Remedial Design Work Plan

Former Ozone Industries, Inc. Site
Queens, New York

NYSDEC Site # 2-41-033

Order on Consent Index # W2-0922-02-05 (with Endzone, Inc.)

AECOM Environment
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1.0 Remedial Design Work Plan

1.1 Introduction

On behalf of Endzone, Inc., AECOM Environment (AECOM) is providing this Remedial Design Work Plan for completing the Remedial Design/Remedial Action Work Plan for the Former Ozone Industries, Inc. site that is comprised of a set of bays of approximately 12,000 square feet (Bays 8 – 15) (the "site") within the city block bounded by 99th and 100th Streets to the west and east, and by 101st and 103rd Avenues to the north and south. The Remedial Investigation (RI) and Feasibility Study (FS) Report for the site was completed by AECOM (dated June 2009) and was approved by the New York State Department of Environmental Conservation (NYSDEC) in a letter dated October 14, 2009. The Record of Decision (ROD) was issued by NYSDEC in February 2010.

The site is located beneath an abandoned elevated railroad. Both the site and the abandoned railroad are owned by the City of New York. There are a total of 28 bays located beneath the elevated railroad. Thirteen bays are located south of the site and 7 bays are located to the north of the site. The general area surrounding the site includes manufacturing, commercial and limited residential properties.

The selected remedy for the site as described in the RI/FS Report and ROD is meant to remediate or mitigate volatile organic compound (VOC) impacts to soil, groundwater and vapor. Remediation goals are outlined in Section 6 of the ROD. The proposed remedial alternative for this site (Alternative 3 Combination of Preferred Remedies in All Media as documented in the RI /FS Report) consists of:

- Excavation of as much as practical of the shallow soils beneath Bays 8 through 15;
- Replacement of excavated shallow soils with "clean fill";
- Construction of sub-slab depressurization system (SSD) beneath Bays 8 through 15;
- Construction of soil vapor extraction system for deeper soils and groundwater vapor control;
- Implement institutional controls and a Site Management Plan; and
- Off-site vapor investigation is also proposed, if conditions warrant and if access is granted. Additional action in off-site areas such as installation of SSD systems may be taken.

The following sections include the outline for the Remedial Design/Remedial Action Work Plan that will provide the details, plans and specifications for the proposed remedy. The first section of the Remedial Design/Remedial Action Work Plan will be an introduction providing site background information.

1.2 Additional Investigations

Currently, there is the potential to complete further assessment or characterization of the sump and its vicinity in Bay 12 by Endzone or others. Results of the assessment work or a proposal for the work will be provided in the Remedial Design/Remedial Action Work Plan, if conducted by Endzone.

1.3 Design Scope

The following sections summarize the expected steps necessary for completion of the final design.

1.3.1 General Project Documents for Construction Activities

The following procedural documents have been identified as necessary and will be developed early in the design process and are expected to cover all design, construction and operation and monitoring activities associated with the project (general requirements for these documents are provided in bullet form).

- Site Specific Health and Safety Plan HASP:
  - Compliant with OSHA 1910.120;
  - Certified by a licensed Industrial Hygienist;
  - Identifies project organizational chart, key personnel, and provides contact list of involved parties;
  - Identify a Health and Safety Officer, who has the authority to enforce the HASP safety rules at the site;
  - Decontamination procedures (people and equipment), disposal of decontamination water; and
  - Include site specific MSDS data sheets.

- Air Quality Control Plan:
  - Compliant with regulatory requirements for NYSDOH Generic Community Air Monitoring Plan (CAMP);
  - Will cover fugitive dust suppression, per NYSDEC TAGM 4031;
  - Will include daily air monitoring log requirements;
  - Will include provisions for odor control/suppression for nuisance odors; and
  - Monitoring Equipment Calibration (dust, VOCs), PID calibration for TCE.

- Quality Assurance Project Plan (QAPP):
  - Will provide specific protocols for sample collection, handling, and storage, chain-of-custody, and laboratory and field analyses, and guidance for completing Data Usability Summary Reports (DUSR).

- Sampling Plan:
  - Specify sampling and testing methods and frequencies and who is responsible for them;
  - Post-excavation (end-point) sampling, how many, where, what depth, what to sample for, how reported;
  - Backfill “clean source” sampling;
  - Soil vapor sampling;
  - Groundwater sampling procedures; and
  - Ambient air monitoring.

- Storm Water Pollution Prevention Plan:
  - Per NYC storm water protection regulation.

Traffic Control Plan and / or a Community and Environmental Response Plan (CERP) will also be completed, if applicable.

1.3.2 Soil Excavation Design Requirements

A design will be developed in order to complete the proposed excavation activities. The design shall at a minimum include the following:

- Soils/Material Management Plan:
  - Disposal details for off-site permitted disposal facilities;
  - Specify that off-site disposal be by a licensed hauler properly manifested and taken to a licensed waste disposal facility;
  - Contaminated materials removal;
  - Hazardous materials, waste manifests requirements; and
  - Non-hazardous materials, bill of lading requirements.

- Mobilization:
  - Mobilization/demobilization/site preparation;
  - On-site and off-site utility clearance;
  - Project Layout map, project office (field trailer), staging, decontamination pad, hauling routes, air monitoring stations, drainage control, and access/egress to site;
  - Site security, site controls (sign in/sign out), nuisance controls (noise);
  - Provisions for maintenance and protection of traffic during construction (keep streets clean, traffic control, truck traffic, barricades); and
  - Truck/equipment decontamination.

- Demolition:
  - Removal of debris, floors in Bays 8-15, removal of interior wall partitions;
  - C&D Disposal facility requirements; and
  - Recycling of materials (recycled steel, concrete).

- Soil Excavation:
  - Site map showing expected limits of excavation;
  - Soil accessibility expectations/limitations;
  - Expected load summaries and soil volumes;
  - Requirements for structural support and shoring; and
  - Requirements for excavation base and sidewall/confirmatory sampling.

- Backfill:
  - Soil specification, compaction specification for backfilling;
  - Backfill source(s) per NYSDEC clean backfill requirements from NYSDEC permitted borrow pit; and
  - QAQC requirements for clean fill certification.

1.3.3 SVE and SSD Systems

Separate designs will also be developed for the purchase and installation of the SVE and SSDS systems. The designs will provide the following details.

- Final development of SVE/SSDS system conceptual design:
  - Individual SVE well vacuum/flow and design radius of influence;
  - Individual SSDS lateral vacuum/flow design and area of influence;
  - Final proposed SVE/SSDS treatment areas, well and lateral layouts and well/lateral specifications;
  - Final proposed location for SVE/SSDS system equipment; and
  - Final proposed design specifications for subsurface and above grade SVE/SSDS piping systems.

- Performance Based Equipment Specifications:
  - Expected Vacuum/Flow requirements for the system's equipment (to be developed by AECOM based on industry standards, site requirements regarding time to completion, pilot testing activities and other site constraints);
  - Requirements for system piping/influent manifold and individual sampling location to be specified;
  - Requirements for system remote monitoring capabilities and system control panel(s) to be specified; and
  - Provisions for soundproofing as necessary to meet local applicable regulations,

- Off gas treatment Requirements:
  - Off-gas treatment evaluation – no treatment, carbon or Cat/ox;
  - Stack size, stack location stack height;
  - Sampling of air discharge and frequency, and reporting; and
  - Expected maintenance schedule.

- Electrical Design and Specifications:
  - Requirements for new site specific power drop; and
  - Requirements for connection of vendor provided SVE/SSDS equipment to the sites electrical power.

- SVE/SSDS system operation and maintenance requirements:
  - Description of SVE/SSDS shake-down phase, performance testing period (VOC analysis);
  - SVE/SSDS system O&M requirements;
  - Requirements for operator training;
  - Sampling port locations, and required data collection/sampling;
  - Throttling valves locations and expectations to regulate and optimize air flow;
  - Vapor/water separator operation requirements;
  - Vacuum blower, maintenance and operation requirements;
  - Details associated with the power supply to SVE/SSDS systems; and
  - Details regarding expected monthly, quarterly and yearly documentation of system operation and reporting.

1.3.4 Site Restoration

A design will be developed in order to complete all proposed Site Restoration Activities. The design will at a minimum detail the following.

- Replacement of floors and bay entranceways (floor detail/material specification).
- Detail of replacement of interior walls.
- Details and location of electrical utilities to service SVE and SSDS systems.

1.3.5 Sampling Plan and Institutional Controls

The final implementation of the selected remedy includes the incorporation of long term monitoring of site groundwater concentrations, and the development of institutional controls (land use restrictions). A written plan will be developed which details the following activities.

- Groundwater Monitoring Plan:
  - Detail groundwater monitoring program including well locations, specific laboratory method requirements, and sampling frequencies;
  - Acceptable disposal procedures for groundwater;
  - Comparison of Groundwater to SCGs; and
  - Requirements for re-evaluation or modification of the program.

- Land use restrictions:
  - Detailed boundaries for proposed restrictions;
  - Expected boundary specific restrictions; and
  - Criteria for potential re-evaluation of proposed restrictions.

1.3.6 Required Documents

The following documents will be developed in order to document the design process, and receive final approval for implementation from NYSDEC.

- Remedial Design/Remedial Action Work Plan, will include:
  - HASP;
  - Air Quality Control Plan;
  - QAPP;
  - Sampling Plan;
  - Stormwater Pollution Prevention Plan; and
  - Design documentation as discussed in sections 1.3.2 through 1.3.5 above.

- Environmental Easement as discussed in section 1.6.
- Biddable Construction Documents.
- A full set of design drawings as discussed in section 1.7.

All documents and drawings will be sealed as necessary by a NY State Professional Engineer.

1.4 Permits and Other Authorizations

The Following permits and authorizations are expected to be required prior to commencing the field work associated with this project. These authorizations will be obtained as soon as possible following approval of the Remedial Design/Remedial Action Work Plan.

- Site Access from all affected Owners and Occupants.
- Call before you dig utility clearance.
- Independent party utility clearance.
- Lead and Asbestos survey clearance and abatement if necessary.
- Construction Permit (NYC).
- Building Permit (NYC).
- Electrical Permit (NYC).
- Road Opening Permit (NYC).
- Traffic Details.

The systems will be designed to meet specific substantive NYSDEC air requirements. Therefore the projected system is expected to be exempt from permitting with regards to off gas from the SVE and SSDS systems.

1.5 Schedule of Submissions

The following Schedule is proposed based on the expectation that NYSDEC will approve this RDWP by February 1, 2011 and that access to the site will be granted by the City of New York on or about the same date. Otherwise, if access is not granted based upon this assumption, the design work will proceed up to a point of approximately 70% or 80% complete by about April 4, 2011, and then will be finalized once access is granted, shifting the proposed schedule out.

- Remedial Design/Remedial Action Work Plan Submittal – April 4, 2011.
- NYSDEC Approval of RD/RAWP – May 31, 2011.
- Biddable Construction Specifications and Design Drawings – April 4, 2011.
- Contractor Selection and Procurement – July 29, 2011.
- Obtain All Necessary Permits – TBD.
- Begin Construction – TBD.
- Monthly Progress Reports (on-going).
- Project Meetings – TBD.

1.6 Post-Construction Submissions

Following Completion of Construction the following documents will be completed and submitted as necessary.

- Site Management Plan and or Operation Monitoring Work Plan.
- Final Environmental Easement.
- Final Engineers Report (FER) including, as build documentation, and Certificate of Completion (COC).

1.7 Design Drawings

The following design drawings are expected to be completed during development of the Remedial Design/Remedial Action Work Plan. The drawing set will function as a living independent document and will be referenced as needed in the other document submittals. Drawing sets are expected to be issued for 100 % design, for bid, for construction, and then as a final as-built submittal. The following drawings are expected to be included.

- Site Location Map.
- Site Plan – Current Conditions.
- Traffic control – site set-up Plan.
- Demolition Plan.
- Extent of Soil Excavation (vertical/horizontal).
- Vertical/Horizontal End-Point Soil Sample Locations.
- SVE Equipment Layout Plan (SVE well locations, piping, headers, valving, mechanical equipment location, exhaust vent pipe location).

- Conceptual SVE Radius of Influence Plan.
- SVE Well Head Construction Detail.
- SVE System Process & Instrumentation Diagram.
- SSDS Plan: Plan of piping layout, headers, vent/stack pipe location/height, piping schedule (size/material), location of fan/controls.
- SSDS Cross Section Detail (backfill/piping/floor).
- One Line Electrical Drawing.
- Monitoring Well Locations/Groundwater Sampling Locations.

1.8 Citizen Participation

The Remedial Design/Remedial Action Work Plan will specify the required Fact Sheets and any procedures for addressing community inquiries.