vacant wooded land lies to the east of the site. A former C&D recycling facility historically occupied the property immediately east of the site, while the land further east is undeveloped, largely wooded and swampy. Wetlands and stream channels that discharge into the Mohawk River are found on this land. The Mohawk River is located further east. This investigation will focus primarily on the land to the north, south and east of the UWI site, as well as the Mohawk River.

Unconsolidated deposits in the vicinity of the site consist of silt, sand, and gravel. The UWI site is underlain primarily by fill material. Depth to bedrock is not known. Groundwater is reported to be less than 10 feet below ground surface, and groundwater is to flow east-southeast toward the river.

Recycling and recovery operations conducted at the UWI site resulted in release of large quantities of PCBs. PCBs and other contaminants were detected in soil and groundwater during preliminary investigations. One PCB-contaminated area is located near the sewer outfall channel that lies east of the site and has been identified as a PCB 'hot spot' affecting the Mohawk River. A New York State fish consumption advisory is in effect for a stretch of the river lying both up-stream and downstream of the site. The backwater area of the river is also contaminated with PCBs.

Contaminants (particularly PCBs) associated with past operations at the UWI site have migrated onto the off-site study area. Current and former possible migration routes include movement through a storm sewer (and its bedding) that discharges onto the study area through groundwater and overland flow. The purpose of this investigation is to evaluate the vertical and lateral extent of potential soil, sediment, surface water and groundwater contamination on the off-site property potentially derived from the UWI site. Additionally, field efforts will identify the drainage pathways on the subject property to evaluate potential contaminant transport to the main stem of the Mohawk River.

This FSP describes field investigation procedures to be conducted at the site. Worker health and safety information can be found in the attached Site-specific Health and Safety Plan (Appendix A). EEEPC has a master Quality Assurance Program Plan (QAPP) that was approved by NYSDEC for site investigation projects under this contract. Quality assurance (QA) and quality control (QC) issues related to the sampling activities are described in this NYSDEC master QAPP (EEEPC 2011). A site specific QAPP, addressing site specific changes from the master QAPP, is included in Appendix B.

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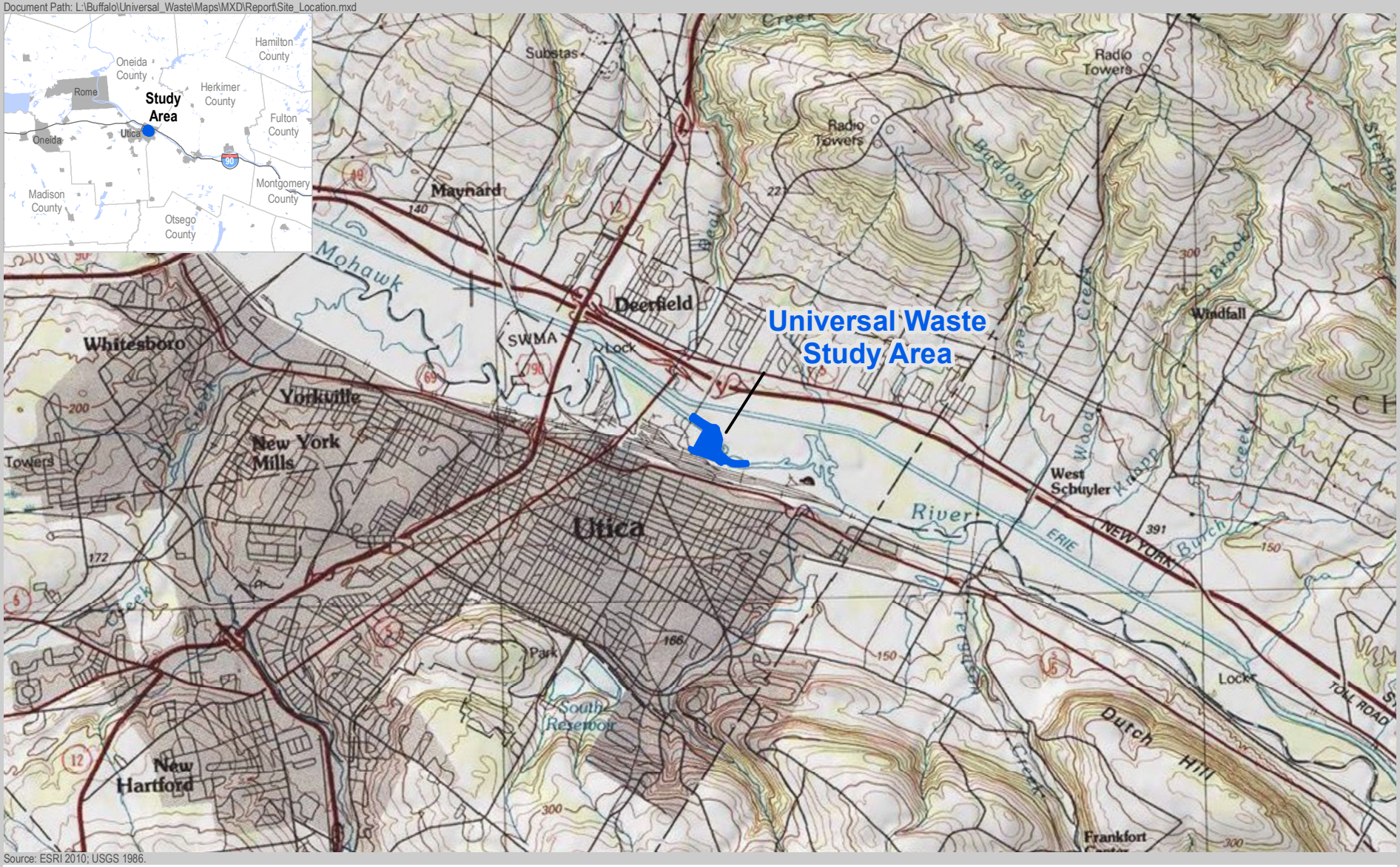

Source: ESRI 2010; USGS 1986.

Figure 1
Site Location Map
Universal Waste Inc.
Utica, NY

N

0 0.5 1 2
Miles

2 Project Plans and Schedule

2.1 Citizen Participation Plan

As required by NYSDEC DER 10 (NYSDEC, 2010), a Citizen Participation Plan (CCP) will be prepared. The purpose of this plan is to facilitate the remedial process and enable citizens to participate in decisions that affect their health, environment, and social well being, opportunities for citizen involvement should be provided and early two-way communication with citizens should be encouraged before decision makers form or adopt final positions.

Towards this end, EEEPC has prepared a citizens participation plan, which includes names and addresses of nearby property owners and tax lot map. EEEPC will also set up a repository for project documents at the Reference Desk of the Utica Public Library, where citizens may review project plans and final reports. The Utica Public Library is located at 303 Genesee Street, Utica, NY 13501. A copy of this plan is included in Appendix C.

2.2 Community Air Monitoring Plan (CAMP)

As required by NYSDEC DER 10 (NYSDEC, 2010), a Community Air Monitoring Plan (CAMP) has been prepared. The purpose of the CAMP is to monitor for volatile organic compound (VOC) and particulates at the downwind perimeter of the work area. Continuous monitoring will be conducted during ground-intrusive investigative activities (i.e., soil boring installation). Periodic monitoring will be conducted during non-intrusive activities (i.e., collection of soil and sediment samples and groundwater samples following well installation). The full CAMP is provided in Appendix D.

2.3 Reporting

Following completion of the initial field activities, EEEPC will prepare a Phase I RI Report, which will document findings from the field investigation including: surface soil sampling, subsurface soil sampling and groundwater monitoring well installation, upland sediment sampling, groundwater and surface water sampling. Once subsequent river sediment sampling has been completed, those findings will be added to the RI report and issued as a Phase I and II Final RI report. The RI report format will be in general accordance with DER10 and will include the following major sections.

1 Introduction
2 Remedial Investigation Activities
3 Physical Characteristics of the Study Area
4 Quality Assurance/Quality Control (QA/QC) Procedures
5 Nature and Extent of Contamination
6 Fate and Transport
7 Human Health Risk Evaluation
8 Fish and Wildlife Resources Impact Analysis
9 Summary and Conclusions
10 References

EEEPC will also prepare a Feasibility Study (FS) to assess potential site remedies. The FS will include the following major sections.

1 Introduction;
2 Site description and history;
3 Summary of RI and exposure assessment;
4 Remedial goals and remedial action objectives;
5 General response actions;
6 Identification and screening of technologies;
7 Development and analysis of alternatives, which
   (a) assembles technologies into alternatives;
   (b) evaluates alternatives with respect to the criteria in section 4.2; and
   (c) evaluates the institutional/engineering controls for the selected remedy
8 Recommended remedy
9 References

2.4 Schedule

The following Table 2-1 outlines the tentative schedule for completing this RI/FS. Schedule deviations may result from subcontractor availability, weather delays or changes in scope of work.

Table 2-1 Tentative Schedule

Activity	Date
Task 1 – Preliminary Activities	
NYSDEC issues work assignment	December 6, 2012
Preparation of SOW and budget estimation	(Submittal by January 16, 2013)
Review of existing data, selection of sampling locations, development of draft Work Plan and QAPP	Dec 2012 – Jan 2013 (Submittal by Jan 30, 2013)
NYSDEC review of draft Work Plan	Jan 31, 2013- Feb 8, 2013
Prepare final Work Plan and QAPP (approximately 2 weeks from receipt of comments)	Feb 2012 (Submittal by Feb 22, 2012)

Table 2-1 Tentative Schedule

Activity	Date
Task 2 – Phase I RI Field Activities	
Conduct Property Line Survey and Topographic Survey, Mob	Week of February 25, 2013
Wetland Delineation and Habitat Survey (1 week)	March 4 – March 8, 2013
Soil boring and monitoring well installation (3 weeks)	March 4 – March 22, 2013
Surface soil and upland surface water sampling	March 4 – March 8, 2013
Upland Sediment sampling (1 week)	March 11 – March 15, 2013
Well development (1 week)	March 25 – March 29, 2013
Groundwater sampling	April 1 – April 5, 2013
Laboratory analytical	March – April 2013
Investigation-derived waste disposal	June 2013
Task 3 – Phase I RI Report	
Analytical data validation	April – May 2013
Evaluate data and prepare draft report	April – June 2013 (Submittal by June 21, 2013)
NYSDEC review of draft report	Jun - July 2013
Prepare final report (approximately 4 weeks from receipt of comments)	Jul 2013 (Submittal by Jul 31, 2013)
Task 4 – Phase II RI Field Activities	
Conduct sediment and surface water sampling in Mohawk River (3 weeks)	May 13 – May 31, 2013
Task 5 – Phase I and II RI Report	
Analytical data validation	June – July 2013
Address comments from Phase I draft report, incorporate new data	August 2013 (Submittal by August 31, 2013)
NYSDEC review of draft Phase I and II report	September 2013
Prepare final report (approximately 4 weeks from receipt of comments)	October 2013 (Submittal by Oct 25, 2013)
Task 6 – Feasibility Study	
Prepare Feasibility Study and submit draft report	Sept – Nov 2013 (Submit by Nov 15, 2013)
NYSDEC review of draft report	Nov 15 – Nov 29 2013
Prepare final report (approximately 4 weeks from receipt of comments)	Submit by Dec 31, 2013

3 Field Sampling Plan

This section provides a summary of the field sampling activities and methodologies that will be performed during this RI field effort. The work will include: soil boring installation; monitoring well installation; surface and subsurface soil and sediment sampling; surface water sampling; groundwater sampling; groundwater elevation measurements; property boundary survey; topographic survey; wetland delineation; and ancillary tasks. EEEPC's field team will generally consist of two members, in the roles of field team leader/geologist and sampling technician/site safety officer. Additional team members may assist with tasks where safety or productivity requires added support. Prior to initiating intrusive subsurface activities, EEEPC will coordinate with the Underground Facilities Protection Organization to identify and locate underground utilities. In addition to the procedures described in this section, all field activities will be conducted in general accordance with EEEPC's Standard Operating Procedures (SOPs). Copies of EEEPC's SOP will be made available upon request.

3.1 Site Survey

Prior to the commencement of onsite activities, a site survey will be completed by a licensed land surveyor. This will include, but not be limited to: a property boundary survey; a 2-foot contour topographic survey to delineate onsite waterways, wetlands and ponds; survey of soil borings and monitoring wells; survey of transects across Mohawk River and upland drainage areas; and survey of staff gauge(s) or measuring point to collect river elevations. The property boundary survey will be completed prior to initiation of soil boring installation. Surface water, surface soil, and upland sediment sample locations will be surveyed after completion of sampling by EEEPC using Global Positioning System with submeter accuracy.

In addition to the site survey described above, EEEPC will conduct a site reconnaissance to identity ecological communities, wetlands, and fish and wildlife resources on and near the site. Principal plant species, wildlife, and signs of wildlife will be noted. Ecological communities present on site will be identified based on Edinger et al. (2002). Also, the New York State Natural Heritage Program (NYNHP) and National Wetlands Inventory (NWI) will be contacted for information on state and federally designated wetlands on and near the site. Lastly, the United States Fish and Wildlife Service (USFWS) and NYNHP will be contacted for information on threatened and endangered species and other species of con-

cern in the site vicinity. The information gathered during the site reconnaissance and from the above mentioned agencies will be incorporated into Step 1 (Site Description) of the Fish and Wildlife Impact Assessment (FWIA) for the site.

3.2 Soil Borings

A total of 25 soil borings will initially be installed at the subject property, nine of which will be converted into groundwater monitoring wells (see Figure 2). Additional soil borings and wells may be placed depending on the results of the initial sampling effort. All soil borings will be completed using a track-mounted or off-road direct-push technology (DPT) type rig using Macro-Core samplers. A continuous core sample will be collected from grade to a depth of approximately 20 feet. The Macro-Core system (or equivalent) will be used to collect discrete, continuous cores of soil in dedicated acetate liners. Upon retrieval, each liner will be cut longitudinally and EEEPC will record all pertinent lithologic information (including soils descriptions and apparent depth to groundwater) and screen the headspace of the soil for organic vapors using a photoionization detector (PID).

A total of three (3) subsurface soil samples will be collected from each soil boring. Samples will consist of a composite sample collected from discrete 4-foot intervals (e.g. 0-4', 4-8', etc.) in the absence of observed zones of contamination (visual, PID, etc.). If field observations indicate the potential for contamination, that specific zone will be sampled. In the absence of observed contamination, samples collected from the following intervals will be submitted to the laboratory for PCB analysis using EPA method modified 8082: 0-4', 4-8', and the interval at the soil water interface. Samples will also be collected from the remaining intervals and submitted to the laboratory on a "hold" basis should additional analysis be required. Following receipt of the modified 8082 results, one sample from each boring will be selected for full 8082 analysis. In addition to PCB analysis, 15 select samples will also be submitted to the laboratory for Volatile and Semivolatile Organic Compounds (VOCs, and SVOCs) and Target Analyte List Inorganics using EPA methods 8260B, 8270C, 6010B and 7471A. Sample quantity, holding times, analytical methods and associated preservatives are presented in Table 3-1.

3.3 Monitoring Wells

3.3.1 Monitoring Well Construction

Nine of the initial soil borings will be converted to 2-inch ID monitoring wells with a total depth of approximately 20 feet bgs. Soil borings converted to monitoring wells will be reamed out after direct push sampling using hollow stem auger drilling techniques. Wells will be constructed of polyvinyl chloride (PVC) screen 10 feet in length having a 0.010-inch slot size. Wells will be built with Schedule 40 PVC riser installed to a height of approximately 3 feet above grade. A threaded PVC cap will be placed on the bottom of each screen. All PVC connections will be flush-joint threaded. Sand filter pack will extend from 1 foot below the bottom

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Approximate Project Work Area Boundary

Proposed Soil Boring Location

Proposed Soil Boring Location to be Converted to Monitoring Well

Parcel Boundary

Note- Boring locations will be adjusted in the field based on actual conditions.

Figure 2
Proposed Soil Boring and Monitoring Well Locations
Universal Waste Inc.
Utica, NY

N

0 100 200 400

Feet

Table 3-1 Summary of Analytical Methods, Preservatives, Containers, and Holding Times Universal Waste, Inc. Site

Parameter	Method	Number of Samples	QC Samples[a]	Containers/Preservative[b] per Sample	Holding Time
Surface Soil					
Volatile Organic Compounds + TICs	8260B	12	1	Two pre-weighed 40-mL with deionized water and one pre-weighed 40-mL vial with stir bar and methanol and one 4-oz. glass vial with septum(if no other containers are shipped)	48 hours for analysis or freezing to <7˚C and 12 days for analysis following freezing
Semivolatile Organic Compounds + TICs	8270C	12	1	One 8-oz. glass jar	12 days/40 days[c]
Polychlorinated Biphenyls Screen	8082 Mod	25	2	One 4-oz. glass jar	12 days/40 days[c]
Polychlorinated Biphenyls	8082	10	1	One 4-oz. glass jar	12 days/40 days[c]
Target Analyte List Inorganics	6010B, 7471A	12	1	One 8-oz. glass jar	26 days for mercury, 180 days for metals
Soil Borings					
Volatile Organic Compounds + TICs	8260B	15	1	Two pre-weighed 40-mL with deionized water and one pre-weighed 40-mL vial with stir bar and methanol and one 4-oz. glass vial with septum(if no other containers are shipped)	48 hours for analysis or freezing to <7˚C and 12 days for analysis following freezing
Semivolatile Organic Compounds + TICs	8270C	15	1	One 8-oz. glass jar	12 days/40 days[c]
Polychlorinated Biphenyls Screen	8082 Mod	75	4	One 4-oz. glass jar	12 days/40 days[c]
Polychlorinated Biphenyls	8082	25	2	One 4-oz. glass jar	12 days/40 days[c]
Target Analyte List Inorganics	6010B, 7471A	15	1	One 8-oz. glass jar	26 days for mercury, 180 days for metals

Table 3-1 Summary of Analytical Methods, Preservatives, Containers, and Holding Times Universal Waste, Inc. Site

Parameter	Method	Number of Samples	QC Samples[a]	Containers/Preservative[b] per Sample	Holding Time
Sediment					
Volatile Organic Compounds + TICs	8260B	30	2	Two pre-weighed 40-mL with deionized water and one pre-weighed 40-mL vial with stir bar and methanol and one 4-oz. glass vial with septum(if no other containers are shipped)	48 hours for analysis or freezing to <7˚C and 12 days for analysis following freezing
Semivolatile Organic Compounds + TICs	8270C	30	2	One 8-oz. glass jar	12 days/40 days[c]
Polychlorinated Biphenyls Screen	8082 Mod	247	13	One 4-oz. glass jar	12 days/40 days[d]
Polychlorinated Biphenyls	8082	65	4	One 4-oz. glass jar	12 days/40 days[c]
Target Analyte List Inorganics	6010B, 7471A	30	2	One 8-oz. glass jar	26 days for mercury, 180 days for metals
Total Organic Carbon	Lloyd Kahn	65	4	One 4-oz. glass jar	26 days
Solids					
PCB Congeners WHO list	1668A	2		One 4-oz. glass jar	12 days/40 days[c]
PCB Full list	1668A	2		One 4-oz. glass jar	12 days/40 days[c]
Surface Water					
Volatile Organic Compounds	524.2	6		Three 40-mL glass vials with septa preserved HCl < pH 2	12 days for waters with chemical preservative, and 5 days for unpreserved sample
Volatile Organic Compounds + TICs	524.2	10	1	Three 40-mL glass vials with septa preserved HCl < pH 2	12 days for waters with chemical preservative, and 5 days for unpreserved sample
Semivolatile Organic Compounds	625[d]	6		Two 1-L amber glass bottles	5 days/40 days[c]
Semivolatile Organic Compounds + TICs	625[d]	10	1	Two 1-L amber glass bottles	5 days/40 days[c]
Polychlorinated Biphenyls	8082	25	2	Two 1-L amber glass bottles	5 days/40 days[c]
Target Analyte List Inorganics	6010B, 7470A, 9012	16	1	One 1-L HDPE bottle	26 days for mercury, 180 days for metals

Table 3-1 Summary of Analytical Methods, Preservatives, Containers, and Holding Times Universal Waste, Inc. Site

Parameter	Method	Number of Samples	QC Samples[a]	Containers/Preservative[b] per Sample	Holding Time
Ground Water					
Volatile Organic Compounds	524.2	5	1	Three 40-mL glass vials with septa preserved HCl < pH 2	12 days for waters with chemical preservative, and 5 days for unpreserved sample
Volatile Organic Compounds + TICs	524.2	4		Three 40-mL glass vials with septa preserved HCl < pH 2	12 days for waters with chemical preservative, and 5 days for unpreserved sample
Semivolatile Organic Compounds	625[d]	5	1	Two 1-L amber glass bottles	5 days/40 days[c]
Semivolatile Organic Compounds + TICs	625[d]	4		Two 1-L amber glass bottles	5 days/40 days[c]
Polychlorinated Biphenyls	8082	9	1	Two 1-L amber glass bottles	5 days/40 days[c]
Target Analyte List Inorganics	6010B, 7470A, 9012	9	1	One 1-L HDPE bottle	26 days for mercury, 180 days for metals

See Notes and Key below.

Notes:

A) QC Samples is the number of field duplicates and the number of MS/MSD samples required. If number of QC samples listed is 2, collect 2 field duplicates and extra volume with 2 samples for MS/MSD. Field duplicates and MS/MSD are to be collected at a rate of 1 per 20 samples.
B) All samples to be cooled to 4°C except for metals analysis samples shipped alone. Sample containers must have Teflon-lined lids. Holding times are based on verified times of sample receipt and are consistent with NYSDEC requirements. 0.008% Na2S2O3 to be added to water samples in the presence of residual chlorine.
C) Holding time is 5 days from collection to extraction and 40 days from extraction to analysis.
D) Method 525 for SVOC analysis not offered by laboratory, substituted Method 625.

Key:

HDPE = High-density polyethylene.
L = Liter.
mL = Milliliter.
NA = Not applicable.
oz. = Ounce.
PCBs = Polychlorinated biphenyls.
SVOC = Semivolatile organic compounds.
TAL = Target Analyze List.
VOC = Volatile organic compounds.

of the screen to a height of 1 to 2 feet above the screen. The sand pack will be capped with a 2- to 3-foot-thick pelletized bentonite seal. Following hydration of the seal, a 5% bentonite/cement grout mix will then be installed to grade. A minimum one-half hour respite will occur between hydration of the bentonite and installation of the grout mix. Each well will be fitted with a water-tight cap (J-plug) and a lockable steel casing to a height of approximately 3.5 feet above grade with a 2-foot square anti-percolation pad.

Drill cuttings from all boreholes will be drummed and transported to an on-site storage area (location to be determined by EEEPC). The drill rig and equipment will undergo an initial decontamination as well as decontamination at the end of the drilling activities. Down-hole equipment will undergo decontamination between each borehole. Decontamination procedures are described below in Section 2.10.

3.3.2 Well Development

Each well will be developed after construction is complete, but no sooner than 24 hours after grout placement. Well development will be performed using a submersible pump at the maximum sustainable flow rate. A combined overpumping and surging technique will be used during development, in addition to pumping from varying depths within the screened interval.

Groundwater parameters including temperature, pH, specific conductance, and turbidity will be measured at the beginning of development and at least every 5 minutes or at the removal of each static water volume during development. Development will continue until temperature, pH, and specific conductance have stabilized over three consecutive readings and turbidity of the discharge is 50 nephelometric turbidity units (NTUs) or less. If pH, specific conductance, and temperature have stabilized but the turbidity goal of 50 NTUs has not been met, well development will be considered complete when a minimum of five times the volume of static water in the well have been removed and the well has been pumped for at least two hours or if the well has been pumped dry 3 times.

Development water from the wells will be handled according to methodology described in Section 2.10. The pump will be decontaminated prior to use at the next location. Dedicated tubing will be used in each well.

3.4 Water Level Survey and Monitoring Well Sampling

3.4.1 Water Level Survey

Static groundwater levels and total depth measurements will be collected from each monitoring wells in a single day. Groundwater level measurements will be made using an electronic water-level indicator graduated to 0.01 foot. The probe of the instrument will be lowered slowly until the indicator light illuminates and/or the alarm sounds. The probe will be pulled above the water surface and the measurement repeated. The depth to water will be noted from a marked and surveyed reference point on top of the well casing.

After use, any part of the water-level indicator or weighted tape that was submerged will be decontaminated by rinsing with distilled or deionized water.

In order to establish river elevation for both developing a site groundwater flow model and to establish approximate top of sediment elevation, EEEPC will survey marked points on the river control structure. The elevation of the marked points for both the upstream and downstream side of the river control structure will be established. EEEPC personnel will then use a water level indicator to measure the vertical distance from the known elevation point to the river surface to determine river elevation on a daily basis. Elevations will be accurate to 0.01 feet. In addition, an existing USGS staff gauge located approximately 1 mile upstream of the structure will be used to confirm measured rive elevations at the site.

3.4.2 Monitoring Well Sampling

Groundwater samples will be collected from each groundwater monitoring wells. Monitoring wells will be sampled using modified low-flow purging/sampling techniques using a decontaminated submersible pump and dedicated polyethylene tubing. The objectives and methods for the low-flow procedure are included in the United States Environmental Protection Agency (EPA) Region II Guidance document titled *Groundwater Sampling Procedure, Low Stress (Low Flow) Purging and Sampling* (EPA 1998). The primary goal of low-flow purging/sampling is to provide groundwater quality data that are representative of actual aquifer conditions with minimal alteration caused by inappropriate or variable sampling techniques. Sample collection procedures are described below.

- Calibrate all field measurement devices daily in accordance with manufacturers' instructions;

- Prior to purging and sampling, measure depth to water table with a water level indicator and record initial pH, temperature, specific conductance, turbidity, oxygen reduction potential (ORP), and dissolved oxygen (DO) by pumping water into a flow-through cell (Horiba U-22 Water Quality Meter with a flow-through cell, or equivalent);

- Purge the well using an initial flow rate of approximately one liter per minute (L/min); however, the flow rate should be adjusted to minimize drawdown to no more than 0.3 foot during purging and sampling. The water level should be monitored with a water level indicator at maximum intervals of 5 minutes. These procedures will be followed for all well purging with the following variances:

- If 0.3-foot drawdown is exceeded and cannot be re-established, establishment of zero drawdown (i.e., water elevation stabilization at a constant or increasing level during purging) shall be attempted. An initial decrease in water level greater than 0.3 foot is allowable as long as the water elevation stabilizes

and remains stable or increases during the remainder of purging and sampling. If zero drawdown is not possible, stabilization of water quality parameters with drawdown should then be attempted. If stabilization of parameters cannot be achieved with drawdown, the well should be purged dry (if possible), then sampled following sufficient recharge.

- Record ORP, pH, specific conductance, temperature, turbidity, and DO at least every five minutes until stabilization of all parameters is achieved. The purging will be considered complete after the field parameters have stabilized for three successive readings. The readings are considered stable when they are within the following EPA guidelines:
  - 10 millivolts for ORP;
  - 0.1 for pH;
  - 3% for specific conductance;
  - 10% for DO; and
  - 10% for turbidity.

- When the above readings have stabilized, the groundwater sample will be collected. If turbidity is unstable (i.e., varies by >10% or more), but below 50 nephelometric turbidity units (NTUs), the sample will be collected. Sampling will be performed at a slow rate to minimize volatilization (typically 0.10 to 0.25 L/min). Volatile organic sample portions will be collected first.

Groundwater samples from each monitoring well will be submitted for PCB using EPA method 8082, Volatile Organic Compounds (VOCs) using EPA method 524.2, Semi Volatile Organic Compounds (SVOCs) using EPA method 625, and Target Analyte List (TAL) Inorganics (6010B, 7470A, and 9012). Four of these samples will also be analyzed for VOC and SVOC Tentatively Identified Compounds (TICS).

3.5 Surface Soil Sampling

A total of 25 initial surface soil samples will be collected from the subject property (see Figure 3). Samples will be collected in areas where potential surface runoff may have occurred adjacent to the property line, or in areas that show signs of potential contamination, such as areas with stressed vegetation or staining. At all surface soil sample locations, a grab sample will be collected from the 0- to 6-inch depth interval below vegetative cover and submitted for PCB screening analysis using EPA method 8082 modified. Based on the results of this analysis, up to 10 samples will also be run using the full EPA method 8082 to allow for comparison with screening results. Additionally, 12 select samples will also be analyzed for TAL Inorganics, VOCs, and SVOCs (see Table 2-1).

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Source: ESRI 2010

Approximate Project Work Area Boundary

Proposed Approximate Surface Soil Location
Actual locations will be adjusted in the field.

Parcel Boundary

Note: Additional samples may be collected based on field observations.

Figure 3
Proposed Surface Soil Sample Locations
Universal Waste Inc.
Utica, NY

N

0 100 200 400
Feet

A handheld GPS unit will be used to survey the coordinates of each sample location. The GPS unit will be field checked at the beginning and end of each field day by surveying a common fixed point such as the river control structure or location along Sewer Plant Road. Surface soil sampling will be performed in accordance with the procedures described below.

Equipment

- Handheld GPS unit
- Log book
- Dedicated stainless-steel spoons or trowels
- Dedicated stainless-steel bowls or pans
- Folding engineer's ruler
- Shovel or hand auger
- Digital camera
- Appropriate sample containers provided by Test America of Amherst, New York (see the QAPP [Appendix B])
- Coolers with ice.

Procedures

- Observe sample area to determine suitable location with obvious sediment deposition such as low lying, areas exhibiting staining or areas with stressed vegetation. Denote each location in the logbook and establish a GPS reading for the location.
- Collect surface soil samples using dedicated, pre-cleaned, stainless-steel spoons or trowels from a depth of 0 to 6 inches bgs. If vegetation is present (grass, weeds, etc.), remove vegetation and sample the top 6 inches of soil immediately under the vegetation. Verify sample depth using an engineering scale.
- Record the lithologic description, depth, and visual/olfactory observations in the field notebook.

- Record the sample location, date, time, and any noteworthy field conditions prevailing at the sample location, such as stressed vegetation, and any prominent waste in the immediate sample area.

- Photograph each sample and/or sampling location. Photographs of the surface soil operation will be collected throughout the field program. For each photograph, record the time, date, photo compass orientation, and any features or noteworthy items in the soil sample. Record this data in the logbook.

- Place a wooden stake or pin flag back at the sample location center point and survey sample location with GPS.

- Identify the appropriate analyses (see Table 2-1) for the specific sample location, collect the appropriate sample volume, and place directly into a dedicated stainless steel or plastic bowl. Thoroughly homogenize the sample and remove large stones and debris.

- Fill appropriate sample container(s) (see Table 2-1).

- Clean outside of sample jars and write the sample number on the jar lids as listed Section 2.8. Record the sample number, depth, and time in the logbook.

- Place the sample in a cooler maintained with ice at 4°C.

- At the end of the field day, the data manager will complete the sample jar labels and the COC. Place these labels on the sample jars and check against the COC, also produced by the data manager using the Forms II Lite® program.

- Package samples as described below.

- Continue to the next location.

- Upon return from the field, electronically download and archive GPS data and digital photographs.

3.6 Sediment Sampling

Sediment core sampling will be conducted along transects in two general locations including the Mohawk River and upland portions of the site. Sediment coring in the Mohawk River will be conducted separately from upland coring due to high flow rates in the river and safety concerns associated with the river control structure.

Sediment core collection in the Mohawk River will be conducted via vibracore by a subcontractor overseen by EEEPC. Sediment core collection in upland areas will be performed manually by EEEPC. Field data will be recorded using the GPS unit, logbooks, and photographs. Upland sediment core locations along

transects will be located at 100 foot intervals along drainage pathways and may be adjusted in the field based on presence/absence of sediment, evidence of potential contamination or other factors. Mohawk River sediment core locations will be selected prior to beginning field activities, but again will be established using 100 foot intervals. Pre-established coordinates for coring locations on the Mohawk River will be provided to the coring subcontractor. Proposed Mohawk River sediment coring location coordinates are included in Appendix E. Actual coring locations will be recorded by the subcontractor using GPS and will be provided to EEEPC. Proposed sediment core locations and transects are shown on Figure 4.

At each sediment coring transect, a minimum of 3 samples (two bank and one channel) will be collected and submitted to the laboratory for PCB analysis using EPA method 8082 modified. At some transect locations up to four (4) samples may be collected, but sample spacing will remain approximately 100 feet apart. Therefore, approximately a total of 200 samples will be analyzed using EPA method 8082 modified. Following receipt of these results, one sample from each transect (total of 65) will be analyzed using EPA method 8082 (full). These select samples will also be analyzed for total organic carbon. In addition a total of 30 samples will be analyzed for VOCs, SVOCs and TAL inorganics. Samples selected for additional VOC, SVOC and TAL inorganic analysis will be based on field observations.

The GPS unit will be coded to input sample identification, sample depth, water depth, sediment depth, and field notations. Regardless of the coring method, the following information will be recorded for each core:

- GPS coordinates at coring location (data will be collected in North American Datum [NAD] 83 Universal Transverse Mercator [UTM] Zone 18 North)
- Water depth (in inches)
- Sediment depth (in inches)
- Creek width measured at coring location
- Depth to refusal
- Core recovery
- Continuous lithologic description of the sediment at each location
- Other visual (i.e., presence or absence of sheens) and olfactory observations
- Potential sources of contamination (e.g., nonaqueous phase liquid [NAPL])

- Sample depth interval and time
- Number of advances of sleeve

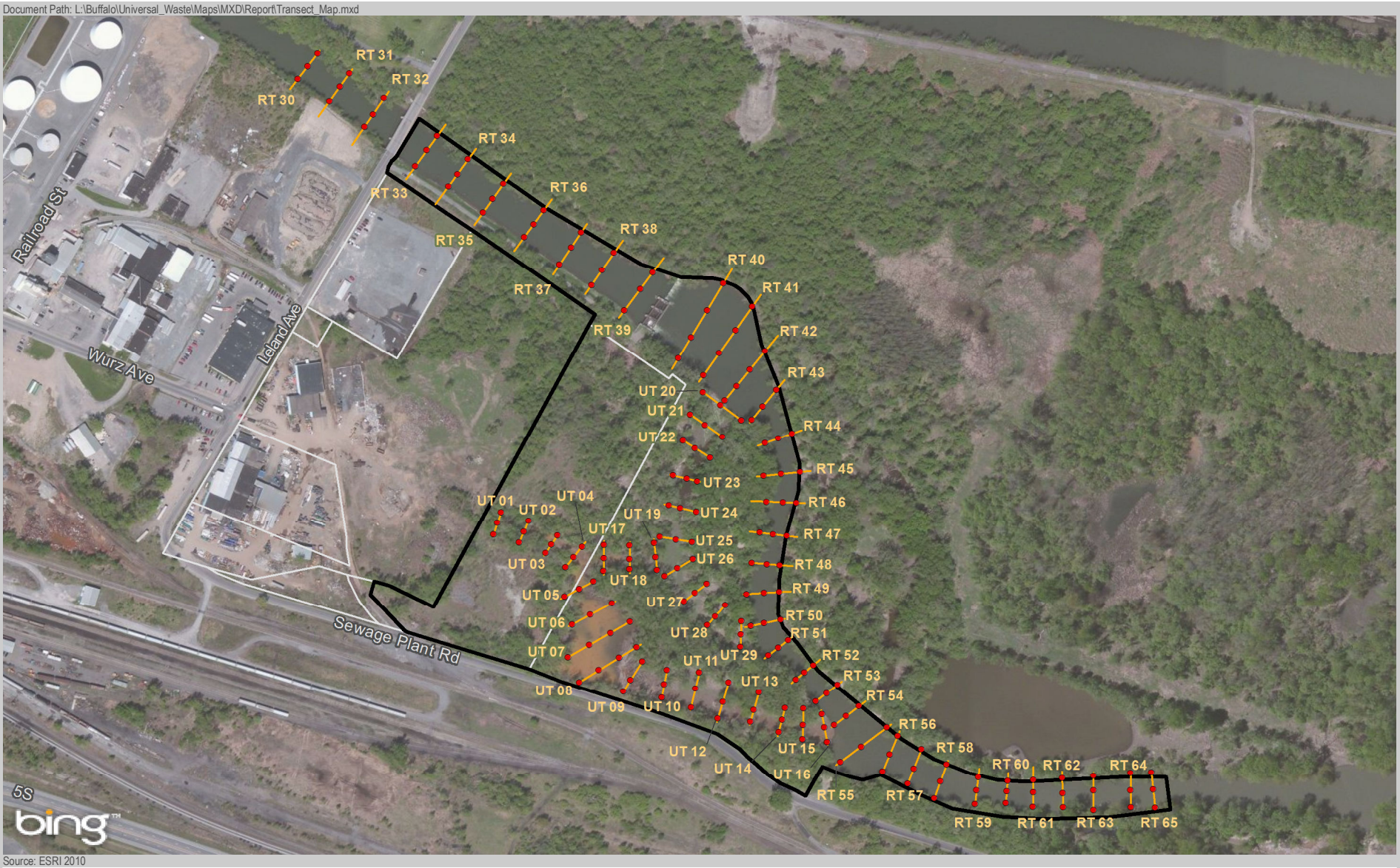
At the beginning and end of each day, the nearest known, fixed structure will be surveyed as a reference location. (e.g., river control structure, road crossing). Data will be transferred and differentially corrected using the GPS software upon returning to the office and assessed for accuracy. GPS data will undergo GPS correction and quality control by a GIS analyst. Attribute and photo-interpreted data will be checked by both the GIS analyst and a field crew member for accuracy.

3.6.1 Upland Sediment Sampling

In upland areas hand-coring will be performed by an EEEPC field team using a sediment coring device advanced into the sediment by hand. The field team will consist of two members who will perform the sediment coring and associated activities. The team will maintain the field logbook and collect and record visual, olfactory, and lithologic observations, collect and package the samples, take photographs, and record GPS sampling locations. An all-terrain utility vehicle will be used to move sampling equipment between the work area and the field support area. Field crew personnel may use waders to walk portions of the site where water depths are greater than ankle-deep. To access sediment sampling areas within the pond or in stream channels where waders are not sufficient, a small jon boat will be used. In general, upland sediment transects are spaced at 100 foot intervals. At a minimum, one sample will be collected from each bank and one sample from the channel. Upland sediment samples will be a composite sample collected for 0 to 3 feet bgs. Where transects are longer (e.g. pond area) samples will be located approximately 100 feet apart. A handheld GPS unit will be used to survey the coordinates of each core location. These data then will be used to generate a final sample location map. During the manual coring, the sediment thickness will be determined based on core refusal. Sediment thickness data will be recorded in the field logbook. The sediment coring device (i.e., acetate liners or equivalent) will be driven by hand into the sediment. Sediment core processing and sampling will follow the procedures described in Section 2.6.3.

3.6.2 Mohawk River Sediment Sampling

Sediment core collection on the Mohawk River will be performed by a subcontractor using their vessel using vibracore sampling methods. Coordinates of proposed Mohawk River sample locations are presented in Appendix E. The subcontracted vessel will navigate to the locations using a GPS. The core will be collected as close as possible to the planned location. If a core cannot be collected



Approximate Project Work Area Boundary

Proposed Sediment Core Location

Transect

Parcel Boundary

RT= River Transect UT= Upland Transect

Figure 4
Proposed Sediment Core Locations
Universal Waste Inc, Site
Utica, NY

N

0 100 200 400

Feet

from that location because there is no sediment or because utilities are present or due to lack of physical access, an alternate location will be selected in the field. The GPS coordinates of the original and the actual sampling location will be documented in the GPS and log book. The rationale for the field adjustment will be documented on field logs. The sample identification number for the new location will be the same as for the original location. The planned locations are shown in Figure 4.

Vibracore sample collection will be conducted by the subcontractor using a vibracore system mounted to the vessel. Vibracore sampling utilizes a stainless steel core barrel and liner driven into sediments using both gravity and by vibrating the core barrel with a vibrahead unit. Once the core barrel has reached the target depth it is withdrawn using a boat mounted hoist. In some cases hand-coring in the Mohawk River may be conducted due to shallow water depth or other accessibility challenges. Vibracore collection will be conducted at approximately 110 locations within the study area (see Figure 4). In general, sediment core transects are spaced at 100 foot intervals and samples within each transect will be collected approximately every 100 feet. Sediment core locations in the river will be determined based on the coordinates associated with the locations shown in the Figure 4. Navigation to vibracore locations will be performed using a differential GPS with sub-meter accuracy and a visual survey will be conducted to look for signs of utility crossings or obstructions. The vibracore operator will perform a daily quality control check to verify proper GPS accuracy. The onboard GPS unit will be used to read the specific coordinates of each core location. The vessel captain will be responsible for collecting this data and transferring it to the EEEPC field team. In general, core collection will begin downstream and advance upstream on each side of the river control structure. At most locations cores will be collected from the top of sediment to approximately 5 feet below top of sediment. To measure sediment thickness, at 3 locations, cores will be collected from the top of sediment to 10 feet below top of sediment. Vibracore collection will use soft core liners inside a steel core barrel.

At locations determined to be absent of sufficient sediment, a surface sediment sample will be collected using a Ponar dredge. A Ponar type dredge sampler consists of a clam shell type bucket, which self closes upon impact with the sediment surface. The depth interval of sampling is typically about 15 centimeters, but will vary depending on the type of sediment material. All Ponar samples will be labeled with "P" at the end of the sample name. Surface sediment grab samples will be attempted a minimum of three times if insufficient recovery is achieved. Following extraction of each sample core, the subcontractor will place the core in an appropriate work area and cut the core liner longitudinally. The EEEPC team will the follow the procedure described below.

3.6.3 Sediment Core Sample Collection Equipment and Procedures

Equipment

- Coring equipment (vibracore or manual coring equipment as described in the following sections)
- Digital camera
- Dedicated stainless-steel spoons
- Clean stainless-steel bowls
- Graduated 10-foot measuring rule or steel rod
- GPS unit (handheld or mounted on the vibracore vessel)
- Field logbook
- Probe, graduated steel rod, or rigid carpenter's rule for water level measurements during manual coring
- Appropriate sample containers (see 2-1)
- Coolers with ice

Procedures

The team will use the methodology described below to collect the sediment cores and the associated samples that will be submitted to the laboratories for analysis.

- Navigate to sample location. For Vibracore collection on river, obtain coordinates of position from vessel captain. Note offset from target coordinates. Position is acceptable if within 10 feet of target. For manual core collection in upland areas proceed to general area. Select specific coring location based on presence of adequate sediment and visual, olfactory or other evidence of contamination. Document location in GPS and logbook.
- If vibracoring, core from top of sediment to refusal or 5 feet below top of sediment (three river sampling locations will be advanced to 10 feet from top of sediment) If hand-coring, core from top of sediment to refusal or 3 feet below top of sediment.
- Field geologist will log the sediment core, and document sediment sampling and other data collection activities. Vibracores will be opened by vibracore vessel crew. Hand cores will be observed in the acetate liner, lain on plastic sheeting and cut open longitudinally or, if sufficiently liquid, poured directly

into a stainless steel bowl. Acetate liners may be rinsed with surface water and reused to obtain sufficient sample volume.

- Screen sediment for organic vapors with a PID. Collect volatile organic samples, filling appropriate sample containers (see Table 2-1).
- Describe sediment based on observations made in liner and in bowl.
- Sample cores will be considered viable if a minimum of 60 percent recovery is achieved. In shallower areas, acceptable recovery is defined as a minimum of 50 percent of the penetrated sediment thickness. The vibracore system will provide a sediment thickness estimate sufficient to evaluate the percent recovery in cores.
- Record the lithologic description, depth to refusal, description of bottom of core, core recovery, water depth, and visual/olfactory observations in the field logbook.
- Photograph every core or sampled sediment and/or sampling location. Photographs of the coring operation will also be collected throughout the field program. For each photograph, record the time, date, compass orientation, subject.
- Thoroughly homogenize the sample. Remove stones and debris.
- Fill remaining sample container(s) (see Table 2-1).
- For hand-cores, survey coring location via GPS.
- Clean outside of sample jars. Empty excess sediment from bowl. Rinse bowl with surface water.
- Write the sample number on the jar lids as listed in Section 2.8. Record the sample number, depth, and time in the logbook.
- Pass the sample information to the Data Manager. The Data Manager will oversee sample packaging documentation.
- Place the sample in a cooler maintained with ice at 4°C
- At the end of the field day, the data manager will print the sample jar labels and the chain of custody (COC). Place these labels on the sample jars and check against the COC.
- Package samples as described below.

- Upon return from the field, electronically download and archive GPS data and digital photographs.

3.7 Surface Water Sampling

A total of 25 surface water samples will be collected from the onsite drainages, stream and outfall as well as the Mohawk River (see Figures 5 and 6). Ten samples will be collected from upland drainage areas, 10 samples collected from the river and the remaining 5 will be background samples, collected outside the study area. Surface water sampling will be conducted in conjunction with the corresponding sediment sampling events (i.e. upland and Mohawk River sediment sampling events)

Surface water samples will be collected on the upland portion of the property from areas considered most likely to contain contamination including: immediately downstream of the storm water discharge pipe; at divisions within surface water drainage pathways, larger water bodies (e.g. pond area); inflow from the Mohawk River; and at discharge areas to the Mohawk River. Proposed upland surface water sample locations are shown on Figure 5.

Surface water samples will be collected from the Mohawk River between sample locations from the 1998 PISCES report and will include upstream and downstream of the river control structure, downstream of inflows into the river, and in the general locations of the PISCES samples. One background sample will be collected immediately upstream of the Mohawk River study area and two background samples will be collected approximately ¼ mile and ½ mile upstream and downstream of the study area. Proposed sampling locations are shown in Figures 5 and 6. Surface water sampling will be performed in accordance with the procedures described below.

All 25 surface water samples will be submitted to the laboratory for PCB analysis using EPA method 8082. Fifteen of the samples, including at least two background samples, will also be analyzed for VOCs, SVOCs, and TAL inorganics. Sample numbers, containers, holding times and preservatives are summarized in Table 2-1.

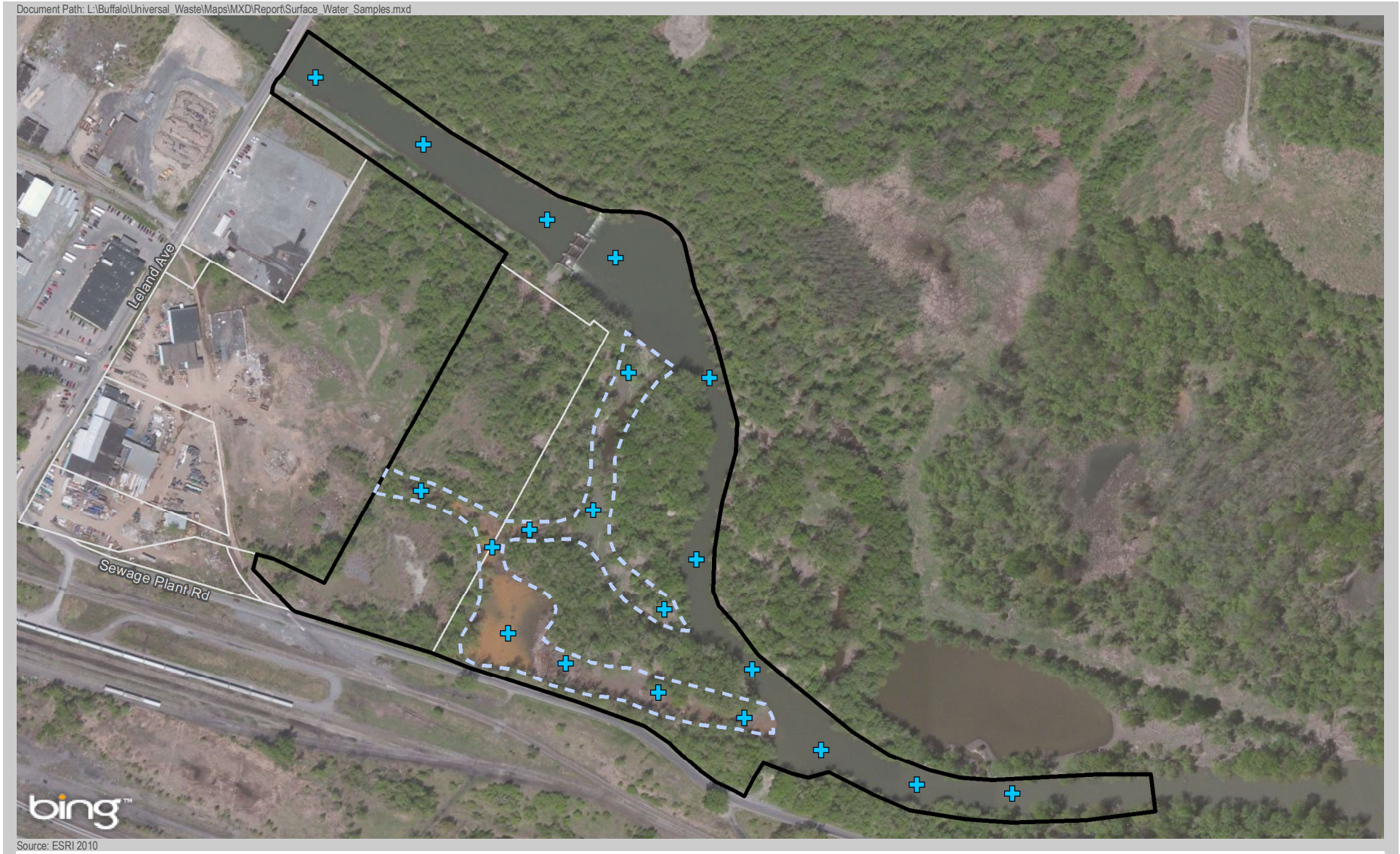


Figure 5
Proposed Surface Water Sample Locations
Universal Waste Inc.
Utica, NY

Document Path: L:\Buffalo\Universal_Waste\Maps\MXD\Report\Background_Surface_Water_Samples.mxd

Source: ESRI 2010

Approximate Project Work Area Boundary

Proposed Approximate Background Surface Water Sample Location
Actual locations will be adjusted in the field.

Parcel Boundary

Figure 6
Proposed Background Surface Water Sample Locations
Universal Waste Inc.
Utica, NY

N

0 250 500 1,000

Feet

Equipment

- Appropriate sample containers (see Table 2-1)
- Disposable gloves
- Digital camera
- GPS unit
- Field logbook
- Cooler with ice

Procedures

- Navigate to sample location by wading or moving boat upstream.
- Avoid disturbing substrate.
- Collect surface water samples prior to collecting any nearby sediment or surface soil samples.
- Keep sample container upstream of personnel.
- Orient opening of sample container upstream.
- For unpreserved containers, remove the lid and invert the sample jar and lower the container beneath the surface. If surface debris or film is present, the container lid can be removed once the underwater if possible. Tilt the container in the direction of water flow and allow the container to fill and then quickly return to the surface. Discard a small portion of sample to allow for expansion and add the correct preservative. Invert the container to mix. Check preservation by pouring a small portion of sample into the lid or another clean container. Secure the cap, label and immediately cool.
- For preserved containers, leave the container lid on until the container is submerged. Slowly open the container in an upright position and allow container to almost fill. Close the container and follow similar steps to check sample preservation.
- Document location of sample in GPS and logbook.
- Document approximate depth and flow of surface water body

3.8 Sample Containers, Labeling, Packaging and Shipping, and Custody

The volumes and containers for the samples are presented in Tables 1 and 2. Sample preservation and holding time requirements also are presented in these tables.

Sample Labeling

All samples will be assigned a unique sample identifier. Samples will be identified by matrix and sample type and labeled with a sequential number. Field duplicate samples will be designated with "D" after the sample designation. Examples are as follows:

- Soil boring samples: UW-SB01-Z1, where:
  - UW = Universal Waste
  - SB01 = soil boring 01
  - Z1 = sampling interval (Z1: 0-4', Z2: 4-8', Z3: 8-12', Z4: 12-16', and Z5: 16-20')

- Surface soil samples: UW-SS01
  - UW = Universal Waste
  - SS = surface soil
  - 01 = sequential sample number

- Sediment samples: UW-UT-01-01B-SD, where:
  - UW = Universal Waste
  - UT = Upland Transect (river transect will be designated at RT)
  - 01 = sequential transect number
  - 01B = sequential sample number (B: bank, C: channel). All samples numbers will begin from left descending bank.
  - SD = Sediment

  If applicable, "P" will be added to the sample designation if a ponar sampler is used.

- Groundwater samples: UW-MW06-GW-0313
  - UW = Universal Waste
  - MW06 = Monitoring well designation
  - GW = Groundwater

    0313 = month and year

- Surface water samples: UW-SW01-BG
  - UW = Universal Waste
  - SW01 = Surface water sequential sample number
  - BG = will be added if surface water sample is a background sample.

Sample Packaging and Shipping

Sample shipment will be performed in strict accordance with all applicable United States Department of Transportation (DOT) regulations. All samples will be transported to the contract laboratory via a laboratory provided courier. The contract laboratory's physical address is:

Sample Custodian
Test America
10 Hazelwood Drive
Amherst, NY 14228
Tel: 716-691-2699

Each sample cooler will be accompanied by a chain-of-custody record to document the transfer of custody from the field to the laboratory. All information requested in the chain-of-custody record will be completed. In addition, any tracking number assigned by the courier will be listed on the chain-of-custody record. A copy of the chain-of-custody form will be retained by the samplers and placed in the project records file. The original will be sealed in a plastic bag and placed inside the cooler.

3.9 Field QC Samples

Field QC samples include field duplicates, trip blanks, rinsate blanks, and additional volume for laboratory matrix spike/matrix spike duplicate (MS/MSD) analyses.

- Field duplicates will be collected from aqueous, vapor, and solid samples at a frequency of one per 20 samples per matrix.

- Trip blanks for water samples will be prepared by the laboratory, transported to the site with the laboratory bottles, and returned to the lab for analysis at the rate of one per shipping cooler containing water samples collected for VOC analysis.

- Rinsate blanks will be collected from non-dedicated or non-disposable sampling equipment. This includes reusable submersible pumps. One rinsate blank will be collected by passing deionized water over the pump after decontamination is completed.

- Extra volume will be collected for laboratory MS/MSD analysis will be collected from aqueous and solid samples at a frequency of one set per 20 samples per matrix.

3.10 Decontamination

All drilling, testing, and sampling devices that come in contact with sample media or are used to drill or test wells will be decontaminated before and after use. Dedicated sampling equipment will be used to the maximum extent possible in order

to prevent cross contamination. Decontamination of large equipment such as drilling tools, etc., may consist of the following:

- Removal of foreign matter; and
- High-pressure hot water cleaning.

A temporary decontamination pad will be established and will consist of plastic sheeting, bermed on all sides, with a sump for water collection.

The following alternative procedure will be used on smaller equipment and tools, which may include some downhole equipment:

- Initially remove all foreign matter;
- Scrub with brushes in a laboratory-grade detergent solution;
- Rinse with potable water; and
- Rinse with distilled water.

The submersible pump utilized for purging and collecting groundwater samples will be decontaminated prior to each use by being placed in a bucket containing a laboratory-grade detergent solution. The exterior of the pump will be scrubbed with a brush and the detergent solution will be run through the pump. The pump will then be placed in a bucket of potable water and the water will be run though the pump. The exterior of the pump will then be rinsed with distilled water.

3.11 Investigation-derived Waste Management

Waste soil generated during drilling and other solid wastes will be collected to the extent possible, containerized in 55-gallon drums, and temporarily stored at the Site pending analysis and disposal. Wastewater will be generated during numerous aspects of the field investigation, including: drilling, development, well purging and decontamination. Wastewater will also be containerized in 55-gallon drums and temporarily stored at the Site pending analysis and disposal. A single composite sample will be collected from each matrix and analyzed for pH, ignitability, Toxicity Characteristic Leaching Procedure (TCLP) VOCs, and TCLP metals in order to characterize the wastes for appropriate disposal. Each composite sample will be created from no less than one discrete aliquot per drum. Containerized wastes will be shipped off-site for appropriate disposal.

Personal protective equipment (PPE) and other solid wastes will be double-bagged and containerized in 55-gallon drum at the Site. This waste will be shipped off-site for appropriate disposal with the soil and water waste.

4 References

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A Site Specific Health and Safety Plan

Revision 8
January 2008

ECOLOGY AND ENVIRONMENT, INC.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Project: Universal Waste Inc.

Project No.: EN-003253-0001-01TTO

TDD/PAN No.:

Project Location: Intersection of Wurz Avenue and Sewage Plant Road, Utica, New York, 13502

Proposed Date of Field Activities: March 2013 – April 2013

Project Director: Mike Morgante

Project Manager: George Lukert

Prepared by: Ben Cole Date Prepared: January 28, 2013

Approved by: Thomas Senior Date Approved: February14, 2013

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1. INTRODUCTION

1.1 POLICY

It is E & E's policy to ensure the health and safety of its employees, the public, and the environment during the performance of work it conducts. This site-specific health and safety plan (SHASP) establishes the procedures and requirements to ensure the health and safety of E & E employees for the above-named project. E & E's overall safety and health program is described in *Corporate Health and Safety Program* (CHSP). After reading this plan, applicable E & E employees shall read and sign E & E's Site-Specific Health and Safety Plan Acceptance form.

This SHASP has been developed for the sole use of E & E employees and is not intended for use by firms not participating in E & E's training and health and safety programs. Subcontractors are responsible for developing and providing their own safety plans.

This SHASP has been prepared to meet the following applicable regulatory requirements and guidance:

Applicable Regulation/Guidance
29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER)
Other:

1.2 SCOPE OF WORK

Description of Work: EEEPC will be conducting a remedial investigation that will include installation of soil borings and monitoring wells; collection of sediment cores on the Mohawk River by vibracore; collection of sediment cores by hand in upland drainage areas; and collection of numerous surface soil, subsurface soil, surface water and groundwater samples. Soil borings and monitoring wells will be installed by a drilling subcontractor using direct push technology (DPT) and hollow stem auger (HSA) methods. Sediment cores in the Mohawk River will be collected by a subcontractor on their vessel using vibracroe technology with EEEPC on board.

Equipment/Supplies: Attachment 1 contains a checklist of equipment and supplies that will be needed for this work.

The following is a description of each numbered task:

Task Number	Task Description
1	Oversight, logging and sampling during soil boring and groundwater monitoring well installations.
2	Collecting surface soil and surface water samples.
3	Collecting upland sediment samples.
4	Oversight, logging and sampling during vibracore collection on the Mohawk River.

1.3 SITE DESCRIPTION

Site Map: Site figures are attached at the end of this plan.

Site History/Description: The Universal site is an inactive scrap yard that salvaged ferrous and stainless steel. From 1957 until 2008 the site was operated by Universal Waste Inc., and handled electrical components including transformers that apparently contained PCBs. Recycling and recovery operations conducted at

the site resulted in release of large quantities of PCBs from 1957 to 1978. PCBs and other contaminants were detected in soil and groundwater during preliminary investigations on the Universal Waste site.

The project site consists of vacant land surrounding the Universal site and is shown on Figure 1. The Universal site is bordered to the north by a narrow strip of wooded land and the Mohawk River. A former petroleum bulk storage facility lies to the west. South of the site is partially wooded vacant land with a rail yard further south. Vacant wooded land lies to the east of the site. A former C&D recycling facility historically occupied the property immediately east of the site, while the land further east is undeveloped, largely wooded and swampy. Wetlands and stream channels that discharge into the Mohawk River are found on this land. The Mohawk River located further east. This investigation will focus primarily on the land to the north, south and east of the Universal site, as well as the Mohawk River.

The work area includes approximately 3,500 feet on the Mohawk River. An inactive flow control structure/low head dam is located within the river work area.

Is the site currently in operation? ☐ Yes ■ No

Locations of Contaminants/Wastes: PCB, VOC and metals contamination has been detected in soil, sediment and groundwater.

Types and Characteristics of Contaminants/Wastes:

■ Liquid	■ Solid	☐ Sludge	☐ Gas/Vapor
☐ Flammable/Ignitable	■ Volatile	☐ Corrosive	☐ Acutely Toxic
☐ Explosive	☐ Reactive	■ Carcinogenic	☐ Radioactive
☐ Medical/Pathogenic	Other: _____		

2. ORGANIZATION AND RESPONSIBILITIES

E & E team personnel shall have on-site responsibilities as described in E & E's standard operating procedure (SOP) for Site Entry Procedures (GENTECH 2.2). The project team, including qualified alternates, is identified below.

Name	Site Role/Responsibility
TBD	Project/Task Manager
TBD	Site Safety Officer

Name	Site Role/Responsibility

3. TRAINING

Prior to work, E & E team personnel shall have received training as indicated below. As applicable, personnel shall have read the project work plan, sampling and analysis plan, and/or quality assurance project plan prior to project work.

Training	Required
40-Hour OSHA HAZWOPER Initial Training and Annual Refresher (29 CFR 1910.120)	X
Annual First Aid/CPR	X
Hazard Communication (29 CFR 1910.1200)	X
40-Hour Radiation Protection Procedures and Investigative Methods	
8-Hour General Radiation Health and Safety	
Radiation Refresher	
DOT and Biannual Refresher	X
Other: _____	

4. MEDICAL SURVEILLANCE

4.1 MEDICAL SURVEILLANCE PROGRAM

E & E field personnel shall actively participate in E & E's medical surveillance program as described in the CHSP and shall have received, within the past year, an appropriate physical examination and health rating.

E & E's health and safety record (HSR) form will be maintained on site by each E & E employee for the duration of his or her work. E & E employees should inform the site safety officer (SSO) of any allergies, medical conditions, or similar situations that are relevant to the safe conduct of the work to which this SHASP applies.

Is there a concern for radiation at the site? ☐ Yes ■ No
If no, go to 5.1.

4.2 RADIATION EXPOSURE

4.2.1 External Dosimetry

Thermoluminescent Dosimeter (TLD) Badges: TLD badges are to be worn by all E & E field personnel on certain required sites.

Pocket Dosimeters: _____

_____

Other: _____

_____

4.2.2 Internal Dosimetry

☐ Whole body count ☐ Bioassay ☐ Other

Requirements: _____

4.2.3 Radiation Dose

Dose Limits: E & E's radiation dose limits are stated in the CHSP. Implementation of these dose limits may be designated on a Site specific basis.

Site-Specific Dose Limits: _____

ALARA Policy: Radiation doses to E & E personnel shall be maintained as low as reasonably achievable (ALARA), taking into Account the work objective, state of technology available, economics of improvements in dose reduction with respect to overall Health and safety, and other societal and socioeconomic considerations.

5. SITE CONTROL

5.1 SITE LAYOUT AND WORK ZONES

Site Work Zones: Refer to the site sketch attached at the end of this plan. Work will be performed throughout the study area. A sample processing and support area will be set up along the south portion of the site, adjacent to Sewage Plant Road.

Site Access Requirements and Special Considerations: Most of the work area is wooded with uncontrolled access. Some work will be conducted on the Mohawk River. River access is via an unimproved NYSDEC boat launch approximately ½ mile east of the site, and a boat launch approximately 1 mile west of the site, near Utica Harbor. The vibracore subcontractor will utilize a combination of spuds/anchors/tie-off lines to keep the vibracore vessel stationary during core collection.

Illumination Requirements: None. Work hours are anticipated from 7:00 am to 5:00 pm. Monday thru Friday.

Sanitary Facilities (e.g., toilet, shower, potable water): Travel off site as needed for clean sanitary facilities.

On-Site Communications: Communications by cellular phone and or hand signals.

Other Site-Control Requirements: None.

5.2 SAFE WORK PRACTICES

Daily Safety Meeting: A daily safety meeting will be conducted for all E & E personnel and documented on the Daily Safety Meeting Record form or in the field logbook. The information and data obtained from applicable site characterization

and analysis will be addressed in the safety meetings.

Work Limitations: Work shall be limited to a maximum of 12 hours per day. If 12 consecutive days are worked, at least one day Off shall be provided before work is resumed. Work will be conducted in daylight hours unless prior approval is obtained And the illumination requirements in 29 CFR 1910.120(m) are satisfied.

Weather Limitations: Work shall not be conducted during electrical storms. Work conducted in other inclement weather (e.g., rain, snow) will be approved by project management and the regional safety coordinator or designee.

Other Work Limitations: Work on site will be limited to a maximum of 10 hours per day 5 days per week. All work will be conducted in daylight hours.

Buddy System: Field work will be conducted in pairs of team members according to the buddy system.

Line of Sight: Each field team member shall remain in the line of sight and within verbal communication of at least one other Team member.

Eating, Drinking, and Smoking: Eating, drinking, smoking, and the use of tobacco products shall be prohibited in the exclusion and contamination reduction areas.

Contamination Avoidance: Field personnel shall avoid unnecessary contamination of personnel, equipment, and materials To the extent practicable.

Sample Handling: Protective gloves of a type designated in Section 7 will be worn when containerized samples are handled for labeling, packaging, transportation, and other purposes.

Other Safe Work Practices: Hard hat, safety glasses, and steel toe boots are required at all times while on site. When drilling operations are in progress the EEEPC personnel shall stay clear of the rig and when communication with the driller is necessary only move near the driller's work zone if you have first made them aware of your need to do so and they indicate it is okay to enter. PFDs will be worn while working on or close to the river. Waders may be worn when working in upland drainage areas.

6. HAZARD EVALUATION AND CONTROL

6.1 PHYSICAL HAZARD EVALUATION AND CONTROL

Potential physical hazards and their applicable control measures are described in the following table for each task.

Hazard	Task Number	Hazard Control Measures
Biological (flora, fauna, etc.)	1,2,3,4	■ Potential hazard: ■ Establish site-specific procedures for working around identified hazards. ■ Other:
Cold Stress	1,2,3,4	■ Provide warm break area and adequate breaks. ■ Provide warm noncaffeinated beverages.

Hazard	Task Number	Hazard Control Measures
		■ Promote cold stress awareness. ■ See *Cold Stress Prevention and Treatment* (attached at the end of this plan if cold stress is a potential hazard).
Compressed Gas Cylinders	N/A	■ Use caution when moving or storing cylinders. ■ A cylinder is a projectile hazard if it is damaged or its neck is broken. ■ Store cylinders upright and secure them by chains or other means. ■ Other:
Confined Space	N/A	■ Ensure compliance with 29 CFR 1910.146. ■ See SOP for Confined Space Entry. Additional documentation is required. ■ Other:
Drilling	1	■ See SOP for Health and Safety on Drilling Rig Operations. Additional documentation may be required. ■ Landfill caps will not be penetrated without prior discussions with corporate health and safety staff. ■ Other:
Drums and Containers	1,2,3,4	■ Ensure compliance with 29 CFR 1910.120(j). ■ Consider unlabeled drums or containers to contain hazardous substances and handle accordingly until the contents are identified. ■ Inspect drums or containers and assure integrity prior to handling. ■ Move drums or containers only as necessary; use caution and warn nearby personnel of potential hazards. ■ Open, sample, and/or move drums or containers in accordance with established procedures; use approved drum/container-handling equipment. ■ Other:
Electrical	1,4	■ Ensure compliance with 29 CFR 1910 Subparts J and S. ■ Locate and mark energized lines. ■ De-energize lines as necessary. ■ Ground all electrical circuits. ■ Guard or isolate temporary wiring to prevent accidental contact. ■ Evaluate potential areas of high moisture or standing water and define special electrical needs. ■ Other:
Excavation and Trenching	N/A	■ Ensure that excavations comply with and personnel are informed of the requirements of 29 CFR 1926 Subpart P. ■ Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P. ■ Identify special personal protective equipment (PPE) (see Section 7) and monitoring (see Section 8) needs if personnel are required to enter approved excavated areas or trenches. ■ Maintain line of sight between equipment operators and personnel in excavations/trenches. Such personnel are prohibited from working in close proximity to operating machinery.

Hazard	Task Number	Hazard Control Measures
		■ Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results. ■ Other:
Fire and Explosion	1,4	■ Inform personnel of the location(s) of potential fire/explosion hazards. ■ Establish site-specific procedures for working around flammables. ■ Ensure that appropriate fire suppression equipment and systems are available and in good working order. ■ Define requirements for intrinsically safe equipment. ■ Identify special monitoring needs (see Section 8). ■ Remove ignition sources from flammable atmospheres. ■ Coordinate with local fire-fighting groups regarding potential fire/explosion situations. ■ Establish contingency plans and review daily with team members. ■ Other:
Heat Stress	N/A	■ Provide cool break area and adequate breaks. ■ Provide cool noncaffeinated beverages. ■ Promote heat stress awareness. ■ Use active cooling devices (e.g., cooling vests) where specified. ■ See *Heat Stress Prevention and Treatment* (attached at the end of this plan if heat stress is a potential hazard).
Heavy Equipment Operation	1,4	■ Define equipment routes, traffic patterns, and site-specific safety measures. ■ Ensure that operators are properly trained and equipment has been properly inspected and maintained. Verify back-up alarms. ■ Ensure that ground spotters are assigned and informed of proper hand signals and communication protocols. ■ Identify special PPE (Section 7) and monitoring (Section 8) needs. ■ Ensure that field personnel do not work in close proximity to operating equipment. ■ Ensure that lifting capacities, load limits, etc., are not exceeded. ■ Other:
Heights (Scaffolding, Ladders, etc.)	N/A	■ Ensure compliance with applicable subparts of 29 CFR 1910. ■ Identify special PPE needs (e.g., lanyards, safety nets, etc.) ■ Other:
Noise	1,4	■ Inform personnel of hearing protection requirements (Section 7). ■ Define site-specific requirements for noise monitoring (Section 8). ■ Other:
Overhead Obstructions	1,4	■ Wear hard hat. ■ Other:
Power Tools	3,4	■ Ensure compliance with 29 CFR 1910 Subpart P. ■ Other:

Hazard	Task Number	Hazard Control Measures
Sunburn	ALL	■ Apply sunscreen. ■ Wear hats/caps and long sleeves. ■ Other:
Utility Lines	1,4	■ Identify/locate existing utilities prior to work. ■ Ensure that overhead utility lines are at least 25 feet away from project activities. ■ Contact utilities to confirm locations, as necessary. ■ Other:
Weather Extremes	ALL	■ Potential hazards: ■ Establish site-specific contingencies for severe weather situations. ■ Provide for frequent weather broadcasts. ■ Weatherize safety gear, as necessary (e.g., ensure eye wash units cannot freeze, etc.). ■ Identify special PPE (Section 7) needs. ■ Discontinue work during severe weather. ■ Other:
Other:		■ ■
Other:		■ ■

6.2 CHEMICAL HAZARD EVALUATION AND CONTROL

6.2.1 Chemical Hazard Evaluation

Potential chemical hazards are described by task number in Table 6-1. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

6.2.2 Chemical Hazard Control

An appropriate combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below published exposure levels (see Section 6.2.1).

Applicable Engineering/Administrative Control Measures: _____

_____

PPE: See Section 7. _____

6.3 RADIOLOGICAL HAZARD EVALUATION AND CONTROL

6.3.1 Radiological Hazard Evaluation

Potential radiological hazards are described below by task number. Hazard Evaluation Sheets for major known contaminants are attached at the end of this plan.

Task Number	Radionuclide	DAC (μCi/ml)	Route(s) of Exposure	Major Radiation(s)	Energy(s) (MeV)	Half-Life

6.3.2 Radiological Hazard Control

Engineering/administrative controls and work practices shall be instituted to reduce and maintain employee exposures to a level at or below the permissible exposure/dose limits (see sections 4.2.3 and 6.3.1). Whenever engineering/administrative controls and work practices are not feasible or effective, any reasonable combination of engineering/administrative controls, work practices, and PPE shall be used to reduce and maintain employee exposures to a level at or below permissible exposure/dose limits.

Applicable Engineering/Administrative Control Measures: _____

_____

PPE: See Section 7.

TABLE 6-1

CHEMICAL HAZARD EVALUATION

Task Number	Compound	Exposure Limits (TWA)			Dermal Hazard (Y/N)	Route(s) of Exposure	Acute Symptoms	Odor Threshold/ Description	FID/PID	
		PEL	REL	TLV					Relative Response	Ioniz. Poten. (eV)
All	Polychlorinated biphenyl 1242*	1 mg/m3 Sk	0.001 mg/m3 Sk	1 mg/m3 Sk	Y	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, chloracne; liver damage; reproductive effects; [potential occupational carcinogen]	-- Butterlike	N/A	N/A
All	Polychlorinated biphenyl 1254*	0.5 mg/m3 Sk	0.001 mg/m3 Sk	0.5 mg/m3 Sk	Y	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, chloracne; liver damage; reproductive effects; [potential occupational carcinogen	-- Butterlike	N/A	N/A
All	Lead	0.050 mg/m3	0.01 mg/m3	0.05 mg/m3	Yes	Inhalation, ingestion, eye and/or skin contact	Weakness, exhaustion, eye irritation, hypotension	n/a	None	None
All	Cadmium	0.005 mg/m3	LFC	.01 mg/m3	No	Inhalation, Ingestion	Difficulty breathing; headache, chills, muscle aches, nausea, vomiting, diarrhea, loss of sense of smell	n/a	None	None

All	Chromium	1 mg/ m^3	0.5 mg/m 3	0.5 mg/m^3	Y	E, IH, IN, SC	Irritation to the eyes, skin; lung fibrosis (histologic)	Blue white/ steel gray odorless solid		
All	Benzo-a-pyrene*	0.2 mg/ m3	0.1 mg/m 3		Y	Inhalation, Ingestion, dermal contact		Faint aromatic odor	None	NA
1-5	Trichloroethylene (TCE)	100p pm	25pp m	100ppm (15min)	Y	Inh,abs,ing, skin and eye contact	Eyes skin resp sys heart liver kidneys cnc	Chloroform like odor		9.45

Note: Use an asterisk (*) to indicate known or suspected carcinogens.

7. LEVEL OF PROTECTION AND PERSONAL PROTECTIVE EQUIPMENT

7.1 LEVEL OF PROTECTION

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and the performance specifications of the PPE. On-site monitoring results and other information obtained from on-site activities will be used to modify these LOPs and the PPE, as necessary, to ensure sufficient personnel protection. The authorized LOP and PPE shall only be changed with the approval of the regional safety coordinator or designee. Level A is not included below because Level A activities, which are performed infrequently, will require special planning and addenda to this SHASP.

Task Number	B	C	D	Modifications Allowed
1		(X)	X	Yes
2		(X)	X	Yes
3		(X)	X	Yes
4		(X)	X	Yes

Note: Use "X" for initial levels of protection. Use "(X)" to indicate levels of protection that may be used as site conditions warrant.

7.2 PERSONAL PROTECTIVE EQUIPMENT

The PPE selected for each task is indicated below. E & E's PPE program complies with 29 CFR 1910.120 and 29 CFR 1910 Subpart I and is described in detail in the CHSP. Refer to 29 CFR 1910 for the minimum PPE required for each LOP.

PPE	Task Number/LOP					
	1	2	3	4		
Full-face APR	(X)	(X)	(X)	(X)		
PAPR						
Cartridges:						
P100						
GMC-P100	(X)	(X)	(X)	(X)		
GME-P100						
Other:						
Positive-pressure, full-face SCBA						
Spare air tanks (Grade D air)						
Positive-pressure, full-face, supplied-air system						
Cascade system (Grade D air)						

PPE	Task Number/LOP					
	1	2	3	4		
Manifold system						
5-Minute escape mask						
Safety glasses	X	X	X	X		
Monogoggles						
Coveralls/clothing						
Protective clothing:						
Tyvek	(X)	(X)	(X)	(X)		
Saranex	(X)	(X)	(X)	(X)		
Other:						
Splash apron						
Inner gloves:						
Cotton						
Nitrile	X	X	X	X		
Latex						
Other:						
Outer gloves:						
Viton						
Rubber						
Neoprene	(X)	(X)	(X)	(X)		
Nitrile						
Other:						
Work gloves		X	X			
Safety boots (as per ANSI Z41)	X	X	X	X		
Neoprene safety boots (as per ANSI Z41)						
Boot covers (type: latex)	(X)	(X)	(X)	(X)		
Hearing protection (type: foam plugs or better)	(X)			(X)		
Hard hat	X			X		
Face shield						
Other: Waders		(X)	(X)			
Other:						

8. HEALTH AND SAFETY MONITORING

Health and safety monitoring will be conducted to ensure proper selection of engineering/administrative controls, work practices, and/or PPE so that employees are not exposed to hazardous substances at levels that exceed permissible exposure/dose limits or published exposure levels. Health and safety monitoring will be conducted using the instruments, frequency, and action levels described in Table 8-1. Health and safety monitoring instruments shall have been appropriately calibrated and/or performance-checked prior to use.

9. DECONTAMINATION PROCEDURES

All equipment, materials, and personnel will be evaluated for contamination upon leaving the exclusion area. Equipment and materials will be decontaminated and/or disposed and personnel will be decontaminated, as necessary. Decontamination will be performed in the contamination reduction area or any designated area such that the exposure of uncontaminated employees, equipment, and materials will be minimized. Specific procedures are described below.

Equipment/Material Decontamination Procedures (specified by work plan): Prevent cross-contamination and decontaminate non – dedicated equipment after each use. Decontamination procedures are described in the work plan.

Ventilation: All decontamination procedures will be conducted in a well-ventilated area.

Personnel Decontamination Procedures: Protective clothing to be removed in a manner that will minimize the potential of contamination to skin contact.

PPE Requirements for Personnel Performing Decontamination: Appropriate splash protections to be worn during steam cleaning and / or a wet decon.

Personnel Decontamination in General: Following appropriate decontamination procedures, all field personnel will wash

Their hands and face with soap and potable water. Personnel should shower at the end of each work shift.

Disposition of Disposable PPE: Disposable PPE must be rendered unusable and disposed as indicated in the work plan.

Disposition of Decontamination Wastes (e.g., dry wastes, decontamination fluids, etc.): Used PPE is to be double bagged if deemed non-hazardous. Potentially hazardous PPE will be drummed. Wastewater, decon solution and soil IDW will be managed in accordance with the work plan

TABLE 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]	
■ PID (e.g., RAE mini RAE) ☐ FID (e.g., OVA 128-) ☐ TVA 1000	1,4	Organic Vapors	Breathing zone	continuous	**Unknown Vapors** Background to 1 ppm above background: Level D 1 to 5 ppm above background: Level C 5 to 500 ppm above background: Level B >500 ppm above background: Level A	**Contaminant-Specific**
Oxygen Meter/Explosimeter	1,4	Explosive gases	At drilling locations	continuous	**Oxygen** <19.5% or >22.0%: Evacuate area; eliminate ignition sources; reassess conditions. 19.5 to 22.0%: Continue work in accordance with action levels for other instruments.	**Explosivity** ≤10% LEL: Continue work in accordance with action levels for other instruments; monitor continuously for combustible atmospheres. >10% LEL: Evacuate area; eliminate ignition sources; reassess conditions.
Radiation Alert Monitor (Rad-mini or RAM-4)					<0.1 mR/hr: Continue work in accordance with action levels for other instruments. ≥0.1 mR/hr: Evacuate area; reassess work plan and contact radiation safety specialist.	
Mini-Ram Particulate Monitor					**General/Unknown** Evaluate health and safety measures when dust levels exceed 2.5 milligrams per cubic meter.	**Contaminant-Specific**
HCN/H_2S (Monitox)					≥4 ppm: Leave area and consult with SSO.	
Draeger Colorimetric Tubes					**Tube** **Action Level** **Action**	
Air Monitor/Sampler Type: _____ Sampling medium: _____					**Action Level** **Action**	

TABLE 8-1

HEALTH AND SAFETY MONITORING

Instrument	Task Number	Contaminant(s)	Monitoring Location	Monitoring Frequency	Action Levels[a]
Personal Sampling Pump Type: _____ Sampling medium: _____					**Action Level** **Action**
Micro R Meter					<2 mR/hr: Continue work in accordance with action levels for other instruments. 2 to 5 mR/hr: In conjunction with a radiation safety specialist, continue work and perform stay-time calculations to ensure compliance with dose limits and ALARA policy. >5 mR/hr: Evacuate area to reassess work plan and evaluate options to maintain personnel exposures ALARA and within dose limits.
Ion Chamber					See micro R meter action levels above.
Radiation Survey Ratemeter/Scaler with External Detector(s)					**Detector** **Action Level** **Action**
Noise Dosimeter (Sound Level Meter)					≤85 decibels as measured using the A-weighed network (dBa): Use hearing protection if exposure will be sustained throughout work shift. >85 dBA: Use hearing protection. >120 dBA: Leave area and consult with safety personnel.
Other:					
Other:					

a Unless stated otherwise, airborne contaminant concentrations are measured as a time-weighted average in the worker's breathing zone. Acceptable concentrations for known airborne contaminants will be determined based on OSHA/NIOSH/ACGIH and/or NRC exposure limits. As a guideline, 1/2 the PEL/REL/TLV, whichever is lower should be used.

10. EMERGENCY RESPONSE

This section contains additional information pertaining to on-site emergency response and does not duplicate pertinent emergency response information contained in earlier sections of this plan (e.g., site layout, monitoring equipment, etc.). Emergency response procedures will be rehearsed regularly, as applicable, during project activities.

10.1 EMERGENCY RESPONSIBILITIES

All Personnel: All personnel shall be alert to the possibility of an on-site emergency; report potential or actual emergency situations to the team leader and SSO; and notify appropriate emergency resources, as necessary.

Team Leader: The team leader will determine the emergency actions to be performed by E & E personnel and will direct these actions. The team leader also will ensure that applicable incidents are reported to appropriate E & E and client project personnel and government agencies.

SSO: The SSO will recommend health/safety and protective measures appropriate to the emergency.

Other: _____

10.2 LOCAL AND SITE RESOURCES (including phone numbers)

Ambulance: 911

Hospital: St. Peter's Hospital, Albany, New York. 315 S Manning Blvd, Telephone # (518) 525-1191

Directions to Hospital (map attached at the end of this plan): From intersection of Wurz Ave and SewagePlant Road travel west on Worz Ave. Turn left/southwest on Genesee approximately 3 miles TO St. Elizabeth Medical Center on the left.

Poison Control: 1-800-222-1222

Police Department: 911

Fire Department: 911

Client Contact: Parag Amin 1-518-402-9768 (New York State Department of Environmental Conservation)

Site Contact: TBD

On-Site Telephone Number: Field crew to be equipped with cellular telephone

Cellular Telephone Number: TBD

Radios Available: None

Other: _____

10.3 E & E EMERGENCY CONTACTS

E & E Operations Center (After Hours):	716/684-8060
Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)
Regional Office Contact:	_____ (office) _____ (home)

Other:	_____ (office)
a. E & E Operations Center (After Hours):	716/684-8060
b. Corporate Health and Safety Director, Dr. Paul Jonmaire:	716/684-8060 (office) 716/655-1260 (home)
c. Assistant Corporate Safety Director, Tom Siener, CIH:	716/684-8060 (office) 716/662-4740 (home) 716/597-5868 (Cell)

10.4 OTHER EMERGENCY RESPONSE PROCEDURES

On-Site Evacuation Signal/Alarm (must be audible and perceptible above ambient noise and light levels): Sound car horn in continuous mode for 10 seconds.

On-Site Assembly Area: At E&E support vehicle.

Emergency Egress Route to Get off Site: TBD per site location

Off-Site Assembly Area: TBD

Preferred Means of Reporting Emergencies: Telephone, see emergency contact information above.

Site Security and Control: In an emergency situation, personnel will attempt to secure the affected area and control site access.

Spill Control Procedures: If on site, mark the area as off limits until monitoring indicates that volatile hazards are not present. Then collect contaminated material and place in to waste drums. Cover the exposed area with fresh material.

Emergency Decontamination Procedures: If emergency is life threatening, gross material removal and ppe removal only. If non life threatening wash hands and remove contaminated outer wear, then transport to the hospital.

PPE: Personnel will don appropriate PPE when responding to an emergency situation. The SSO and Section 7 of this plan will provide guidance regarding appropriate PPE.

Emergency Equipment: Appropriate emergency equipment is listed in Attachment 1. Adequate supplies of this equipment shall be maintained in the support area or other approved work location.

Incident Reporting Procedures: Report to PM who will then report the incident to Corporate H&S.

ecology and environment, inc.

SITE-SPECIFIC HEALTH AND SAFETY PLAN ACCEPTANCE

Project:	
Project No.:	TDD/PAN No.:
Project Location:	
Project Manager:	Project Director:

The undersigned acknowledge that they have read and understood and agree to abide by the health and safety plan.

Name (Printed)	Name (Signature)	Date

ATTACHMENT 1

EQUIPMENT/SUPPLIES CHECKLIST

	No.
INSTRUMENTATION	
FID	
Thermal desorber	
O_2/explosimeter w/cal. Kit	1
Photovac tip	
PID (probe: 10.6 / 11.7 eV)	1
Magnetometer	
Pipe locator	
Weather station	
Draeger tube kit (tubes: _____)	
Brunton compass	
Real-time cyanide monitor	
Real-time H_2S monitor	
Heat stress monitor	
Noise equipment	
Personal sampling pumps and supplies	
MiniRam dust monitor	
Mercury monitor	
Spare batteries (type: _____)	
RADIATION EQUIPMENT/SUPPLIES	
Documentation forms	
Portable ratemeter	
Scaler/ratemeter	
1" NaI gamma probe	
2" NaI gamma probe	
ZnS alpha probe	
GM pancake probe	
Tungsten-shielded GM probe	
Micro R meter	
Ion chamber	
Alert monitor	
Pocket dosimeter	
Dosimeter charger	
Radiation warning tape	
Radiation decon supplies	
Spare batteries (type: _____)	

	No.
SAMPLING EQUIPMENT	
8-oz. bottles	X
Half-gallon bottles	
VOA bottles	X
String	
Hand bailers	
Thieving rods with bulbs	
Spoons	
Knives	
Filter paper	
Bottle labels	
MISCELLANEOUS	
Pump	X
Surveyor's tape	X
100' Fiberglass tape	
300' Nylon rope	
Nylon string	
Surveying flags	
Camera	X
Film	
Bung wrench	X
Soil auger	X
Pick	X
Shovel	X
Catalytic heater	
Propane gas	
Banner tape	
Surveying meter stick	
Chaining pins and ring	
Logbooks (____1_ large, _____ small)	X
Required MSDSs	
Intrinsically safe flashlight	
Potable water	X
Gatorade or equivalent	

	No.
Tables	X
Chairs	X
Weather radio	
Two-way radios	
Binoculars	
Megaphone	
Cooling vest	
EMERGENCY EQUIPMENT	
First aid kit	X
Stretcher	
Portable eye wash	X
Blood pressure monitor	
Fire blanket	
Fire extinguisher	X
Thermometer (medical)	
Spill kit	
DECONTAMINATION EQUIPMENT	
Wash tubs	
Buckets	X
Scrub brushes	X
Pressurized sprayer	
Spray bottle	X
Detergent (type: TSP)	
Solvent (type: Alconox)	X
Plastic sheeting	X
Tarps and poles	
Trash bags	X
Trash cans	
Masking tape	
Duct tape	X
Paper towels	X
Face mask	
Face mask sanitizer	
Step ladders	

	No.
Distilled water	X
Deionized water	X
SHIPPING EQUIPMENT	
Coolers	X
Paint cans with lids, 7 clips each	
Vermiculite	
Shipping labels	X
DOT labels:	
"Up"	
"Danger"	
"Inside Container Complies ..."	
Hazard Group	
Strapping tape	X
Baggies	X
Custody seals	X
Chain-of-custody forms	X
Express shipment forms	
Clear packing tape	X
Permanent markers	X

E&E Safe Boating Procedures

Introduction

For many of E & E's activities, it is necessary to use conventional boats or airboats to transport personnel and conduct work tasks. These tasks can be accomplished safely with the right combination of equipment, safety awareness, training, and common sense. Site-specific training will include working over or near water.

Equipment Required for Boat Operations

1. Personal Flotation Devices (PFD)

All boats must carry one wearable PFD (Type I, II, III or Type V PFD) for each person aboard. A Type V PFD provides performance of a Type I, II, or III PFD (as marked on its label) and must be used according to the label requirements. Any vessel 16 ft and longer (except canoes and kayaks) must also carry one throwable PFD (Type IV PFD).

PFDs must be

- Coast Guard approved;
- In good and serviceable condition; and
- The appropriate size for the intended user.

Accessibility

- A PFD should be worn at all times when the vessel is underway. A wearable PFD can save your life, but only if you wear it;
- PFDs should not be stowed in plastic bags, in locked or closed compartments or have other gear stowed on top of them; and
- The best PFD is the one you will wear.

2. Visual Distress Signals

All vessels used on coastal waters, the Great Lakes, territorial seas, and those waters connected directly to them, up to a point where a body of water is less than two miles wide, must be equipped with U.S.C.G. Approved visual distress signals. Vessels owned in the United States operating on the high seas must be equipped with U.S.C.G. Approved visual distress signals.

Pyrotechnic Devices

Pyrotechnic Visual Distress Signals must be Coast Guard Approved, in serviceable condition, and readily accessible.

- Pyrotechnic Visual Distress Signals are marked with an expiration date. Expired signals may be carried as extra equipment, but can not be counted toward meeting the visual distress signal requirement, since they may be unreliable.
- If pyrotechnic devices are selected a minimum of three are required. That is, three signals for day use and three signals for night. Some pyrotechnic signals meet both day and night use requirements.
- Pyrotechnic devices should be stored in a cool, dry location, if possible.
- A watertight container painted red or orange and prominently marked "DISTRESS SIGNALS" or "FLARES" is recommended.

3. Fire Extinguishers

Coast Guard Approved fire extinguishers are required on boats where a fire hazard could be expected from the motors or the fuel system. Extinguishers are classified by a letter and number symbol. The letter indicates the type fire the unit is designed to extinguish (Type B for example are designed to extinguish flammable liquids such as gasoline, oil and grease fires). The number indicates the relative size of the extinguisher. The higher the number, the larger the fire extinguisher.

Coast Guard approved extinguishers required for boats are hand portable, either B-I or B-II classification and have a specific marine type mounting bracket. It is recommended the extinguishers be mounted in a readily accessible position, away from the areas where a fire could likely start such as the galley or the engine compartment.

Look for the part of the label that says **"Marine Type USCG"**

- Make sure Type B is indicated
- Portable extinguishers will be either size I or II. Size III and larger are too big for use on most recreational boats.

4. Ventilation

A powered ventilation system is required for each compartment in a boat that has a permanently installed gasoline engine with a cranking motor for remote starting.

5. Sound Producing Devices

Any vessel less than 39.4 feet or 12 meters in length must, at a minimum, have some means of making an efficient sound signal – i.e., handheld air horn, athletic whistle, installed horn, etc. or similar means to make an efficient sound signal, to convey your intentions and to identify your position in periods of reduced visibility.

6. Navigation Lights

Recreational vessels are required to display navigation lights between sunset and sunrise and other periods of reduced visibility (fog, rain, haze, etc.).

7. Communication

Although recreational vessels less than 20m (65.6 feet) in length are not required to have VHF radios, a working VHF marine radio is highly recommended. Although a VHF marine radio may not be required, 'radio watch' should be maintained, by monitoring channel 16 (156.800 MHz) whenever a radio is operating and not being used to communicate. In some project-specific cases, a different channel(s) may be identified for maintaining radio-watch.

Cellular phones may provide an effective, alternate means of communication. Phone batteries should be fully charged prior to getting underway.

8. Additional Safety Equipment

- First Aid Kit
- Dewatering Device & Backup bilge pump operable, alternative bailing device available
- Anchor and Line for Area
- Capacity/Certification of Compliance
- Charts of the area and compasses
- Mooring lines - bow, stern, and spring lines
- Bright flashlight or searchlight
- Alternate propulsion - paddle or oar
- Sunscreen and sunhat
- Drinking water

Weather conditions

On a nice warm sunny day there is nothing better than being in a boat on the water enjoying the elements while working. Slight changes in weather conditions, however, can adversely affect a body of water in a relatively short time period. If a boat and crew are in an exposed position this change could seriously jeopardize their safety. A boat operator should be knowledgeable relative to the weather patterns typical of the area in which work is to be done, and able to identify rapidly approaching frontal systems that could place the boat and crew in danger.

1. Wind

Heavy wind is one of the greatest hazards to a small boat on a large body of water. Wind can quickly whip the water surface into a severe chop with breaking white-capped waves. The greater the fetch (upwind distance over water) from the boat's position the worse the wind driven surface waves can be. If the boat is located in a shallow area downwind from deeper water the height of the wind driven waves can be expected to increase dramatically as they enter the shallows. Wind blowing in opposition to the direction of flow can create large swells and threaten the safety of boat and crew.

A boat operator must carefully assess wind conditions upon arrival to work in an area and determine if a significant hazard exists that could be avoided on a calmer day. A rule-of-thumb for estimating wind speed is to look for white caps which generally begin to appear at wind speeds approaching 20 miles per hour over calm water.

If possible, working with the bow into the wind is the safest position for the boat in windy conditions. However, working in a river requires that the bow be held against the direction of flow. If the wind opposes the current this could place the boat and crew in jeopardy as the steep wind driven swell will impact the boat's stern. This situation could potentially swamp the boat if the waves increase in size and begin to break over the transom.

2. Rain

Aside from personal discomfort, light rain does not present an extreme hazard to crews in small boats. Heavy rain over long durations can constitute a significant hazard if allowed to accumulate in the bottom of the boat. If the boat is transporting a load near maximum for its hull configuration the weight of the accumulated rain water could adversely effect stability or significantly reduce freeboard (distance from the waterline to the gunwale). Either of these could result in swamping or capsizing. Lightning storms are common in some locations and must be considered as a serious threat to the safety of boat and crew. Again it is the operator's responsibility to assess the severity of the situation and react to protect the safety of the boat and crew. This action could be nothing more than pumping the excess rain water overboard on a periodic basis or may require that the work effort be temporarily aborted until the rain or lightning dissipates to a non-threatening level.

3. Extreme Conditions

Weather extremes range from hot temperatures and sun exposure to cold temperatures and freezing conditions. Most often small work boats do not provide protection from the elements. Working in the middle of a body of water almost always means complete exposure to the existing weather extremes. The hazards here may be health risks as well as some potential for physical injury. In the case of extreme heat and sun exposure, the crew should always carry drinking water to help minimize the potential for dehydration. Some form of protection from the sun is essential and will aid in reducing the potential for dehydration in addition to minimizing the harmful effects of ultraviolet rays on human skin. Extreme heat combined with high wind can increase the rate of dehydration. Extreme cold and freezing conditions may be more hazardous than heat. In addition to the more obvious concerns about hypothermia, dehydration is still a potential problem. Protective clothing is essential to minimize the effects of hypothermia. An accidental fall overboard could prove fatal if the victim is not properly clothed. Water robs the body of heat 25 times faster than air so the immediate problem is rescuing the overboard victim. Remember the 50/50 rule (i.e., an unprotected overboard victim in water less than or equal to 50 degrees Fahrenheit has a 50 percent chance of surviving for 50 minutes). In addition to these potential health risks a boat operator working in extreme cold and freezing conditions must watch for ice build-up on the boats.

4. Restricted Visibility

The most common cause of restricted visibility is fog. Heavy rain and snow, or in some areas, blowing dust can reduce visibility in the extreme as well. Operation during periods of extreme restricted visibility is not advised particularly in areas frequented by large commercial vessel traffic. When operation is essential during periods of restricted visibility standard navigation lights must be displayed. If the small work boat is not equipped with navigation lights it should not be used in these conditions. Also, proper horn or bell signals should be given as required by inland or international navigation rules for the size of vessel underway or anchored during periods of restricted visibility.

Flow around Fixed Structures

Fixed structures including bridges and dams are of particular concern to operators and crews working from boats. Boat operators should always familiarize themselves with any in-channel structure that could ultimately threaten the safety of their vessel and crew. Charts or maps of an area can provide valuable information related to the size and location of a structure across the channel. Regulatory agencies such as the State Department of Transportation, Corps of Engineers, Bureau of Reclamation, etc. can generally provide more detailed local information.

1. Bridges

Bridges may constitute major hazards to the boating public by restricting overhead clearance, generating extreme turbulence in the vicinity of piers located in the flow, or trapping debris and reducing the opening available between piers. During high stages, overhead clearance may be minimal for the passage of river traffic. In this case, if work must be done downstream of the bridge, one of two courses of action is necessary to protect the safety of vessel and crew: find an alternate location for launching the boat below the bridge; or call the bridge tender and request an opening of the lift or swing span if so equipped. The

following list of actions will help to ensure the safety of vessel and crew when working in the vicinity of bridges.

- Never work from a boat in close proximity to and upstream of an excessively submerged bridge structure.
- If it is necessary to work from a boat upstream from a bridge during high flow or anytime the structure presents a threat to safety, two sources of power (main engine plus auxiliary or twin engines) should be onboard and running in the event the backup is immediately needed.
- Always carry an anchor of adequate size and design securely attached to a length of chain equal to one boat length, and a length of nylon line equal to three to five times the anticipated depth, to stop the vessel and hold it against the flow. This equipment must be ready to deploy in an instant with the end of the line attached to the boat.
- Cutting devices adequate to clear any line that becomes fouled on the boat and threatens its safety must be at the ready. These should include but are not limited to garden loppers, bolt cutters, cable shears, and a hatchet or machete.
- Avoid working in close proximity to bridge piers if possible.
- If it is necessary to work close to a bridge pier, approach the pier in the tail-wake from downstream keeping a sharp lookout for debris caught on the pier. Carefully work along side the pier and inside the wake or eddy line generated by its upstream face.
- Never put the boat across the upstream face of the pier where it could become trapped by the force of the current.

Canals

Canals are normally highly regulated man-made waterways. Any operator using a boat to transit these conduits of flow must understand the flow system and its hazards. Typically the water in any given canal system is allocated for some specific use. Regulation may be seasonal or associated with storm runoff. The system may consist of a series of diversions conveying flow to various points of use, and may include flow through tunnels or large diameter pipes, in addition to open channel conveyances. In short, use of boats in these types of flow systems should be avoided if at all possible and only undertaken after the operator and crew have contacted the agency responsible for management and regulation to become familiar with potential hazards built into the system.

3. Dams

Dams come in many sizes and shapes, everything from huge lock-and-dam structures on the Mississippi River to small, “lowhead” dams. Although there are safety problems with larger dams, their size and design do not present the type of threat involved in the seemingly harmless lowhead dams.

Lowhead dams are generally small structures usually no more than 10 feet high, although some are as low as six inches. They have no gates or water-control devices; water flows constantly over them. Most were built to provide water for grain mills or early hydroelectric generators, and to control lake levels. Because of their small size, they do not appear to be dangerous, especially when viewed from a boat or canoe upstream. They can be pleasant places in the summer when water drops over them and gently flows downstream.

In the spring and during other periods of high runoff, however, the dams become very dangerous. Torrents of water pouring over the dam create a churning backwash or current. This “hydraulic,” as it is often called, is really a recirculating current. The roiling water takes any object — including a person — to the bottom of the stream, releases it to the surface, sucks it back to the face of the dam, and pushes it back to the bottom. This cycle can continue indefinitely.

In addition to the current, other hazards are inherent in most lowhead dams:

- Both faces of the dam usually consist of a vertical concrete abutment. Even if a victim struggles to the edge of the structure, chances are poor that he or she will have enough strength to climb the wall.
- Branches and other debris trapped in the hydraulic pose an additional hazard to the victim.
- Temperature of the water at times of high runoff is usually cold, which decreases survival time.

- Finally, air bubbles mixing in the water decrease its buoyancy by one-third. The victim has a hard time staying afloat, even with a personal flotation device (life jacket).

In sum, these factors combined with the hydraulic current create a nearly-perfect drowning machine.

Working near to these dams should be avoided when possible. However, should it be necessary to conduct work such as sediment sampling and sediment depth characterization from a boat near a lowhead dam, the following precautions should be taken to ensure the safety of workers:

- Work should **not** be conducted during times of high water flow;
- The boat should be secured to an anchor point on the upstream shore with rope of adequate breaking strength;
- The boat should then be released slowly downstream toward the dam by paying out rope from the bow;
- Once the boat has arrived at the sampling location near the dam, the rope should be tied securely to the bow; and
- Upon completion of sampling and sediment depth measurement, the boat should be advanced upstream to the anchor point by drawing the rope hand over hand into the boat.

Carbon Monoxide

Carbon monoxide hazards may occur when docked, or rafted with another boat, be aware of exhaust emissions from the other boat or your craft.

Seasickness

Seasickness is caused when the minute inner ear organs that enable a human to balance are disturbed by the motion of the boat swaying and pitching. This movement sets off alarm signals to the brain causing nausea, headache, dizziness, and sometimes vomiting. This condition can be intensified by the lack of fresh air and inactivity. Seasickness can severely impair one's ability to perform their job.

Fortunately, several remedies can be taken before setting sail. Over-the-counter medications may be obtained which help most people by sedating the balancing organs. Such medications can cause drowsiness and should be taken with care. Some people find special wrist bands effective. There are also stick-on patches that can be worn on the skin behind the ear, however these are obtained by doctor's prescription only.
You can often avoid seasickness by staying busy and keeping your mind occupied by taking over the helm or any other activity that will keep you above decks. Look at the distant horizon rather than the water close at hand. Take deep breaths and drink plenty of water. The worst thing that a person can do is go below decks with no land or horizon to look at. Reading or staring at an object will assuredly bring on the affects of seasickness.

If you are seasick and can't bear it anymore, lie down on your back with your eyes closed. This measure may reduce the affects.

References:

U.S. Coast Guard
http://www.uscgboating.org/

National Safe Boating Council
http://www.safeboatingcouncil.org/

A Primer: Working From Boats, Thomas K. Edwards. http://safetynet.smis.doi.gov/WkBoats/work_from_boat.htm

Florida Boating Safety Course
http://boat-ed.com/fl/course/p4-18_fl_info.htm#airboats

U.S. Fish and Wildlife Service, Inside Region 3, June/July, 2002.
http://www.fws.gov/midwest/InsideRegion3/documents/ir311-02.pdf

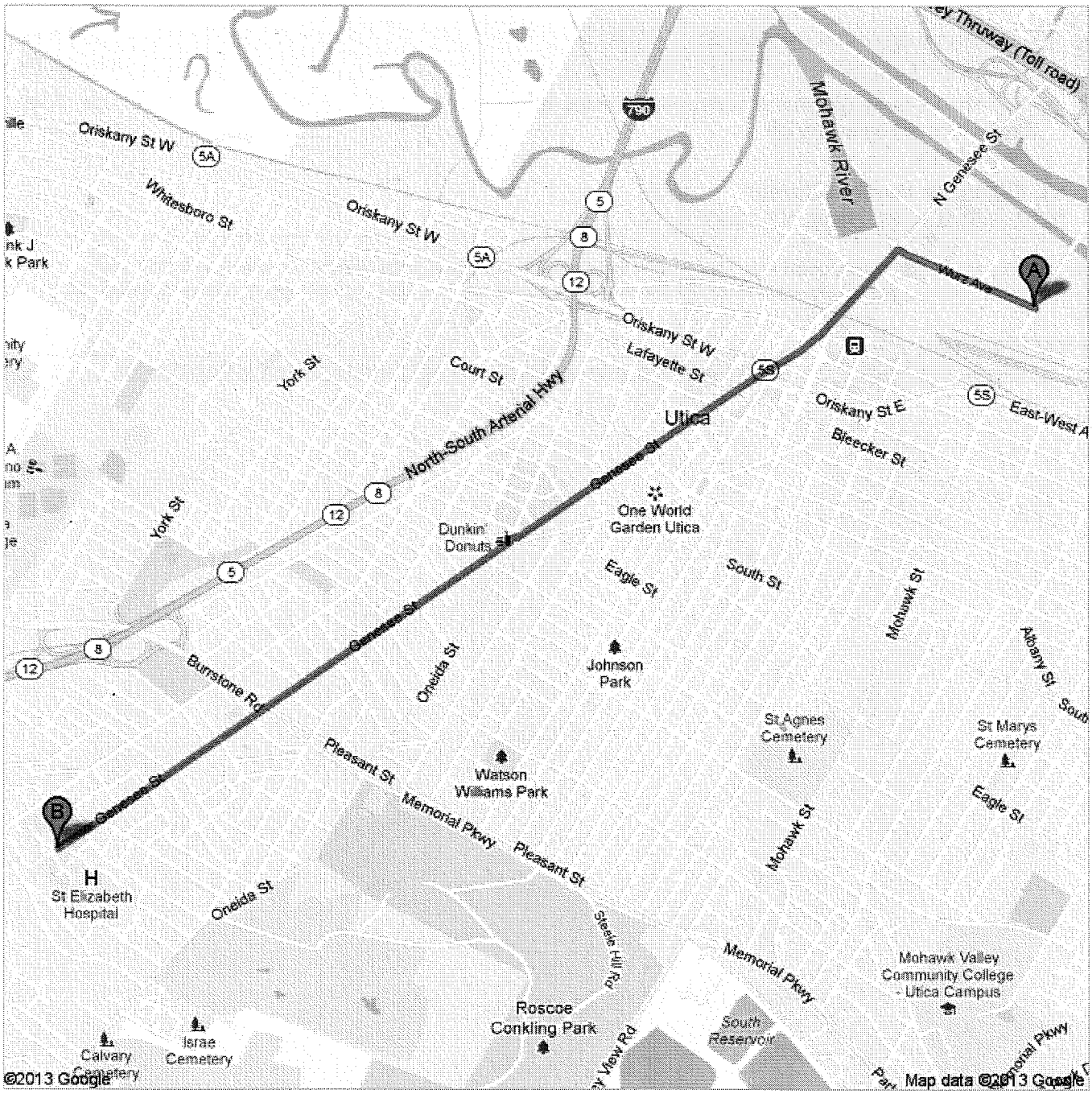
Commander Bob's Boating Safety Notebook
http://www.commanderbob.com/

Nautical Know How
http://www.boatsafe.com/nauticalknowhow/seasick.htm

The Drowning Machine
http://files.dnr.state.mn.us/education_safety/safety/boatwater/drowningmachine.pdf

Google

Directions to St. Elizabeth Medical Center
2209 Genesee St, Utica, NY 13501
3.3 mi – about **9 mins**



Sewage Plant Rd & Wurz Ave, Utica, NY 13502

1.	Head **northwest** on **Wurz Ave** toward **Railroad St** About 1 min	go 0.4 mi total 0.4 mi
2.	Take the 1st left onto **N Genesee St** About 5 mins	go 1.3 mi total 1.8 mi
3.	At the traffic circle, continue straight onto **Genesee St** Destination will be on the left About 4 mins	go 1.6 mi total 3.3 mi

St. Elizabeth Medical Center
2209 Genesee St, Utica, NY 13501

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

B

Site Specific Quality Assurance Project Plan

Site-Specific Quality Assurance Project Plan (QAPP) Remedial Investigation and Feasibility Study at the United Waste, Inc. Site Site No. 6-33-009 Utica, New York

February 2013

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway
Albany, New York 12233

NYSDEC Project Manager	Date	EEEPC Project Manager	Date
NYSDEC QA Officer	Date	EEEPC QA Officer	Date

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Appendix

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List of Acronyms

ADR	Automatic Data Review
ASP	Analytical Services Protocol
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EDD	electronic data deliverable
EEEPC	Ecology and Environment Engineering, P.C.
FS	feasibility study
NYSDEC	New York State Department of Environmental Conservation
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI	remedial investigation
SOW	Scope of Work

1 Project Management

This site-specific Quality Assurance Project Plan (QAPP) has been prepared by Ecology and Environment Engineering, P.C. (EEEPC) for the New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Remediation (DER), under Work Assignment No. D007617-18 received on December 6, 2012. The site-specific QAPP is for remedial investigation (RI)/feasibility study (FS) services off-site of the Universal Waste, Inc., site (Site No. 633009), located off of Sewage Plant Road in the City of Utica, Oneida County, New York. EEEPC personnel will implement this site-specific QAPP for all activities conducted for the Universal Waste Inc. site.

This QAPP has been prepared as part of the work plan for the project and is an addendum to the master NYSDEC QAPP (E & E 2011). This addendum documents changes, modifications, or new procedures and practices to be used that are applicable to activities anticipated under this investigation. This site-specific QAPP is formatted to address the four major sections listed in the master Quality Assurance Program Plan: Project Management, Data Generation and Acquisition, Assessment and Oversight, and Data Validation and Usability. The information provided only covers deviations or new procedures for implementing the project. Any subsection that is not changed is not included in this QAPP. General tables with site-specific information have been added to this QAPP for easier review of site-specific requirements.

1.1 Project Organization

The project team for this site is listed below on Table B1-1.

1.2 Problem Definition/Background

The problem and background for this work assignment are defined in Section 1 of the work plan.

Table B1-1 Project Organization, Universal Waste, Inc. Site

Key Team Member	Contact Name and Telephone
NYSDEC Project Manager	Parag Amin 518-402-9662
NYSDEC QA Officer	Tim LeBarron 518-402-9549
EEEPC Program Manager	David Albers 716-684-8060
EEEPC QA Officer	Marcia Meredith Galloway 716-684-8060
EEEPC Project Manager	George Lukert 716-684-8060
EEEPC Field Team Leader	Ben Cole 716-684-8060
EEEPC Project Chemist	Bryan Kroon 716-684-8060
Data Validation	Nancy Potak 802-533-9206
Laboratory	John Schove, Project Manager Test America 10 Hazelwood Drive Amherst, NY 14228 Phone: 716-691-2600 Fax: 716-691-7991 Email: John.Schove@testamerica.com

1.3 Project Description

The specific scope of work (SOW) for the current activities is defined in the work plan, Sections 1 and 2, and includes the following areas:

- Purpose;
- Direct and indirect measurements required;
- Applicable technical or regulatory quality assurance/quality control (QA/QC) standards or criteria;
- Any special resources (e.g., personnel or equipment) needed for the site;

1.4 Quality Objectives and Criteria

General quality objectives and performance criteria for NYSDEC projects are applicable to this project. These general objectives can be found in the master NYSDEC Quality Assurance Program Plan.

1.5 Special Training/Certification

There are no site-specific training requirements for this work assignment.

1.6 Documents and Records

Sample identification will deviate from the Master Quality Assurance Plan and will be project specific as follows:

- Soil boring samples: UW-SB01-Z1, where:
  - UW = Universal Waste
  - SB01 = soil boring 01
  - Z1 = sampling interval (Z1: 0-4', Z2: 4-8', Z3: 8-12', Z4: 12-16', and Z5: 16-20')

- Surface soil samples: UW-SS01
  - UW = Universal Waste
  - SS = surface soil
  - 01 = sequential sample number

- Sediment samples: UW-UT-01-01B-SD, where:
  - UW = Universal Waste
  - UT = Upland Transect (river transect will be designated at RT)
  - 01 = sequential transect number
  - 01B = sequential sample number (B: bank, C: channel). All samples numbers will begin from left descending bank.
  - SD = Sediment

  If applicable, "P" will be added to the sample designation if a ponar sampler is used.

- Groundwater samples: UW-MW06-GW-0313
  - UW = Universal Waste
  - MW06 = Monitoring well designation
  - GW = Groundwater
    0313 = month and year

- Surface water samples: UW-SW01-BG
  - UW = Universal Waste
  - SW01 = Surface water sequential sample number
  - BG = will be added if surface water sample is a background sample.

The laboratory will provide a hard-copy deliverable that contains the information specified for NYSDEC Analytical Services Protocol (ASP) Category B. Electronic data must be provided in accordance with the NYSDEC EQuIS EDD Version 3 released January 2012 and can be found at http://www.dec.ny.gov/chemical/62440.html. EEEPC will use only the electronic data for evaluation and reporting. The laboratory must certify that the electronic data match the hard copy reported for each package.

The following records and reports will be produced as part of this project:

- Work plan;

- Site-specific Health and Safety Plan;
- Site-specific QAPP;
- Field logbook;
- Geotechnical logbooks;
- Chain-of-custody form;
- Laboratory data package – Category B;
- Data usability summary report (DUSR);
- Draft report; and
- Final report.

2 Data Generation and Acquisition

The samples and analytical methods planned for this site are provided on Table 2-1 of the work plan. Table B2-1 lists all analyses that may be performed for this project. Laboratory target compounds, reporting limits, and current control limits have been entered into the ADR program. Printouts of these limits are provided in Attachment A for the soil and water methods listed on Table B2-1. All additional QC information pertaining to the methods can be found in NYSDEC's ASP (June 2000).

Table B2-1 Required Analytical Methods for the Universal Waste, Inc. Site

Method Number	Description
SW8260, 8270, Modified 8082, and 8082	Target Compound List (TCL) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), screening level analysis for polychlorinated biphenyls (PCBs) and polychlorinated biphenyls (PCBs)
SW6010,7470/71	Target Analyte List (TAL) Metals/Mercury
Lloyd Kahn	Total organic carbon
Investigation Derived Waste Parameters	
SW 1311	TCLP Extraction
SW 8260, 8270, 6010, 7470, 8081, and 8151	TCLP VOCs, SVOCs, metals, pesticides and herbicides

The collection of field QC samples follows the master Quality Assurance Program Plan and is summarized on Table B2-2.

Table B2-2 Field Quality Control Guidelines, NYSDEC Projects

QC Sample	Description
Field Duplicate	One per matrix per 20 samples for each analysis.
Field Equipment Blank	One per equipment set per day for each analysis. Only equipment sets that are subject to decontamination require equipment blanks. Dedicated or disposal equipment does not require an equipment blank.
Trip Blank	One per shipment for each cooler in which samples for VOC analysis are shipped. Trip blanks are analyzed for all VOC methods designated for samples. Trip blanks are shipped only for aqueous matrices.
Filter Blank	One per batch of filters used. Preserve with HNO_3 to pH<2 following collection

Key:
VOC = Volatile organic compound.

The laboratory QC sample requirements follow the master Quality Assurance Program Plan and are summarized on Table B2-3.

Table B2-3 Laboratory Quality Control Sample Guidelines, NYSDEC Projects

QC Sample	Description
MB	One per matrix per preparation batch for each analysis.
MSB	One per matrix per preparation batch for each analysis. The MSB must contain all target analytes of concern at the site or as specified by the CLP method.
Surrogate Spikes	All samples analyzed for organic methods.
MS/MSD	One per matrix per SDG for each analysis. The spike solution must contain a broad range of the analytes of concern at the site or as specified by the method. The overall frequency of MS/MSD on project samples must be at least one set per 20 samples.
MS/MD	One per matrix per SDG for TAL metals and general chemistry methods. The spike solution must contain a broad range of analytes of concern at the site or as specified by the method. The overall frequency of MS/MD on the project samples must be at least one set per 20 samples.
LCS/LCSD	One per matrix per SDG for each analysis. The spike solution must contain a broad range of analytes of concern at the site or as specified by the method. The overall frequency of LCS/LCSDon the project samples must be at least one set per 20 samples.

Key:
CLP = Contract Laboratory Program.
LCS/LCSD = Laboratory Control Sample/Laboratory Control Sample Duplicate
MB = Method Blank.
MS/MD = Matrix Spike/Matrix Duplicate.
MS/MSD = Matrix Spike/Matrix Spike Duplicate.
MSB = Matrix Spike Blank.
SDG = Sample Delivery Group.
TAL = Target Analyze List

3 Assessment and Oversight

EEEPC's assessment and oversight procedures for the project activities are the same as the master Quality Assurance Program Plan. There are no additional procedures to meet the quality objectives for these work assignment activities.

3.1 Assessment and Response Actions

Planned assessment activities for these work assignment activities are as follows:

Field Audits

No field audits are planned.

Field Inspections

The EEEPC project manager will conduct at least one site visit for the purpose of inspecting the activities of all personnel including subcontractors and subconsultants.

Laboratory Audits

A laboratory audit of the Chemtech Corporation was conducted in March 2005 by EEEPC to verify laboratory capabilities prior to contract award. No project-specific audits are planned.

3.2 Reports to Management

The reports to management are specified the same as in the master Quality Assurance Program Plan. No additional reports are required for this project.

4 Data Validation and Usability

EEEPC will implement the general procedures for data validation and usability described in the master Quality Assurance Program Plan for data validation activities.

4.1 Data Review, Validation, and Verification Requirements

There are no additional data review criteria for this project. The laboratory is responsible for reviewing data in accordance with their approved QA manual. These procedures are approved as part of the New York State certification process.

EEEPC will process all electronic data through EQuIS. Specifications for EDD are described above in Section 1.6. Sample analysis results for the site characterization will undergo electronic data processing and review for usability by a third party subcontractor to EEEPC. The data validator will determine any deviations from the Quality Control Program Plan limits and assign qualifiers based on guidelines identified in the master Quality Control Program Plan. Data for investigation-derived waste soil and water disposal will not be reviewed. The data reviews both hard copy and electronic will follow the NYSDEC Guidance for the Development of DUSRs, May 2010. EEEPC will review all DUSRs provided by the third party data validator.

4.2 Verification and Validation Methods

Data validation requirements are the same as specified in the master Quality Assurance Program Plan.

4.3 Reconciliation with User Requirements

The data assessment procedures listed in the master Quality Assurance Program Plan are applicable to this project. There are no additional data assessment procedures.

A Method Target Compounds, Reporting Limits, and Quality Control Limits

Method Description	Method Code
Polychlorinated Biphenyls (PCBs) by Gas Chromatog	8082 Modified (Medium level extracttion)

Analyte Description	CAS Number	RL - Limit	MDL - Limit	Units
PCB-1016	12674-11-2	0.25	0.0489	mg/Kg
PCB-1221	11104-28-2	0.25	0.0489	mg/Kg
PCB-1232	11141-16-5	0.25	0.0489	mg/Kg
PCB-1242	53469-21-9	0.25	0.0489	mg/Kg
PCB-1248	12672-29-6	0.25	0.0489	mg/Kg
PCB-1254	11097-69-1	0.25	0.117	mg/Kg
PCB-1260	11096-82-5	0.25	0.117	mg/Kg
PCB-1262	37324-23-5	0.25	0.117	mg/Kg
PCB-1268	11100-14-4	0.25	0.117	mg/Kg

C Citizen Participation Plan

Citizen Participation Plan Addendum
Universal Waste RI

The New York State Department of Environmental Conservation (NYSDEC) is committed to involving the public during environmental site characterization and related field work. This plan defines specific actions which will be implemented to inform the public of planned or on-going actions at the site and give the public an opportunity to comment and provide input regarding environmental activities at the site.

The following activities address these objectives as well as specific concerns expressed by the community.

Objective 1: Inform the community about the on-going environmental activities

Maintain a mailing list of interested members of the community and conduct direct mailing for notification and/or updates on key project events

NYSDEC has developed a preliminary mailing list of community members potentially interested in site activities. This list will be updated throughout the Remedial Investigation process as requests to be included on the mailing list are received. At the request of NYSDEC, EEEPC will conduct searches of publicly available information and databases to update the mailing list or identify additional potential stakeholders within the vicinity of the investigation area. EEEPC will use the mailing list to disseminate information on site activities, as requested by NYSDEC.

Mailings will be distributed at the request of NYSDEC to individual residences when key site related activities occur.

Provide notification of commencement of work

NYSDEC may prepare a mailing to residents announcing the commencement of field work to discuss the scope and time frame of the work being conducted. The text of the flyers will be prepared by NYSDEC and distributed by EEEPC.

Objective 2: Provide opportunities for community involvement

Provide notification of public availability sessions

Public availability sessions are meant to maintain contact with the community during periods between formal meetings and will continue as needed. NYSDEC will prepare flyers for distribution to nearby interested parties announcing the public availability sessions. These mailings will inform the residence of the location, date, time, and possible topics to be discussed. The text of the flyers will be prepared by NYSDEC and distributed by EEEPC.

In addition to the mailings, EEEPC will assist NYSDEC with the preparation of posters developed to summarize key findings and important information for display at the public availability sessions.

Conduct biannual public availability sessions

NYSDEC will conduct public availability sessions which are meant to inform the public during the on-going remediation activities. Information presented at these sessions will include updates on various projects and allow the department to answer questions directly, discuss the progress on the work and allow the public to comment and provide input. NYSDEC will provide notification of these public availability sessions through a mailing to residents and distribution of posters throughout the community as discussed above.

The location, date, and time of these availability session will be announced as that information becomes available.

Document Repository

EEEPC will establish a repository for project documents on behalf of NYSDEC. The repository will be established at the Utica Public Library. A copy final project documents including work plans, remedial investigations and feasibility studies will be kept in this location.

Revised Attachment 1 - Excel Mailing List Template (Site Contact List)

Site #: 63-3009

Site Name: Universal Waste, Inc | **List Last Updated:**

Current Occupant	Name, Title	Address 1	Address 2	Address 3	Street Address	City	State	Zip	Site Name (County)	tax number
	Utica Transit Authority	185 Leland Ave			Leland Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-33
	Clearview Acres Ltd Inc	Bradon, Manitoba Canada	Souhwest 6-12-26 W Rom2CO Virden,SW		Leland Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-32
	Clearview Acres Ltd Inc	Bradon, Manitoba Canada	Souhwest 6-12-26 W Rom2CO Virden,SW		Leland Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-36
	Clearview Acres Ltd Inc	Bradon, Manitoba Canada	Souhwest 6-12-26 W Rom2CO Virden,SW		Leland Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-37
	Clearview Acres, LTD	Bradon, Manitoba Canada	Souhwest 6-12-26 W Rom2CO Virden,SW		Mohawk Flts	Utica	NY		Universal Waste (Oneida)	319.009-1-73
	United Contractors Of Utica NY	1121 Kossuth Ave			Mohawk Flts	Utica	NY	13501	Universal Waste (Oneida)	319.005-1-35
	Clearview Acres Ltd	Bradon, Manitoba Canada	Souhwest 6-12-26 W Rom2CO Virden,SW		Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-38.1
	Harbor Point Mineral Prod, Inc				71 Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-38.2
	*no record in tax database				245 Genesee ST. N	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-41
	Empire Recycling Operations				Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-39
	ESK Realty, LLC	P.O. Box 514			Wurz Ave	Utica	NY	13503	Universal Waste (Oneida)	319.005-1-40.1
	Nathan Steel Corp				36 Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-40.2
	Oneida County				800 Park Ave	Utica	NY	13501	Universal Waste (Oneida)	319.005-1-30
	Utica Transit Authority	185 Leland Ave			Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-29.1
	ECOO Realty Corporation				75 Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-29.2
	ECOO Realty Corporation				75 Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-28
	Harbor Point Mineral Products				71 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-25
	City Of Utica	1 Kennedy Plaza			Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	319.005-1-24
	Legro Richard H				51 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-23
	Papelino Charles				136 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-15
	City Of Utica				201 Leland Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-31
	Buckeye Terminals, LLC				37 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-22
	Utica Urban Renewal Agency				69 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-27
	Csw Petroleum Corp				55 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-26.1+26.2
	City Of Utica	1 Kennedy Plaza			17, 35 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-18.1
	Utica Regional Market LLC				9 Wurz Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-18.2
	Marsh Enterprises, LLC				170 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-19
	New York Transit Co Inc				Frederick St	Utica	NY		Universal Waste (Oneida)	319.005-1-21
	Ganesh Group, LLC				10 Frederick St	Utica	NY		Universal Waste (Oneida)	319.005-1-20
	Two Frederick Street Llc				2 Frederick St	Utica	NY		Universal Waste (Oneida)	319.005-1-1
	Two Frederick Street, LLC				4 Frederick St	Utica	NY		Universal Waste (Oneida)	319.005-1-2
	Kinsella Robert J				6 Frederick St	Utica	NY		Universal Waste (Oneida)	319.005-1-3
	Two Frederick Street, LLC				188 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-4
	*no record in tax database					Utica	NY		Universal Waste (Oneida)	319.005-1-5
	Ganesh Group, LLC				184 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-6
	GILLS 05 Inc				180 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-7.1
	166 N Genesee Street, LLC				166 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-9
	Hess Realty Corporation				148 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-12
	Utica Hotel Enterprises, LLC				150 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-11
	Papelino Charles				138 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-14
	WWI Properties				112 Genesee St N	Utica	NY		Universal Waste (Oneida)	319.005-1-16
	*no record in tax database					Utica	NY		Universal Waste (Oneida)	319.010-1-3
	N Y C & H R R R Co	?			Broad St	Utica	NY		Universal Waste (Oneida)	319.014-1-17
	*no record in tax database					Utica	NY		Universal Waste (Oneida)	319.010-1-4.1

Revised Attachment 1 - Excel Mailing List Template (Site Contact List)

Site #: 63-3009

Site Name: Universal Waste, Inc | **List Last Updated:**

Current Occupant	Name, Title	Address 1	Address 2	Address 3	Street Address	City	State	Zip	Site Name (County)	tax number
	*no record in tax database					Utica	NY		Universal Waste (Oneida)	319.010-1-4.2
	City of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.010-1-1
	American Christian Credit Union				215 Leland Ave	Utica	NY		Universal Waste (Oneida)	307.017-1-15
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-7
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-2
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-3
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-4
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-5
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-6
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY	13502	Universal Waste (Oneida)	319.006-1-8
	Weaver Frederick G	?			Leland Ave	Utica	NY		Universal Waste (Oneida)	319.005-1-34
	Oneida County	800 Park Ave			MOHAWK Flts	Utica	NY		Universal Waste (Oneida)	319.011-1-2.1
	Oneida County	800 Park Ave			MOHAWK Flts	Utica	NY		Universal Waste (Oneida)	319.011-1-2.2
	Oneida-Herkimer Solid Waste	1600 Genesee St.			Leland Ave Ext	Utica	NY	13502	Universal Waste (Oneida)	319.011-1-2.3
	City Of Utica	1 Kennedy Plaza			Mohawk Flts	Utica	NY		Universal Waste (Oneida)	319.007-1-5
	Southside Land Associates, LLC	?			Wurz Ave	Utica	NY		Universal Waste (Oneida)	318.008-1-31.3
	SAMCIN, LLC				110 Genesee St N	Utica	NY		Universal Waste (Oneida)	318.008-1-31.2
	Empire Recycling	245 Genesse St.			Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	318.008-1-36.2
	Empire Recycl'g Operations Inc	245 Genesse St.			Wurz Ave	Utica	NY	13502	Universal Waste (Oneida)	318.008-1-36.1
	Genesee Business Center Inc				9 Lee St	Utica	NY		Universal Waste (Oneida)	318.008-1-37.2
	Empire Recycling Operations				58, 60 Genesee St N	Utica	NY		Universal Waste (Oneida)	318.008-1-33
	Empire Recycling Operations				56 Genesee St N	Utica	NY		Universal Waste (Oneida)	318.008-1-34
	Empire Recycl'g Operations Inc				Lee St	Utica	NY		Universal Waste (Oneida)	318.008-1-35
	Observer Dispatch				221 Oriskany Blvd	Utica	NY	13501	Universal Waste (Oneida)	
	WKTV - TV Channel 2	Smith Media LLC	P.O. Box 2			Utica	NY	13503	Universal Waste (Oneida)	
	WUTR TV	News Director			5956 Smith Hill Road	Utica	NY	13502	Universal Waste (Oneida)	
	NewsRadio 950 WIBX				9418 River Rd	Marcy	NY	13403	Universal Waste (Oneida)	
	Robert Palmieri, Mayor	Office of the Mayor			1 Kennedy Plaza	Utica	NY	13502	Universal Waste (Oneida)	
	Anthony J Picente, Jr., County Executive	Oneida County Executive	Oneida County Office Building		800 Park Avenue	Utica	NY	13501	Universal Waste (Oneida)	
	Emil R. Paparella, County Legislator				613 Locust Drive	Utica	NY	13502	Universal Waste (Oneida)	

D Community Air Monitoring Plan

Community Air Monitoring Plan
Universal Waste RI
Work Assignment Number D007617-18
Utica, Oneida County, New York

The Community Air Monitoring Plan (CAMP) for this site requires real-time monitoring for particulates (i.e., dust) and volatile organic compounds (VOCs) at the downwind perimeter of the work area when certain activities are in progress at the site. 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.

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

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.

- 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.

- 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.

All readings must be recorded in the health and safety field notebook and be available for State (DEC) personnel to review.

Volatile Organic Compound Monitoring Response Levels, and Actions
Periodic monitoring for VOCs will be required during both intrusive and non-intrusive activities (such as the collection of groundwater samples from 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, monitoring during well baling/purging, and taking a reading prior to leaving a sample location.

For intrusive activities such as drilling and direct push sampling, VOCs must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) at intervals of no more than 30 minutes. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. VOC monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. For example, for total organic vapor concentrations, a photo-ionization detector (PID) should be used. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate.

VOC Response Levels

- If the sustained ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds **1 part per million** (ppm) above background, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 1 ppm over background, work activities can resume with **continuous** monitoring.

- If sustained total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 1 ppm over background but less than 5 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 100 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 1 ppm.

- If the organic vapor level is above 5 ppm at the perimeter of the work area, activities must be shutdown and mitigative measures implemented before work can continue.

All readings must be recorded in the health and safety field notebook and be available for State (DEC) personnel to review.

E

Proposed Sediment Core Coordinates

Universal Waste Inc.

Sediment Core Coordinates

tbl- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Feb_22\Sediment_Cores_022213.xlsx

shp- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Jan_22\Sediment_Cores_012313.shp

Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
RT 30	43.10845472610	-75.21248889690
RT 30	43.10857264820	-75.21236017220
RT 30	43.10868730100	-75.21223501550
RT 31	43.10824500080	-75.21209042200
RT 31	43.10837861920	-75.21195646090
RT 31	43.10850010750	-75.21183466040
RT 32	43.10800021450	-75.21165830630
RT 32	43.10811480440	-75.21154725760
RT 32	43.10826405260	-75.21140262100
RT 33	43.10762827400	-75.21102423000
RT 33	43.10777550470	-75.21087457190
RT 33	43.10790725850	-75.21074064520
RT 34	43.10743636770	-75.21061156490
RT 34	43.10754994160	-75.21049530100
RT 34	43.10768566980	-75.21035635740
RT 35	43.10718950310	-75.21017997620
RT 35	43.10731696410	-75.21005311860
RT 35	43.10745575940	-75.20991497950
RT 36	43.10695453280	-75.20966487660
RT 36	43.10707199250	-75.20954355340
RT 36	43.10720132500	-75.20940996630
RT 37	43.10669569710	-75.20922379900
RT 37	43.10685316380	-75.20907574570
RT 37	43.10699049030	-75.20894662790
RT 38	43.10650066810	-75.20882488220
RT 38	43.10663857130	-75.20869003490
RT 38	43.10679729150	-75.20853483100
RT 39	43.10626278020	-75.20841682430
RT 39	43.10645796320	-75.20820953940
RT 39	43.10660743860	-75.20805079490
RT 40	43.10581341290	-75.20774382910
RT 40	43.10600226200	-75.20758215320
RT 40	43.10624996540	-75.20737008940
RT 40	43.10649493850	-75.20716036110
RT 41	43.10565150190	-75.20743033580
RT 41	43.10585171480	-75.20722924850
RT 41	43.10606130660	-75.20701873960
RT 41	43.10627805470	-75.20680104110

Universal Waste Inc.

Sediment Core Coordinates

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shp- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Jan_22\Sediment_Cores_012313.shp

Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
RT 42	43.10541581030	-75.20716604450
RT 42	43.10554389060	-75.20701816940
RT 42	43.10569675510	-75.20684167850
RT 42	43.10586464990	-75.20664783290
RT 43	43.10523160800	-75.20683035400
RT 43	43.10535114910	-75.20669132080
RT 43	43.10550144940	-75.20651651190
RT 44	43.10501504260	-75.20666559950
RT 44	43.10505425490	-75.20650182020
RT 44	43.10509632910	-75.20632608600
RT 45	43.10471129100	-75.20669353950
RT 45	43.10472578570	-75.20646922410
RT 45	43.10474092390	-75.20623494250
RT 46	43.10447207440	-75.20666222250
RT 46	43.10446363650	-75.20645112950
RT 46	43.10445714890	-75.20628883350
RT 47	43.10418556690	-75.20675225020
RT 47	43.10416832010	-75.20658455910
RT 47	43.10415040850	-75.20641040680
RT 48	43.10390599200	-75.20686226820
RT 48	43.10389214750	-75.20667109490
RT 48	43.10388042780	-75.20650926540
RT 49	43.10362049840	-75.20693451250
RT 49	43.10362851870	-75.20670996700
RT 49	43.10363535330	-75.20651860590
RT 50	43.10332291220	-75.20688717290
RT 50	43.10334742630	-75.20671942030
RT 50	43.10337792370	-75.20651072150
RT 51	43.10305026280	-75.20666924540
RT 51	43.10312013780	-75.20654257070
RT 51	43.10319001270	-75.20641589570
RT 52	43.10282369020	-75.20633166610
RT 52	43.10288710280	-75.20622051540
RT 52	43.10295336370	-75.20610437130
RT 53	43.10262004270	-75.20608499610
RT 53	43.10269343180	-75.20594586390
RT 53	43.10276996770	-75.20580076550
RT 54	43.10239489690	-75.20585519620
RT 54	43.10247854450	-75.20570117150
RT 54	43.10256748990	-75.20553739080

Universal Waste Inc.

Sediment Core Coordinates

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Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
RT 55	43.10205475910	-75.20578590320
RT 55	43.10219296860	-75.20552020280
RT 55	43.10236461710	-75.20519021400
RT 56	43.10195983860	-75.20525471550
RT 56	43.10211739910	-75.20515954780
RT 56	43.10228796530	-75.20505652390
RT 57	43.10184409240	-75.20493878180
RT 57	43.10198295720	-75.20485962880
RT 57	43.10215869900	-75.20475945530
RT 58	43.10170195790	-75.20460718990
RT 58	43.10186080070	-75.20452498150
RT 58	43.10201394570	-75.20444572160
RT 59	43.10164576750	-75.20409490380
RT 59	43.10176951710	-75.20407250240
RT 59	43.10189432890	-75.20404990860
RT 60	43.10164582830	-75.20370486660
RT 60	43.10175921270	-75.20369050040
RT 60	43.10185173180	-75.20367877780
RT 61	43.10160837860	-75.20336442650
RT 61	43.10174373460	-75.20335903170
RT 61	43.10185980610	-75.20335440550
RT 62	43.10160141130	-75.20298429840
RT 62	43.10173028310	-75.20298772700
RT 62	43.10187017940	-75.20299144880
UT 16	43.10249782550	-75.20600875670
UT 16	43.10237475110	-75.20597895240
UT 16	43.10224200670	-75.20594680640
UT 15	43.10227024480	-75.20625941800
UT 14	43.10234079520	-75.20655634870
UT 13	43.10243970740	-75.20690993250
UT 12	43.10247369670	-75.20732209900
UT 11	43.10258150990	-75.20765786590
UT 10	43.10267549390	-75.20802177610
UT 09	43.10274087880	-75.20850786570
UT 09	43.10284549570	-75.20841296550
UT 08	43.10283090180	-75.20906247540
UT 08	43.10314628570	-75.20833326080
UT 08	43.10305103070	-75.20855350640
UT 08	43.10293850220	-75.20881368930
UT 09	43.10301182150	-75.20826208700

Universal Waste Inc.

Sediment Core Coordinates

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shp- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Jan_22\Sediment_Cores_012313.shp

Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
UT 10	43.10293072620	-75.20795511740
UT 10	43.10279962130	-75.20798935800
UT 11	43.10290480530	-75.20754679060
UT 11	43.10275488270	-75.20759830000
UT 12	43.10280527130	-75.20717783990
UT 12	43.10262636020	-75.20725567940
UT 13	43.10270841180	-75.20679809300
UT 13	43.10254763020	-75.20686501330
UT 14	43.10256158890	-75.20647228540
UT 14	43.10245478380	-75.20651294960
UT 15	43.10255577710	-75.20623676550
UT 15	43.10240335370	-75.20624885790
UT 07	43.10306178720	-75.20919951400
UT 07	43.10317206790	-75.20892761170
UT 07	43.10328113550	-75.20865869770
UT 07	43.10338274200	-75.20840817760
UT 06	43.10336586510	-75.20914014930
UT 06	43.10345270720	-75.20890928450
UT 06	43.10355722250	-75.20863143370
UT 05	43.10362448740	-75.20922692760
UT 05	43.10369214210	-75.20904356830
UT 05	43.10376029890	-75.20885884730
UT 04	43.10389555130	-75.20921336690
UT 04	43.10398565460	-75.20911067140
UT 04	43.10408197630	-75.20900088790
UT 03	43.10402887750	-75.20945860080
UT 03	43.10410676780	-75.20938462350
UT 03	43.10419137930	-75.20930426230
UT 02	43.10413175280	-75.20979316060
UT 02	43.10423084840	-75.20973284720
UT 02	43.10433272930	-75.20967083820
UT 01	43.10421006200	-75.21011645310
UT 01	43.10431669420	-75.21006314760
UT 01	43.10441425900	-75.21001437480
UT 17	43.10409490840	-75.20872228500
UT 17	43.10397290510	-75.20872821910
UT 17	43.10385387610	-75.20873400840
UT 18	43.10408793180	-75.20839691600
UT 18	43.10395998420	-75.20840156240
UT 18	43.10386777330	-75.20840491110

Universal Waste Inc.

Sediment Core Coordinates

tbl- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Feb_22\Sediment_Cores_022213.xlsx

shp- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Jan_22\Sediment_Cores_012313.shp

Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
UT 19	43.10410491880	-75.20808672880
UT 19	43.10397490140	-75.20807302570
UT 19	43.10385490330	-75.20806037860
UT 20	43.10549383130	-75.20744265650
UT 20	43.10537014810	-75.20722022390
UT 20	43.10522605110	-75.20696108140
UT 21	43.10528744200	-75.20760980410
UT 21	43.10519124950	-75.20742606690
UT 21	43.10507719000	-75.20720820310
UT 22	43.10504738470	-75.20770050570
UT 22	43.10497672690	-75.20755308760
UT 22	43.10488553600	-75.20736283100
UT 23	43.10472841830	-75.20783339810
UT 23	43.10469542820	-75.20765992730
UT 23	43.10467093800	-75.20753115190
UT 24	43.10445324410	-75.20789433920
UT 24	43.10442699130	-75.20774948430
UT 24	43.10439058910	-75.20754862940
UT 25	43.10416097730	-75.20801289560
UT 25	43.10413515010	-75.20781542550
UT 25	43.10410852130	-75.20761182950
UT 26	43.10380015740	-75.20796409190
UT 26	43.10386984440	-75.20779825840
UT 26	43.10395355660	-75.20759904790
UT 27	43.10356507340	-75.20772557540
UT 27	43.10364178500	-75.20758313470
UT 27	43.10372232750	-75.20743358010
UT 28	43.10333828280	-75.20743405610
UT 28	43.10341827460	-75.20733396510
UT 28	43.10352012860	-75.20720651820
UT 29	43.10313388530	-75.20702421110
UT 29	43.10324649770	-75.20701399540
UT 29	43.10337179640	-75.20700262880
RT 63	43.10157055370	-75.20259820670
RT 63	43.10175404900	-75.20259579800
RT 63	43.10188982740	-75.20259401560
RT 64	43.10158867720	-75.20212650660
RT 64	43.10174844470	-75.20212779530
RT 64	43.10190785720	-75.20212908120
RT 65	43.10158026650	-75.20182441830

Universal Waste Inc.

Sediment Core Coordinates

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shp- L:\Buffalo\Universal_Waste\Data\Project_Features\2013_Jan_22\Sediment_Cores_012313.shp

Updated JBS 2/22/13

Transect	Latitude (decimal degrees)	Longitude (decimal degrees)
RT 65	43.10175225590	-75.20184602410
RT 65	43.10190944150	-75.20186577030