June 11, 2010

INTERIM REMEDIAL MEASURE (IRM) WORK PLAN FOR THE PROPOSED MATERIAL STORAGE WAREHOUSE CONSTRUCTION AREA IN OPERABLE UNIT 4

Amtrak - Sunnyside Yard
Queens, New York

Prepared for:

NATIONAL RAILROAD PASSENGER CORPORATION
Washington, D.C. 20002

Remedial Engineering, P.C.
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CERTIFICATION

I Charles J. McGuckin certify that I am currently a NYS registered professional engineer and that this Interim Remedial Measure (IRM) Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and the Record of Decision (ROD) for the Amtrak Sunnyside Yard Site Operable Unit 4.

069509	6/11/10	Charles J. McGuckin
NYS Professional Engineer #	Date	Signature

STATE OF NEW YORK · CHARLES J. McGUCKIN · LICENSED PROFESSIONAL ENGINEER · NO. 069509

1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates) and Remedial Engineering, P.C. (Remedial Engineering) have prepared this Interim Remedial Measure (IRM) Work Plan on behalf of the National Railroad Passenger Corporation (Amtrak) to detail the scope of work for the excavation and offsite disposal of contaminated unsaturated soils from two locations within the proposed material storage warehouse construction footprint located in Operable Unit 4 (OU-4) at Sunnyside Yard (Yard), Queens, New York (Figure 1). The Yard is listed as Class II Site in the New York State Department of Environmental Conservation (NYSDEC) Registry of Inactive Hazardous Waste Disposal Sites and has been divided into six OUs (Figure 2). OU-4 is defined as soil above the water table (unsaturated) throughout the Yard (excluding areas defined as OU-1, OU-2, and OU-3), and encompasses 120 of the 133 acres of the Yard. The NYSDEC identified polychlorinated biphenyls (PCBs), lead, and semivolatile organic compounds (SVOCs) as compounds of concern (COCs) for soil in OU-4 and re-established the Yard soil cleanup levels in the ROD for OU-4, issued on March 31, 2009. The ROD describes the selected remedy for OU-4 to be excavation and offsite disposal of soils impacted with COCs above the Yard cleanup levels as follows:

- Total PCBs — 25 milligrams per kilogram (mg/kg)
- Lead — 3,900 mg/kg
- Total SVOCs — 500 mg/kg

Further, NYSDEC required the establishment and/or maintenance of a clean cover over areas that are known to contain carcinogenic polycyclic aromatic hydrocarbons (cPAHs), a subset of SVOCs, at concentrations greater than 25 mg/kg and that are not presently covered by buildings, tracks, or pavement. Continued usage as railroad maintenance and storage facility is planned for the Yard.

This IRM Work Plan has been prepared in accordance with NYSDEC procedures set forth in the document titled DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and complies with all applicable Federal, State and local laws, regulations and requirements.

1.1 Objectives and Scope of the IRM Work Plan

Amtrak is planning to construct a material storage warehouse within OU-4. Final design of this structure has not been completed, however, based on the latest designs, the proposed warehouse is approximately 25,000 square feet in size, and will be located east of the existing Commissary Building, as depicted in Figure 3. Currently, this proposed location is an asphalt parking lot that most recently housed a complex of temporary office trailers. The majority of the trailers have been relocated and the areas requiring excavation are now accessible. Based on information provided by Amtrak, the proposed material storage warehouse will constructed utilizing concrete slab on grade (no basement), a structural frame and a membrane exterior (i.e., polyvinyl chloride [PVC] material). A portable office trailer will be placed inside the material storage warehouse for use as office space.

Prior to the proposed warehouse construction, two excavations will be completed within the proposed material storage warehouse footprint to remove previously identified impacted shallow soil. This IRM Work Plan provides a description of the scope of work in these locations. Unsaturated soils that exceed the Yard cleanup level for PCBs (designated Remedial Zone PCB-7) and unsaturated soils with cPAHs in excess of 25 mg/kg (designated Voluntary cPAH Excavation) will be excavated and disposed offsite. As a note, although capping is an acceptable remedy for the cPAHs exceeding 25 mg/kg described above, Amtrak proposes to excavate this area at the same time excavation takes place in Remedial Zone PCB-7 as an added remedial measure since both locations fall within the proposed material storage warehouse footprint. Soil boring locations and soil quality data for PCBs and cPAHs within the building footprint are presented in Figures 4 and 5, respectively. A site plan depicting proposed excavations to address impacted soils within the building footprint is presented as Figure 6.

According to the letter submitted to the New York State Department of Health (NYSDOH) dated January 29, 2010 (Appendix A), a vapor barrier and/or a subslab depressurization system would not be required based on previously collected subsurface vapor data, type of proposed construction (no basement), and building usage. The detailed scope of work for this IRM is provided in Section 3.

The remainder of this IRM Work Plan is organized as follows:

Section 2: Yard Background

Section 3: Scope of Work

Section 4: IRM Work Plan Implementation Schedule

Section 5: References

2.0 YARD BACKGROUND

Relevant Yard background information is presented in this section.

2.1 Yard Description

The Yard is located in Long Island City, in the County of Queens, New York and is identified as Block 214 and Lots 1 and 68 on the New York City Tax Map. A United States Geological Survey (USGS) topographical quadrangle map (Figure 1) shows the Yard location. The Yard is situated on a 133-acre area bounded by the Metropolitan Transportation Authority (MTA)/Long Island Rail Road (LIRR) property to the north, Skillman Avenue to the south, light industrial and commercial properties and 42nd Place to the east, and Thompson Avenue to the west (Figure 2). OU-4 encompasses 120 of the 133 acres of the Yard. OU-4 is defined as soil above the water table (unsaturated) throughout the Yard, excluding soil areas in OU-1, OU-2, and OU-3. OU-5 is defined as the sewer system throughout the Yard, and OU-6 is defined as groundwater, and saturated soil beneath the entire Yard. This IRM Work Plan addresses the remediation of Remedial Zone PCB-7 and the voluntary cPAH excavation, which are located within the footprint of the proposed material storage warehouse construction in OU-4 (Figure 6).

2.2 Yard History

The Pennsylvania Tunnel and Terminal Company, a subsidiary of the Pennsylvania Railroad, later known as the Penn Central Transportation Company, originally constructed Sunnyside Yard in the early 1900's. The Yard officially opened on November 27, 1910. On April 1, 1976, the Consolidated Rail Corporation (Conrail) acquired the Yard, and the same day conveyed it to Amtrak. The MTA/LIRR currently owns a portion of the Yard along the northern boundary (including a portion of OU-3) and maintains rights of way through the Yard. The Yard originally operated as a storage and maintenance facility for railroad rolling stock.

2.3 Yard Environmental Conditions

There has been significant previous investigation activity conducted at the Yard including within OU-4, where the Yard COCs were redefined to include PCBs, lead, and SVOCs. Past releases of PCBs are likely attributable to losses from and maintenance of train-mounted transformers over time. Transformers were also mounted on the Honeywell Street Bridge. Specific locations, dates, or quantities of PCB releases are not known. Usage of PCB-containing equipment was significantly more predominant by predecessor railroads than by Amtrak. In the past, coal fired locomotives, coal fired boilers, and onsite incinerators were widely used for railroad operations. These activities generated significant amounts of cinders and coal ash as a waste byproduct. Prior to Amtrak's ownership of the Yard, these cinders and ash were used from time to time as fill material throughout OU-4 and are still present at the Yard today. Cinders and ash are known to contain high levels of lead and SVOCs, specifically cPAHs. In addition to fill activities, the presence of lead is attributed to the peeling of lead-based paint from the four New York City Department of Transportation (NYCDOT) bridges that span the Yard.

The cumulative results of unsaturated soil investigations conducted at the Yard in OU-4 were documented in the Operable Unit 4 Remedial Investigation (RI) Report, prepared by Roux Associates, and submitted to the NYSDEC and NYSDOH on October 2, 2008. In addition, a Feasibility Study (FS) report for OU-4 dated January 30, 2009 and a Remedial Action Work Plan (RAWP) for OU-4 dated September 24, 2009, prepared by Roux Associates, were also submitted to the NYSDEC and NYSDOH for approval. The OU-4 FS presented an evaluation of alternatives for OU-4 and recommended Alternative 4 (excavation and offsite disposal) as the appropriate remedial action. The NYSDEC issued ROD for OU-4 selected excavation of the isolated PCB hot spots and a single lead hot spot in soil as the permanent remedy for OU-4. The RAWP provides a description of this remedy for the thirteen remedial zones (PCB-1 through PCB-12 and LEAD-20) in OU-4.

As noted previously, the NYSDEC identified PCBs, lead, and SVOCs as COCs for soil, re-established the Yard soil cleanup levels, and provided specific criteria for addressing cPAHs over 25 mg/kg in the OU-4 ROD.

2.4 Areas of Concern in the Proposed Construction Area

This IRM Work Plan addresses the excavation of Remedial Zone PCB-7 (as described in the OU-4 FS and RAWP documents) and the voluntary cPAH excavation (as as shown in Figure 6). Remedial Zone PCB-7 consists of unsaturated soils impacted with PCBs above the Yard cleanup level of 25 mg/kg and the voluntary cPAH area consists of unsaturated soils impacted with cPAHs above the NYSDEC specific criteria for addressing cPAHs over 25 mg/kg. As described previously, although capping is an acceptable remedy for soil containing cPAHs over 25 mg/kg (provided that total SVOCs are less that 500 mg/kg), Amtrak proposes to excavate this area at the same time excavation takes place in area PCB-7 as an added remedial measure and since both areas fall within the proposed material storage warehouse construction footprint. Removal of this area containing cPAHs over 25 mg/kg remains consistent with NYSDEC's remediation goal for OU-4 as well as the remediation goals for the site as described in the ROD.

2.4.1 Remedial Zone PCB-7

As documented in the OU-4 RI Report, the only unsaturated soil exceedance identified in the proposed material storage warehouse footprint is a single sample collected from boring PC-10. As shown in Figure 4, sample PC-10/1-2, collected from 1 to 2 feet below land surface (ft bls) contained PCBs at a concentration of 26 mg/kg, marginally exceeding the PCB soil cleanup level for the Yard (as established in the OU-4 ROD) of 25 mg/kg. Additionally, although not technically an exceedance, the sample collected immediately above this exceedance in the 0 to 1 ft bls interval contained PCBs at a concentration of 25 mg/kg.

As shown in Figure 4, this PCB exceedance has been delineated vertically and horizontally. Prior to initiating warehouse construction, Amtrak will excavate this PCB hot spot as described in Section 3.5.1. Although already fully delineated *in situ*, as described below in Section 3.5.1, confirmation samples will be collected following excavation activities in accordance with DER-10 to ensure the entire hot spot is removed. The estimated soil volume to be excavated within PCB-7 is 30 cubic yards (CY).

2.4.2 Voluntary cPAH Excavation

As documented in the OU-4 RI Report, there were six locations (PC-8, PC-8SE, CB-2E, CB-2W, CB-2WS and CB-2) where samples collected at various depths (from 0 to 3 ft bls) contained cPAHs at concentrations above the specific criteria of 25 mg/kg (Figure 5). The samples ranged from 27.8 to 34.6 mg/kg in eight samples. This area has been fully delineated *in situ*, both vertically and horizontally in all directions. Although already fully delineated, as described below in Section 3.5.2, confirmation samples will be collected following excavation activities in accordance with DER-10 to ensure the entire hot spot is removed. The estimated soil volume to be excavated within this area is 156 CY.

3.0 SCOPE OF WORK

As described previously, Amtrak is planning on constructing a material storage warehouse at the Yard. Final design of this structure has not been completed, however, based on the latest designs, the proposed structure is approximately 25,000 square feet in size, and will be located east of the existing Commissary Building, as depicted in Figure 3. The PCB and cPAH exceedances in soil within the warehouse footprint will be addressed prior to the construction of the structure. All activities will be performed as described in this section and in compliance with the following project plans provided in the NYSDEC-approved OU-3 RAWP, as applicable for this scope of work:

- Quality Assurance Project Plan (QAPP) and the attached table titled "Analytical Methods/Quality Assurance Summary"
- Construction Quality Assurance Plan (CQAP)
- Soil/Materials Management Plan (SoMP)
- Stormwater Pollution Prevention Plan (SWPPP)

A total of approximately 186 CY of soil within the two locations (PCB-7 and the voluntary cPAH excavation) is anticipated to be excavated to a depth ranging from approximately 2 to 3 ft bls and disposed of offsite. Since both areas require confirmation samples, actual volumes will be determined based on confirmation sample results. In general, remediation activities for this IRM work plan will consist of the following tasks:

- Initial Site Survey;
- Site Mobilization and Site Preparation;
- Site Specific Health and Safety Plan Preparation;
- Community Air Monitoring Plan Preparation;
- Soil Excavation and Confirmation Sampling;
- Stockpiling;
- Waste Sampling;
- Transportation and Offsite Disposal;
- Backfilling;

- As-Built Survey; and
- Site Restoration and Demobilization.

3.1 Initial Site Survey

An initial Site survey shall be performed by a professional surveyor licensed within the State of New York. At a minimum, this survey shall identify the limits of excavation for Remedial Zones PCB-7 and the voluntary cPAH excavation and surrounding features within the work zone (i.e., utilities).

3.2 Site Mobilization and Site Preparation

A project kick-off meeting will be conducted with NYSDEC, Amtrak , Roux Associates, and the selected Contractor prior to the commencement of any intrusive activities. Amtrak will contract directly with the selected Contractor. The Contractor shall supply any labor (HAZWOPER Certified in accordance with OSHA 1910.120 and Amtrak's Roadway Worker Protection training) and materials required for the removal and disposal of contaminated soil. In addition, all necessary permits, insurance, bonds, and licenses required to complete all work shall be obtained and all fees necessary to obtain these permits shall be paid. Mobilization and Site preparation activities include:

1. Mobilization of equipment to the work area.
2. Installation of construction fencing and traffic barricades to delineate the work zone, act as a work Site security measure, and mark the truck loading and decontamination areas.
3. Installation of stabilized construction entrances at points of vehicle ingress and egress to the project work area. Truck access to the Yard shall be via 39th Street.
4. Implementation of erosion and sediment control measures in accordance with the New York Guidelines for Urban Erosion and Sediment Control. Hay bales will be placed at locations upgradient of excavation areas to control stormwater runoff and surface water from entering or exiting the excavation. Catch basin inlets will be protected to prevent disturbed soil and ballast from entering.
5. Set-up of staging areas for the excavation area.
6. Set-up of temporary facilities and decontamination facilities including decontamination pad in order to decontaminate trucks and other vehicles/equipment. The decontamination pad shall be constructed using 60-mil high density polyethylene (HDPE) liner with perimeter berms, sloped to a low-lying sump to contain any liquids. The decontamination

pad shall be sized to accommodate the largest construction vehicle used and located adjacent to the waste staging area.

7. Removal of pavement to access the soil excavation area.

3.3 Site Specific Health and Safety Plan

All remediation activities will be performed in a manner consistent with 29 CFR 1910 and 1926. The Contractor will be required to prepare and submit a Site-Specific Health and Safety Plan (HASP) prior to initiation of work activities. During all phases of Site work, the Contractor shall monitor safety and health conditions and fully enforce his own HASP. The Contractor shall be responsible for monitoring general Site conditions and for safety hazards (including, but not limited to any required air monitoring within the work zone). Specifically, monitoring will be performed to verify that all requirements of the Occupational Safety and Health Administration as outlined on 29 CFR Part 1910 and 1926 are adhered to as well as Amtrak's Roadway Worker Protection requirements.

3.4 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) shall be implemented during all intrusive and soil management remediation activities to measure the concentration of volatile organic compounds (VOCs) and particulates at the perimeter of the work zone by Roux Associates. The CAMP was developed in accordance with the NYSDOH Generic Community Air Monitoring Plan contained in Appendix 1A of the Draft DER-10. The CAMP includes real-time continuous air monitoring at the work site's downwind perimeter for VOCs and particulates. Implementation and management procedures are specified within the CAMP. During all phases of work, the Contractor shall be responsible for mitigating any vapor and particulate issues, via suppression techniques defined in the CAMP (Appendix B).

Exceedances observed, as defined in the CAMP will be reported to NYSDEC and NYSDOH Project Managers by Roux Associates.

3.4.1 Odor and Dust Control Plan

Odors and dust will be continually monitored during excavation activities and addressed using the measures discussed below. The degree to which these measures will be used will depend on particulate levels in ambient air at the perimeter of the work area as determined through implementation of the CAMP. The planned excavations are relatively small areas centrally located within the Yard and located within unsaturated soil that is impacted by PCBs and cPAHs. For these reasons, it is not anticipated that excavation of the locations will pose a significant source of odors or dust.

3.4.1.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors offsite and onsite. Specific odor control methods to be used on a routine basis will include assigning a dedicated air monitoring technician to monitor odors, backfilling excavations in a timely manner, and maintaining covers over stockpiled impacted soils. If nuisance odors are identified, work in that particular work area will be halted and the source of odors will be identified and corrected. Work will not resume in this area until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of Roux Associates, who is responsible for certifying the Final Engineering Report (FER).

As necessary, a foam unit to suppress vapors and odors that may be generated during the soil excavations will be employed. The foam unit, such as a Rusmar PFU-400, includes a self-contained 400-gallon tank for mixing foam concentrate. Foam would be applied to stockpiled soil and excavation sidewalls in an effort to maintain work zone and perimeter air monitoring criteria established in the HASP and CAMP. Tarps will also be employed to suppress vapor and odors from stockpiled soil in the staging area.

All necessary means will be employed to prevent onsite and offsite nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; and (b) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate nuisance odors will be evaluated.

In summary, if an odor complaint is received, the following procedure will be implemented:

1. Work will be halted, and potential sources of odors will be identified
2. NYSDEC, NYSDOH, and Amtrak will be notified of the odor complaint

3. Nuisance odors will be abated through the use of a foam unit, by covering stockpiles, and/or by backfilling open excavations

4. Work will resume only after the nuisance odors have been abated

3.4.1.2 Dust Control Plan

A dust suppression plan that addresses dust management during invasive onsite work may include any or all of the items listed below:

- Dust suppression may be achieved through the use of a dedicated onsite water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas, including excavations and stockpiles.

- Gravel may be used on roadways to provide a clean and dust-free road surface.

- Onsite truck routes may be limited to minimize the area required for water truck sprinkling.

3.5 Soil Excavation and Confirmation Sampling

As described in the above sections and shown in Figure 6, two locations within the footprint of the proposed warehouse construction will be excavated. A description for each area is provided below.

3.5.1 Soil Excavation and Confirmation Sampling for Remedial Zone PCB-7

As shown in Figure 6, based on previously completed sampling, this location has been delineated vertically and horizontally. Excavation depth is anticipated to be approximately 2 ft bls. In accordance with DER-10, confirmation soil samples will be collected in all directions (one sidewall sample per wall and one bottom sample) and analyzed for PCBs in area PCB-7. The proposed confirmation sample locations are presented in Figure 6. If results indicate PCB concentrations above the cleanup criteria of 25 mg/kg for any sidewall sample, then the excavation will proceed horizontally in that direction in increments of 10 ft, similar to a “box” shape, where the corner location in which the sidewall sample was collected becomes the center of the 20 ft by 20 ft “box.” After the soil volume is excavated, sidewall samples will be again collected at a rate of one sample per wall. Excavation will proceed in whatever direction is necessary until all the sidewall sample results are below the Yard’s criteria for PCBs or an obstruction (i.e., building wall, utilities, etc.) prevents the excavation from continuing further, in which case a demarcation layer will be used to memorialize remaining impacted soil before backfilling the excavation.

Similarly, if results indicate PCB concentrations above the cleanup criteria of 25 mg/kg for the bottom sample, then the excavation will proceed vertically an additional foot and another bottom sample will subsequently be collected. Excavation will proceed vertically until the Site Specific Soil Action Level of 25 ppm is achieved in accordance with the OU-4 ROD. It is anticipated that turnaround time for the receipt of the laboratory analysis and evaluation is five days; therefore, the Contractor should assume standby time will be necessary. If all initial confirmation sample results are below the criteria, the estimated volume of soil to be removed in this area is 30 CY. Roux Associates will perform all confirmation sampling.

3.5.2 Soil Excavation and Confirmation Sampling for the Voluntary cPAH Excavation

As shown in Figure 6, this area has been fully delineated as a result of previously completed soil borings. Excavation depth is anticipated to be 2 ft bls for PC- subarea and 3 ft bls for CB- area (as shown in Figure 6). In accordance with DER-10, confirmation soil samples will be collected from all directions (one sidewall sample per wall and one bottom sample per every 900 square feet of bottom) and analyzed for cPAHs. The locations of the proposed confirmation samples are presented in Figure 6. If results indicate cPAHs concentrations above the specific criteria for addressing cPAHs over 25 mg/kg for any sidewall sample, then the excavation will continue horizontally in that direction in increments of 10 ft, similar to a "box" shape, where the corner location in which the sidewall sample was collected becomes the center of the 20 ft by 20 ft "box." After the soil volume is excavated, sidewall samples will again be collected at a rate of one sample per wall. Excavation will proceed in whichever direction is necessary until all the sidewall sample results are below the Yard's criteria for cPAHs or an obstruction (i.e., building wall, utilities, etc.) prevents the excavation from continuing further, in which case a demarcation layer will be used to memorialize remaining impacted soil before backfilling the excavation. Similarly, if results indicate cPAH concentrations above 25 mg/kg for the bottom sample, then the excavation will proceed vertically an additional foot and another bottom sample will be collected. If the bottom sample indicates cPAH concentrations above 25 mg/kg, then a demarcation layer might be considered in lieu of additional excavation. If so, as per the ROD for OU-4, a minimum cover of one ft thick clean fill (as described in Section 3.9) will be placed above the impacted area. It is anticipated that turnaround time for the receipt of the laboratory analysis and evaluation is five days, therefore, the Contractor should assume standby time will be necessary. If all initial confirmation sample results are below the criteria, the estimated volume of soil to be removed in this area is 156 CY. Roux Associates will perform all confirmation sampling.

3.6 Stockpiling

As described below in Section 3.8, soil excavated from Remedial Zone PCB-7 will be disposed as PCB contaminated Toxic Substance Control Act (TSCA) waste. Amtrak currently holds an approved waste profile for the disposal of this material at a permitted and approved facility, and therefore, may elect to directly load this material for disposal (as opposed to stockpiling). The soil excavated from the voluntary cPAH excavation will, however, most likely be stockpiled onsite and sampled for waste characterization (as described below in Section 3.7) prior to being loaded into trucks for disposal. When soil is stockpiled, the Contractor will be responsible for installation, operation, and maintenance of the staging area. Soil excavated from the excavation areas will be stockpiled into the staging area. The stockpile will be constructed by the Contractor to provide a 40-mil HDPE base liner between the excavated soil and the paved area. Stockpiles will be kept covered at all times with appropriately anchored tarps of 12-mil thickness or greater. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Soil stockpiles will be continuously encircled with silt fences or bermed to control runoff. Hay bales will be used as needed near catch basins and other discharge points. Stockpiles will be inspected at a minimum of once each week and after every storm event by Roux Associates. Results of inspections will be recorded in a logbook and maintained in OU-4 and available for inspection by NYSDEC.

3.7 Waste Sampling

If a waste profile has not previously been prepared, the excavated material will be sampled for disposal characterization prior to its removal from the staging area by Roux Associates. A representative composite sample will be collected from the stockpile. Each composite sample will consist of five distinct, randomly selected sample locations. The soil samples will be submitted for waste characterization, in accordance with requirements of the approved disposal facility, to a laboratory currently certified by the NYSDOH Environmental Laboratory Approval Program (ELAP). These parameters may also include Resource Conservation and Recovery Act (RCRA) characteristics (e.g., reactivity, and toxicity), total petroleum hydrocarbon (TPH), TCLP list SVOCs, PCBs, PAHs and target analyte list (TAL) metals, depending on the disposal facility requirements. For each sample, laboratory-supplied bottles will be filled using a dedicated polyethylene scoop. Filled sample bottles will be placed into an iced cooler for subsequent transport to the laboratory under standard Chain of Custody procedures.

Construction wastewater will be generated from personnel/equipment decontamination and stormwater run-off/run-on in bermed soil stockpile and excavation areas. Dewatering liquids are not anticipated to be generated because the soil to be excavated in each remedial zone is unsaturated soil (by definition of OU-4). Construction wastewater will be collected as generated and stored onsite in leak tight drums. The wastewater will be sampled and submitted for analysis for disposal characterization by Roux Associates. Based on the laboratory analytical results, the construction wastewater will be disposed offsite at a permitted disposal facility.

Sampling and analytical methods, sampling frequency, analytical results, and QA/QC will be reported in the Final Engineering Report. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

3.8 Transportation and Offsite Disposal

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Loaded vehicles leaving the Yard will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated onsite. Roux Associates will be responsible for ensuring that all outbound trucks are inspected and will be brushed or washed as required to remove loose soil at the truck wash before leaving the Yard until the remedial construction is complete.

The proposed in-bound and out-bound truck route to the Yard is 39th Street. Trucks will be prohibited from stopping and idling in the neighborhood outside the Yard. Queuing of trucks will be performed onsite in order to minimize offsite disturbance. Offsite queuing will be prohibited.

All soil/fill/solid waste excavated and removed from OU-4 will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from the Yard is proposed for unregulated disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated offsite management of materials from OU-4 is prohibited without formal NYSDEC approval.

All asphalt and soil excavated from Remedial Zone PCB-7 will be disposed as PCB-contaminated TSCA waste. All other asphalt outside of Remedial Zone PCB-7 that can be segregated from soil to the satisfaction of Amtrak and Roux Associates can be disposed as a Municipal Solid Waste per 6 NYCRR Part 360 1.2. All soil excavated from area CPAH-6 will be disposed as non-hazardous contaminated soil at a Subtitle D landfill facility and is prohibited from being disposed at Part 360 16 Registration Facilities (also known as Soil Recycling Facilities).

All liquids to be removed from OU-4 will be handled, transported, and disposed in accordance with applicable local, State, and Federal regulations.

3.9 Backfilling

Clean select fill will be imported onsite and used for backfill in each of the locations. Clean select fill will be suitable subgrade material for pavement replacement per Amtrak's Railroad Specifications and will be imported by the Contractor. Select fill shall consist of well graded granular material from fine to course with no more than 10% fines passing a 200 sieve; 80% passing the No. 10 sieve; no stones larger than 2 inches; and no debris, wood or deleterious material.

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for the Yard. All laboratory analysis for imported soil will be the responsibility of the Contractor and will include, at a minimum, VOCs, SVOCs, TAL metals, TCLP metals, and PCBs. These NYSDEC approved backfill or cover soil quality objectives are the more stringent of Protection of Public Health for commercial use or Protection of Groundwater as defined by 6 NYCRR part 375-6.7(d). Non-compliant soils will not be imported onsite without prior approval by NYSDEC.

Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360 (e.g., recycled concrete aggregate), but do not meet backfill or cover soil objectives for the Yard, will not be imported onsite without prior approval by NYSDEC.

All fill materials shall be placed in 8-inch lifts, spread uniform layers, moistened as necessary, and compacted to 95 percent per ASTM D 1557. Successive lifts shall not be placed until the lift under construction has been compacted, tested, and accepted.

The Contractor shall maintain optimum moisture content to attain the required density. The moisture content shall be within plus four or minus two percent of the optimum moisture content, as determined by field and laboratory tests. The Contractor shall perform all necessary work to adjust the moisture content of the material to within the range necessary to permit adequate compaction.

The Contractor shall protect the surface of each lift from desiccation, flooding, and freezing. Protection, if required, may consist of a thin plastic protective cover installed over the compacted material.

The Contractor shall perform or arrange for the performance of compaction testing required to document conformance in accordance with ASTM D 2922. The Contractor shall provide Roux Associates with copies of all compaction test results prior to placing fill.

3.10 As Built Survey

A final site survey will be performed once the backfilling activities are completed. A final as built drawing showing final elevations and dimensions of work will be sealed and signed by a New York licensed surveyor. Roux Associates will coordinate the surveying activities.

3.11 Site Restoration and Demobilization

All working areas shall be restored and graded to pre-construction conditions, replacement of asphalt top course surface to meet the thickness of the existing asphalt, but with a minimum thickness of two inches. All waste staging areas, hay bales used for erosion control, and decontamination pads shall be removed and materials disposed. Soil underlying the plastic sheeting for waste staging area will be inspected for any residual evidence of waste materials and removed, if necessary. All equipment will be decontaminated prior to leaving the Yard.

4.0 IRM IMPLEMENTATION SCHEDULE

This IRM Plan is anticipated to begin in Spring 2010 and will require approximately six weeks to complete. It is anticipated that the actual onsite duration of major remedial construction tasks will be completed as follows:

- Initial Site Survey .... one day
- Site Mobilization and Preparation .... three days
- PCB-7 Remedial Zone Soil Excavation and Removal .... two days
- Voluntary cPAH Excavation and Removal .... four days
- Transportation and Offsite Disposal .... two days
- Backfill Placement and Compaction .... three days
- As Built Survey .... one day
- Site Restoration and Demobilization .... three days

5.0 REFERENCES

NYSDEC, 1989, NYSDEC TAGM 4031 – Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

NYSDEC, 2002. Draft DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 1A, NYSDOH Generic Community Air Monitoring Plan, December 25, 2002.

NYSDEC, 2009a. Proposed Remedial Action Plan, Amtrak Sunnyside Yard, Operable Unit 4, Long Island City, Queens County, New York, Site No. 241006, February 2009.

NYSDEC, 2009b. Record of Decision, Amtrak Sunnyside Yard Site, Operable Unit No. 4, Long Island City, Queens County, New York, Site Number 241006, March 2009.

NYSDEC, 2010. DER-10 Technical Guidance for Site Investigation and Remediation, May 2010.

Roux Associates, 2008. Operable Unit 4 Remedial Investigation Report, Sunnyside Yard, Queens, New York, October 2, 2008.

Roux Associates, 2009. Operable Unit 4 Feasibility Study, Sunnyside Yard, Queens, New York, January 30, 2009.

Roux Associates, 2009. Operable Unit 4 Remedial Action Work Plan, Sunnyside Yard, Queens, New York, September 24, 2009.

Table 1. Analytical Methods/Quality Assurance Summary Table, OU-4 IRM Work Plan, Amtrak, Sunnyside Yard, Queens, New York

Sample Matrix	Target Analytes	Analysis Method	Field Samples	Replicates[1]	Trip Blanks[2]	Field Blanks[3]	Matrix Spikes[4]	Spike Duplicates[4]	Total No. of Samples	Sample Preservation	Container Type	Sample Holding Time
Soil	Total cPAHs	USEPA SW-846 Method 8270	11	1	0	1	1	1	15	Cool to 4°C	8 oz glass with Teflon lined lid	14 Days to Extract; 40 days for analysis
	PCBs	USEPA SW-846 Method 8082	5	1	0	1	1	1	9	Cool to 4°C	8 oz glass with Teflon lined lid	14 Days to Extract; 40 days for analysis

[1] Based on 1 per 20 samples or 1 per Sample Delivery Group (3 days max)

[2] Typically based on 1 cooler per day, however, since samples are not being analyzed for volatile organic compounds, no Trip Blanks are proposed

[3] Based on 1 per day

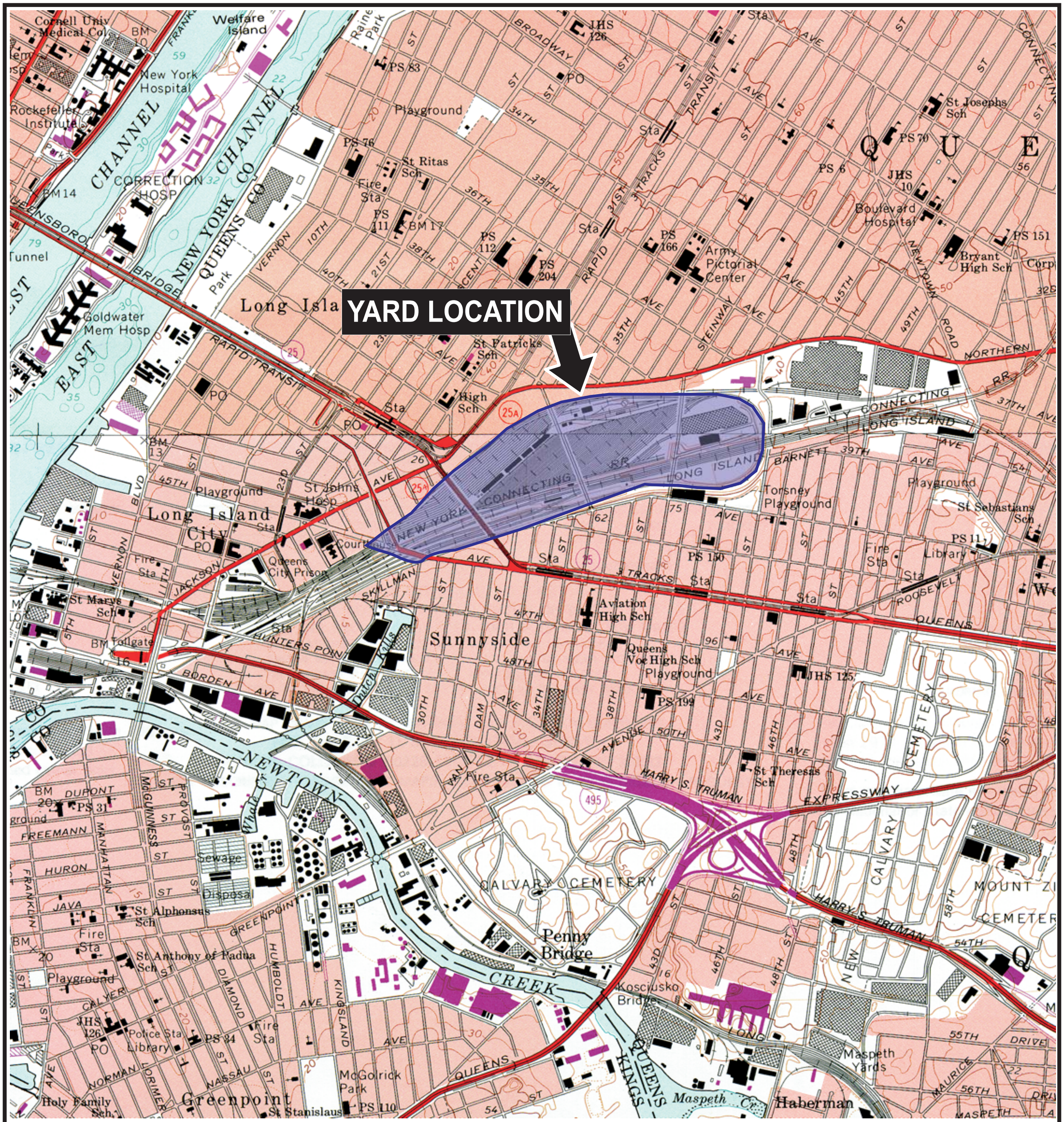
[4] Based on 1 per 20 samples or 1 per Sample Delivery Group (3 days max)

USEPA - United States Environmental Protection Agency

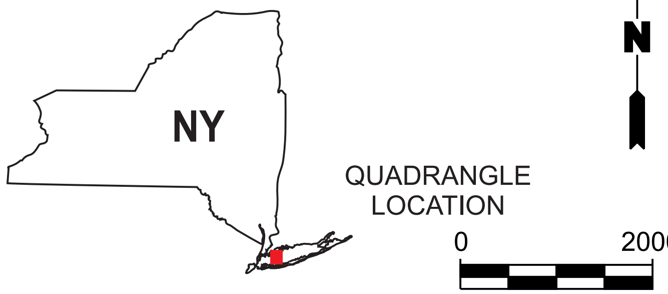
cPAHs - Carcinogenic polycyclic aromatic hydrocarbons

PCBs - Polychlorinated Biphenyls

°C – Degrees Celsius



SOURCE:
CENTRAL PARK AND BROOKLYN, NEW YORK
QUADRANGLE 7.5 MINUTE SERIES (TOPOGRAPHIC)



Title:

LOCATION OF SITE

IRM WORK PLAN FOR OU-4

Prepared for:

AMTRAK

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: H.G.	Date: 02APR10	FIGURE
Prepared by: J.A.D.	Scale: 1"=2000'	1
Project Mgr.: H.G.	Office: NY	
File No.: AM7115101	Project No.: 05571Y11	

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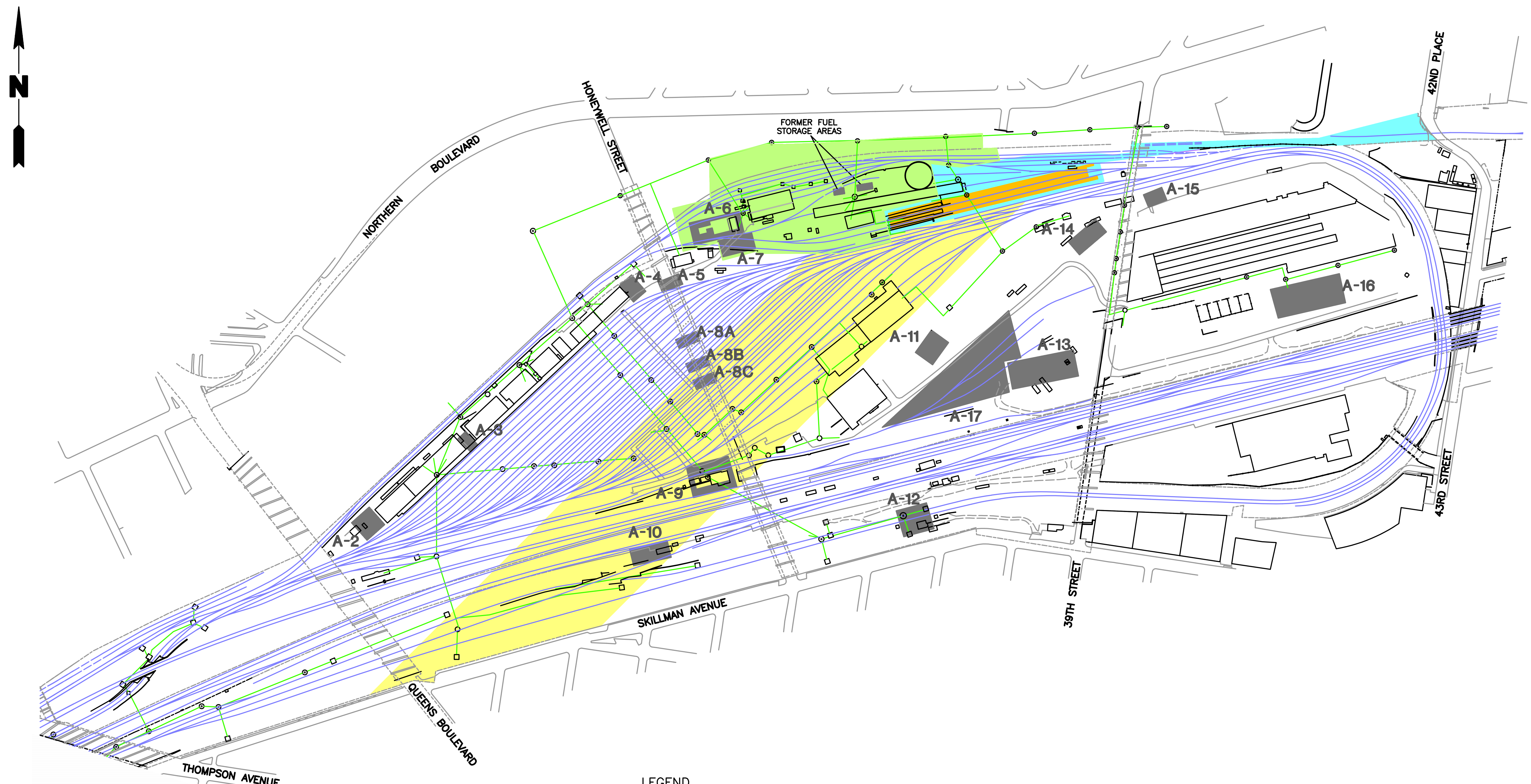


LEGEND

	LOCATION OF RAILROAD TRACK		OU-1
	APPROXIMATE LOCATION OF SEWER		OU-2
	GRATE COVER CATCH BASIN LOCATION		OU-3
	SOLID COVER MANHOLE LOCATION		OU-4
	GRATE COVER MANHOLE LOCATION		OU-5
A-2	LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN		
	APPROXIMATE PROPERTY BOUNDARY		

400' 0 400'

NOTES

1. LOCATIONS OF SEWER COMPONENTS BASED UPON A REVIEW OF AMTRAK-SUPPLIED ENGINEERING DIAGRAMS AND LIMITED FIELD SURVEY.
2. OU-6, GROUND WATER BENEATH THE YARD, IS NOT SHOWN.
3. LIRR – LONG ISLAND RAIL ROAD

Title:

AMTRAK YARD LAYOUT

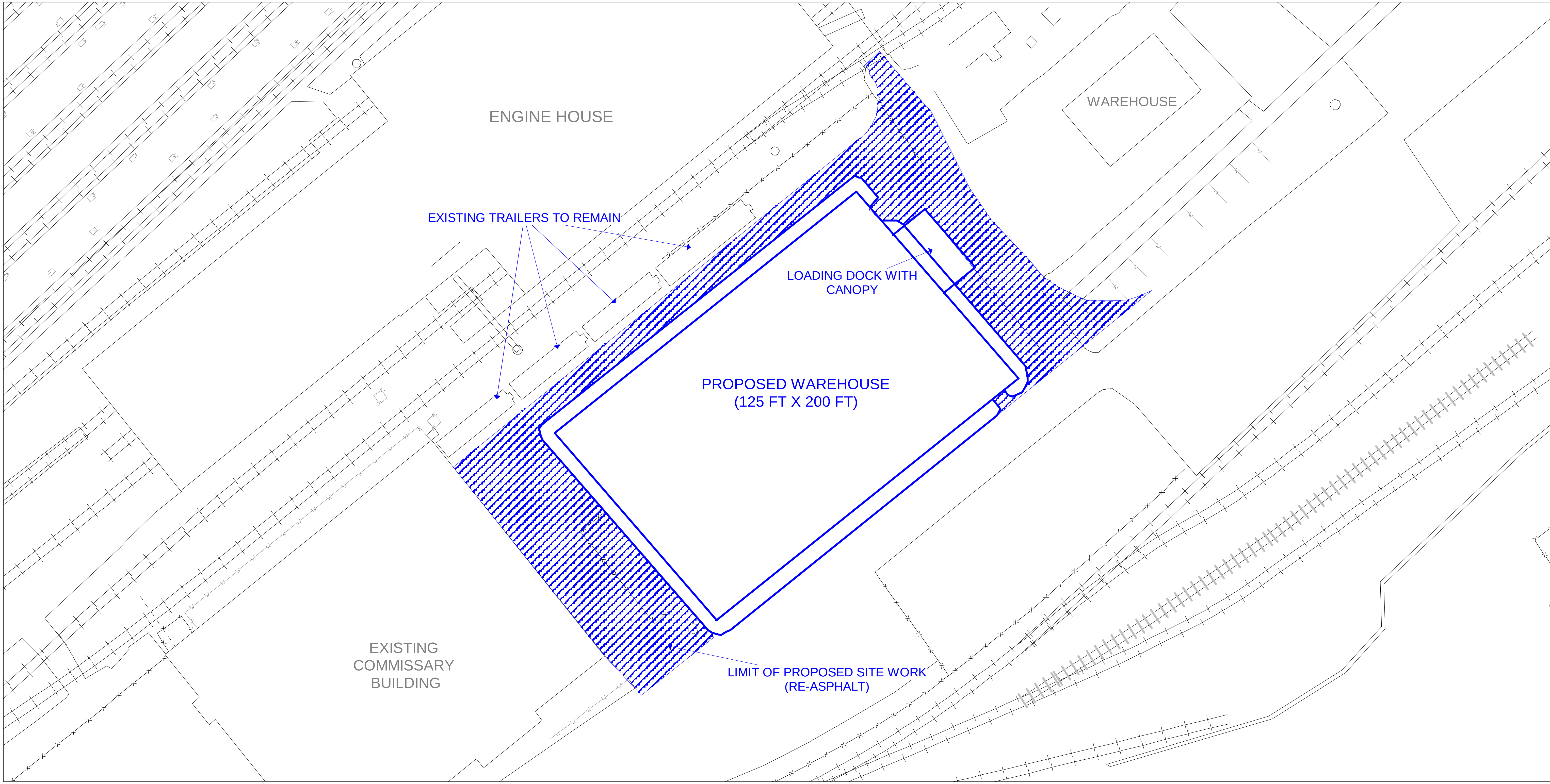
IRM WORK PLAN FOR OU-4

Prepared For: AMTRAK

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: H.G.	Date: 02APR10	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	2
Project Mgr: H.G.	Office: NY	
File No: AM7115102	Project: 05571Y10	

N:\PROJECTS\AM055Y\AM71Y\151\AM7115102.DWG



LEGEND:

APPROXIMATE FOOTPRINT OF PROPOSED MATERIAL STORAGE WAREHOUSE BUILDING

PROPOSED LIMIT OF SITE WORK (RE-ASPHALT)

NOTES:

PROPOSED CONSTRUCTION SHOWN IN BLUE.

PROPOSED CONSTRUCTION BASED ON DRAWINGS SUPPLIED BY AMTRAK

50' 0 50'

N

Title:

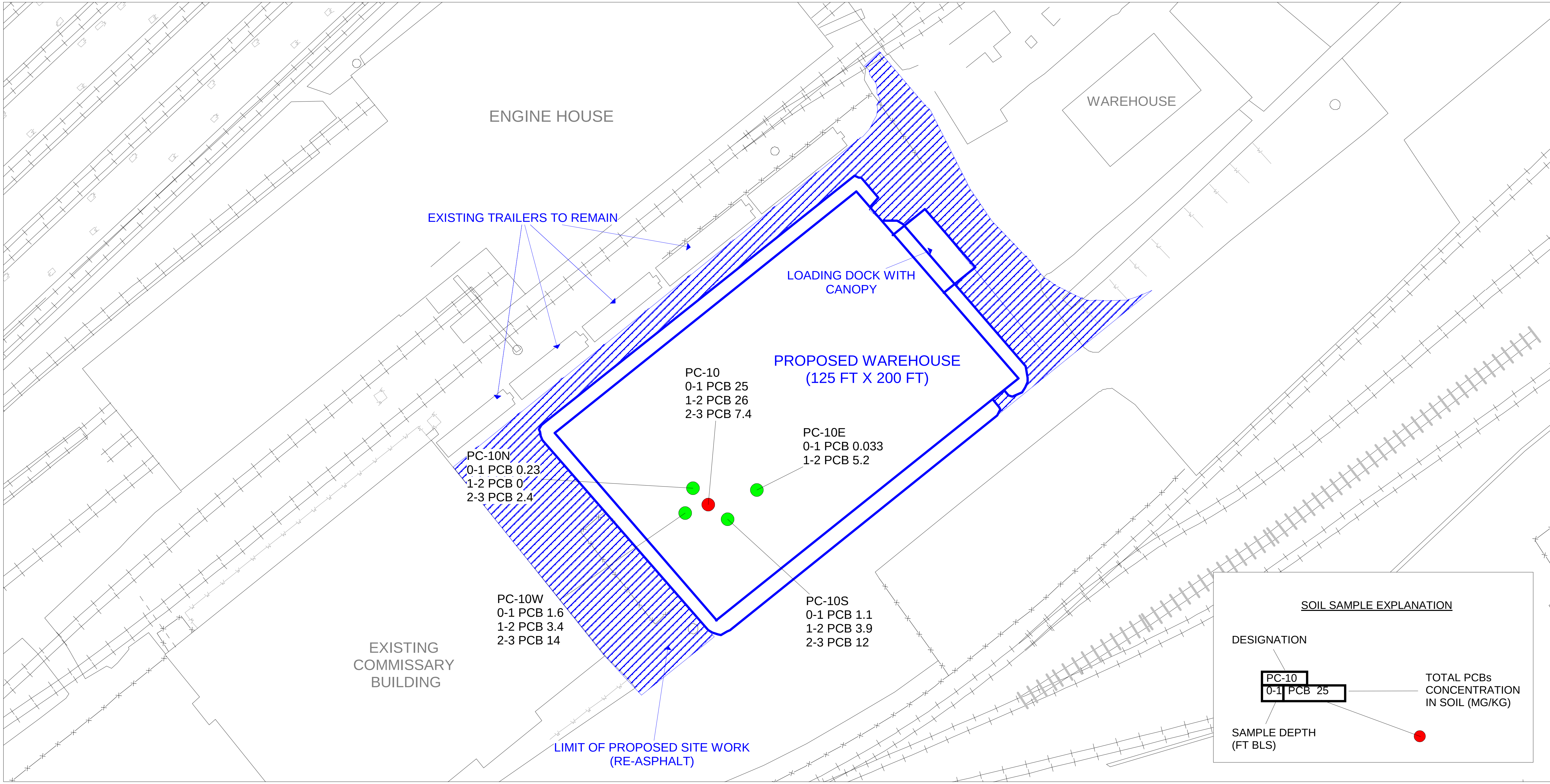
PROPOSED MATERIAL STORAGE WAREHOUSE CONSTRUCTION AREA - OPERABLE UNIT 4

IRM WORK PLAN FOR OU-4

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 3/29/2010	FIGURE
Prepared by: RSK	Scale: SHOWN	3
Project Mgr: HG	Office: NY	
File No: AM7115103.WOR	Project: 0055.0071Y011	



LEGEND:

APPROXIMATE FOOTPRINT OF PROPOSED MATERIAL STORAGE WAREHOUSE BUILDING

PROPOSED LIMIT OF SITE WORK (RE-ASPHALT)

PC-10 LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN 25 MG/KG

PC-10N LOCATION AND DESIGNATION OF PCB DELINEATION BORING

50' 0 50'

NOTES:

PROPOSED CONSTRUCTION SHOWN IN BLUE.

PROPOSED CONSTRUCTION BASED ON DRAWINGS SUPPLIED BY AMTRAK

FT - FEET

BLS - BELOW LAND SURFACE

MG/KG - MILLIGRAMS PER KILOGRAM

PCBs - POLYCHLORINATED BIPHENYLS

N

Title:

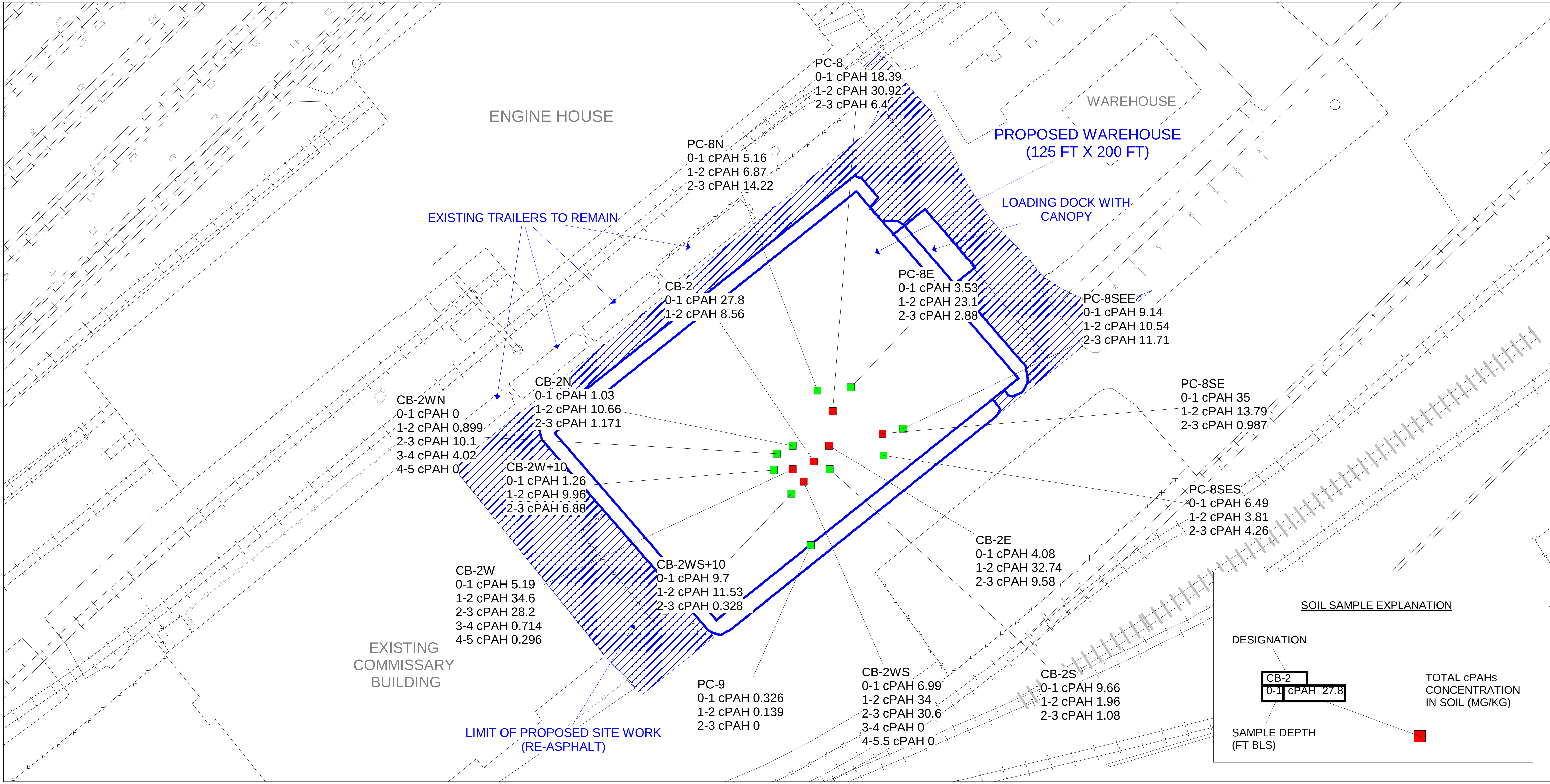
PCBs GREATER THAN 25 MG/KG IN SOIL AND DELINEATION BORINGS - PROPOSED WAREHOUSE CONSTRUCTION AREA

IRM WORK PLAN FOR OU-4

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 1/29/2010	FIGURE
Prepared by: RSK	Scale: SHOWN	4
Project Mgr: HG	Office: NY	
File No: AM7115104.WOR	Project: 0055.0071Y011	



LEGEND:

APPROXIMATE FOOTPRINT OF PROPOSED MATERIAL STORAGE WAREHOUSE BUILDING

PROPOSED LIMIT OF SITE WORK (RE-ASPHALT)

50' 0 50'

CB-2 LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR cPAHs GREATER THAN 25 MG/KG

CB-2N LOCATION AND DESIGNATION OF cPAH DELINEATION BORING

NOTES:

PROPOSED CONSTRUCTION SHOWN IN BLUE.

PROPOSED CONSTRUCTION BASED ON DRAWINGS SUPPLIED BY AMTRAK

FT - FEET

BLS - BELOW LAND SURFACE

MG/KG - MILLIGRAMS PER KILOGRAM

cPAHs - SEVEN SPECIFIC POLYCYCLIC AROMATIC HYDROCARBONS CONSIDERED BY THE NYSDEC TO BE CARCINOGENIC

N

Title:

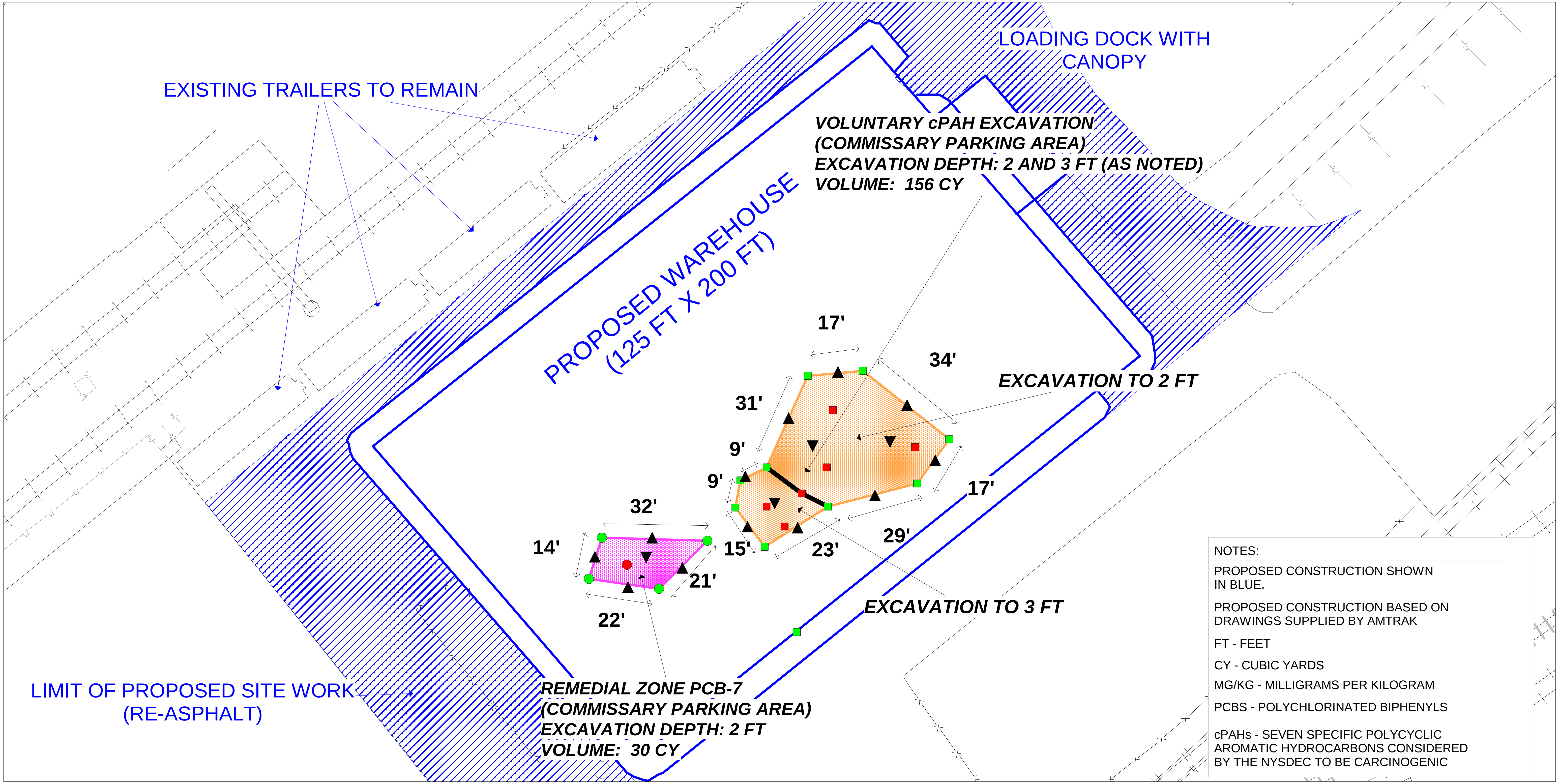
cPAHs GREATER THAN 25 MG/KG IN SOIL AND DELINEATION BORINGS - PROPOSED WAREHOUSE CONSTRUCTION AREA

IRM WORK PLAN FOR OU-4

Prepared For: AMTRAK

ROUX
ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 1/29/2010	FIGURE
Prepared by: RSK	Scale: SHOWN	5
Project Mgr: HG	Office: NY	
File No: AM7115105.WOR	Project: 0055.0071Y011	



NOTES:

PROPOSED CONSTRUCTION SHOWN IN BLUE.

PROPOSED CONSTRUCTION BASED ON DRAWINGS SUPPLIED BY AMTRAK

FT - FEET

CY - CUBIC YARDS

MG/KG - MILLIGRAMS PER KILOGRAM

PCBS - POLYCHLORINATED BIPHENYLS

cPAHs - SEVEN SPECIFIC POLYCYCLIC AROMATIC HYDROCARBONS CONSIDERED BY THE NYSDEC TO BE CARCINOGENIC

LEGEND:

- APPROXIMATE FOOTPRINT OF PROPOSED MATERIAL STORAGE WAREHOUSE BUILDING
- PROPOSED LIMIT OF SITE WORK (RE-ASPHALT)
- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN 25 MG/KG
- LOCATION AND DESIGNATION OF PCB DELINEATION BORING
- LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR cPAHs GREATER THAN 25 MG/KG
- LOCATION AND DESIGNATION OF cPAH DELINEATION BORING
- LOCATION AND DESIGNATION OF PROPOSED CONFIRMATION SIDEWALL SAMPLE
- LOCATION AND DESIGNATION OF PROPOSED CONFIRMATION BOTTOM SAMPLE
- PROPOSED LIMITS OF SOIL EXCAVATION TO ADDRESS PCBs OVER 25 MG/KG
- PROPOSED LIMITS OF VOLUNTARY SOIL EXCAVATION TO ADDRESS cPAHs OVER 25 MG/KG

30' 0 30'

N

Title:

SOIL EXCAVATION PLAN - PROPOSED WAREHOUSE CONSTRUCTION AREA

IRM WORK PLAN FOR OU-4

Prepared For: AMTRAK

ROUX

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 1/29/2010	FIGURE
Prepared by: RSK	Scale: SHOWN	6
Project Mgr: HG	Office: NY	
File No: AM7115106.WOR	Project: 0055.0071Y011	

APPENDIX A

Summary of Environmental Quality Letter Dated January 29, 2010 to NYSDOH

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES, INC.

ROUX

209 SHAFTER STREET
Islandia, New York 11749-5074 TEL 631-232-2600 FAX 631-232-9898

January 29. 2010

Mr. Christopher Doroski
Public Health Specialist
New York State Department of Health
547 River Street
Troy, New York 12180

Re: Summary of Environmental Quality in the Proposed Material Storage Warehouse Construction Area in Operable Unit 4, Amtrak - Sunnyside Yard, Queens, New York

Dear Mr. Doroski:

The National Railroad Passenger Corporation (Amtrak) is planning to construct a material storage warehouse structure within Operable Unit 4 (OU-4) at Sunnyside Yard, located in Queens, New York (Yard). Final design of this structure has not been completed, however, based on the latest designs, the proposed construction area is approximately 18,600 square feet in size, and will be located immediately east of the existing Commissary Building, as depicted in Figure 1 (attached). Currently, this proposed construction area is an asphalt parking lot with a complex of 11 temporary office trailers. As part of construction, 10 of these trailers would be removed to facilitate the new warehouse. Based on information provided by Amtrak, this warehouse structure will be concrete slab on grade construction, with no basement. The proposed material storage warehouse will be built using a structural frame and a membrane exterior (i.e., polyvinyl chloride [PVC] material). A portable office trailer will be placed inside the material storage warehouse for use as office space.

Roux Associates, Inc. (Roux Associates) and Remedial Engineering, P.C. (Remedial Engineering) have prepared this letter on behalf of Amtrak to summarize environmental quality in the portion of the Yard where construction is proposed. As discussed in the OU-6 Remedial Investigation/Feasibility Study (RI/FS) Report, the potential for soil vapor intrusion will be evaluated for the future construction of buildings that will be occupied at the Yard.

Background

As you are aware, OU-4 is defined as soil above the water table (unsaturated) throughout the Yard, excluding OU-1, OU-2, and OU-3, and OU-6 is defined as groundwater, subsurface vapor, and saturated soil beneath the entire Yard. There have been significant previous investigation activities conducted at the Yard as part of OU-4 and OU-6. The cumulative results of unsaturated soil investigations conducted at the Yard in OU-4 were documented in the Operable Unit 4 Remedial Investigation (RI) Report, prepared by Roux Associates, dated October 2, 2008. Additionally, the cumulative results of groundwater, subsurface vapor, and saturated soil investigations conducted at the Yard in OU-6 were documented in the Operable Unit 6 Remedial Investigation/Feasibility Study (RI/FS) Report, prepared by Roux Associates, dated November 12, 2009. Both the OU-4 RI Report and the OU-6 RI/FS Report were submitted to the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH). The NYSDEC issued a Record of Decision (ROD) for OU-4 whereas excavation of the isolated, polychlorinated biphenyl (PCB) hot spots and a single lead hot spot in soil was selected as the permanent remedy for OU-4. The OU-6 RI/FS has been submitted to the NYSDEC and NYSDOH, and a draft Proposed Remedial Action Plan (PRAP) is currently being drafted by NYSDEC.

The OU-6 RI/FS did not identify any site related impacts to groundwater, saturated soil, or vapor intrusion issues, and as such, the proposed remedy for OU-6 is groundwater monitoring with institutional and engineering controls. A summary of relevant findings from OU-4 and OU-6 investigations, as they pertain to the proposed construction area, are presented below for each environmental media (unsaturated soil, groundwater, and subsurface vapor). Note that there was no saturated soil samples collected at the Yard that exceeded the soil cleanup levels for the Yard, and since saturated soil will not be affected by the proposed construction, and since there is no potential for saturated soil exposure issues related to the proposed construction, saturated soil is not discussed further in this letter.

Unsaturated Soil Quality (OU-4) in Proposed Construction Area

As documented in the OU-4 RI Report, the only unsaturated soil exceedance identified in the proposed construction area is a single sample collected from boring PC-10 (see Figure 1). As shown in Figure 1, sample PC-10/1-2, collected from 1 to 2 feet below land surface (ft bls) contained PCBs at a concentration of 26 milligrams per kilogram (mg/kg), marginally exceeding the PCB soil cleanup level for the Yard (as established in the OU-4 ROD) of 25 mg/kg. Additionally, although not technically an exceedance, the sample collected immediately above this exceedance in the 0 to 1 ft bls interval contained PCBs at a concentration of 25 mg/kg.

As shown in Figure 1, this PCB exceedance has been delineated vertically, and horizontally in three directions (north, west, and south). Prior to initiating construction in this area, Amtrak will excavate this PCB hot spot in accordance with the ROD issued for OU-4. Post excavation sampling will be completed to the east to ensure the entire hot spot is removed.

Groundwater Quality (OU-6) in Proposed Construction Area

As documented in the OU-6 RI Report, monitoring wells MW-78 and MW-79 are located hydraulically upgradient of the proposed construction area (MW-78 is less than 100 feet away from the proposed construction area, and MW-79 is approximately 250 feet away from the proposed construction area). The locations of wells MW-78 and MW-79 are presented in Figure 1. The depth to water in this portion of the Yard is approximately 8 feet bls. Both monitoring wells MW-78 and MW-79 were constructed with screens bridging the water table (approximately 5 to 15 feet bls), and therefore, these wells provide shallow groundwater quality data. Groundwater samples were collected from monitoring wells MW-78 and MW-79 on July 5, 2005, and a groundwater sample was collected from monitoring well MW-79 on June 3, 2008. Note that railroad ties were present on top of well MW-78 on June 3, 2008 making the well inaccessible, and therefore a groundwater sample could not be collected from this well at that time.

As shown in Table 1, there were no detections of VOCs in any of the shallow groundwater samples collected from MW-78 or MW-79. Furthermore, as documented in the OU-6 RI/FS Report, there were no exceedances of NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGVs) for semivolatile organic compounds (SVOCs), or PCBs. Iron, manganese, and sodium were detected at concentrations exceeding the AWQSGVs, however, these concentrations did not exceed the site background concentrations established at the Yard for these metals.

Subsurface Vapor (OU-6) in Proposed Construction Area

In June 2005, Roux Associates collected five soil gas samples from four locations (four samples and one duplicate sample) within the proposed construction area. All samples were collected in 6-liter Summa canisters and analyzed for VOCs using USEPA Method TO-15. The soil gas samples were designated PC-7 through PC-10, and the locations are shown on Figure 1. A summary of the soil gas results are presented in Table 2.

Several VOCs were detected at low concentrations. There are no standards, criteria or guidance values for VOCs in soil vapor, however, soil vapor results where compared to the NYSDOH indoor/outdoor air guideline values, as documented in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006. This is an extremely conservative comparison, since the guideline values cited above are for indoor/outdoor air, and the samples collected in the proposed construction area are subsurface soil vapor samples. All soil vapor results were non-detect for the VOCs that have NYSDOH indoor/outdoor air guideline values (methylene chloride, tetrachloroethene [PCE], and trichloroethene [TCE]). Further, in the October 2006 guidance, the NYSDOH published decision matrices to provide guidance on evaluating subslab and indoor air results for the following VOCs: carbon tetrachloride, PCE, 1,1,1-trichloroethane, and TCE. Additionally, in a letter dated June 25, 2007, the NYSDOH expanded the decision matrices to include vinyl chloride, 1,1-dichloroethene, and cis-1,2-dichloroethene. Although the decision matrices cannot be directly applied, since soil vapor samples were collected in the proposed construction area, and subslab vapor and indoor air samples could not have been collected since the warehouse structure has not been constructed yet, it is important to note that all VOCs that have an associated decision matrix were non-detect in all soil vapor samples collected in the proposed construction area. Based on this data there is no indication of a vapor intrusion concern associated with this proposed construction.

Conclusion

Amtrak is planning on constructing a material storage warehouse at the Yard. The proposed material storage warehouse will be built using a structural frame and membrane exterior (i.e., PVC material) and be placed on top of a concrete slab on grade. A portable office trailer will then be placed inside the material storage facility structure. The portable office trailer will have its own heating and ventilation unit. The warehouse structure will also be heated. As mentioned above, the small PCB exceedance in soil will be addressed prior to the construction of the warehouse structure. Based on subsurface vapor data generated in the proposed construction area, vapor intrusion is not likely due to the lack of VOCs in subsurface vapors. This is further supported by the lack of VOCs in shallow groundwater in this area of the Yard. Additionally, the bottom of the occupied trailer that will be placed in the warehouse structure will sit several feet above the slab elevation. This would create an “air gap” between the trailer and the concrete slab and thus further ensuring that subsurface vapors would not enter the occupied structure. The remaining space in the warehouse structure will be used for the storage of equipment, materials, etc. Based on these facts, a vapor barrier and/or a subslab depressurization system (SSDS) would not be required. Unless NYSDOH or NYSDEC objects to this approach, Amtrak plans to move forward with the design and construction of this warehouse building in this in this manner.

Roux Associates will contact you shortly to confirm you are in agreement with the conclusions reached in this letter.

Sincerely,

ROUX ASSOCIATES, INC.

Robert Kovacs
Senior Environmental Scientist

REMEDIAL ENGINEERING, P.C.

Charles J. McGuckin

Charles J. McGuckin, P.E.
Principal Engineer

cc: J. O’Connell, NYSDEC
S. Bollers, NYSDEC
R. Mohlenhoff, Amtrak
J. Duminuco, Roux Associates, Inc.

Table 1. Summary of Volatile Organic Compounds in Groundwater Samples Collected Near Proposed Warehouse Construction Area, Sunnyside Yard, Queens, New York

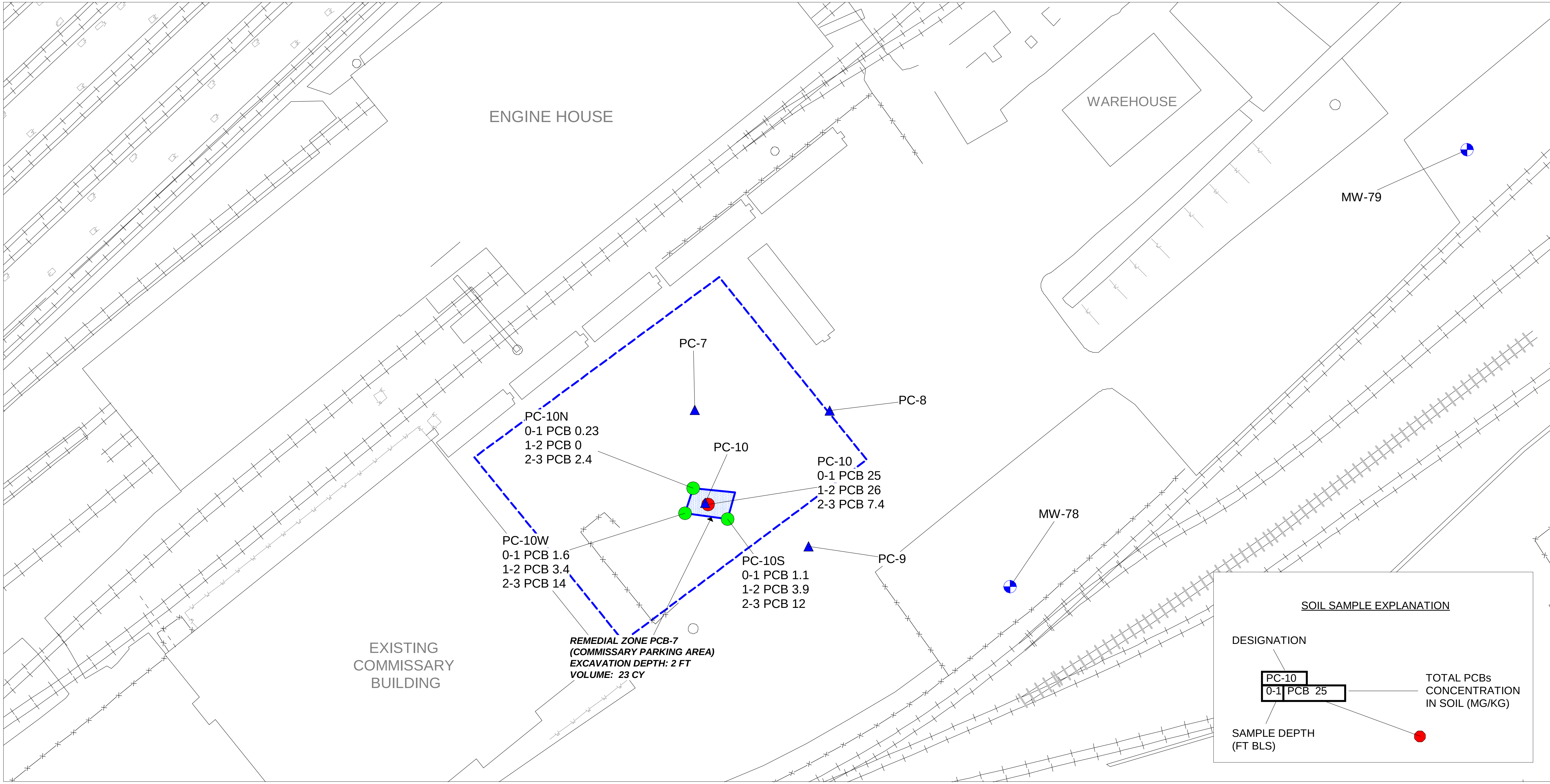
Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	**Sample DesigNRtion:**	MW-78	MW-79	MW-79
		Sample Date:	07/05/05	07/05/05	06/03/08
		Sampled By:	Roux	Roux	Roux
		Screen Interval:	WT	WT	WT
Benzene	1		0.43 U	0.43 U	0.5 U
Toluene	5		0.31 U	0.31 U	1 U
Ethylbenzene	5		0.49 U	0.49 U	1 U
Xylenes (total)	5		0.86 U	0.86 U	2 U
Total BTEX:			0	0	0
1,1,1-Trichloroethane	5		0.45 U	0.45 U	1 U
1,1,2,2-Tetrachloroethane	5		0.28 U	0.28 U	1 U
1,1,2-Trichloroethane	1		0.4 U	0.4 U	1 U
1,1-Dichloroethane	5		0.29 U	0.29 U	1 U
1,1-Dichloroethene	5		0.48 U	0.48 U	1 U
1,2-Dichlorobenzene	3		0.4 U	0.42 U	1 U
1,2-Dichloroethane	0.6		0.22 U	0.22 U	0.5 U
1,2-Dichloroethene (total)	5		NR	NR	NR
1,2-Dichloropropane	1		0.37 U	0.37 U	1 U
1,3-Dichlorobenzene	3		0.28 U	0.3 U	1 U
1,4-Dichlorobenzene	3		0.18 U	0.18 U	1 U
2-Butanone	50		3.3 U	3.3 U	1 U
2-Hexanone	50		0.39 U	0.39 U	1 U
4-Methyl-2-Pentanone	--		0.53 U	0.53 U	1 U
Acetone	50		4 U	4 U	5 U
Bromodichloromethane	50		0.46 U	0.46 U	1 U
Bromoform	50		0.47 U	0.47 U	1 U
Bromomethane	5		0.76 U	0.76 U	1 U
Carbon disulfide	5		0.51 U	0.51 U	1 U
Carbon tetrachloride	5		0.54 U	0.54 U	1 U
Chlorobenzene	5		0.2 U	0.2 U	1 U
Chloroethane	5		0.53 U	0.53 U	1 U
Chloroform	7		0.38 U	0.38 U	1 U
Chloromethane	5		0.32 U	0.32 U	1 U
cis-1,2-Dichloroethene	5		0.5 U	0.5 U	1 U
cis-1,3-Dichloropropene	--		0.18 U	0.18 U	1 U
Dibromochloromethane	50		0.56 U	0.56 U	1 U
Methylene chloride	5		0.87 U	0.87 U	1 U
Methyl tert-butyl ether	10		NA	NA	NA
Styrene	5		0.29 U	0.29 U	1 U
Tetrachloroethene	5		0.31 U	0.31 U	1 U
trans-1,2-Dichloroethene	5		0.5 U	0.5 U	1 U
trans-1,3-Dichloropropene	--		0.4 U	0.4 U	1 U
Trichloroethene	5		0.36 U	0.36 U	1 U
Vinyl acetate	--		NR	NR	1 U
Vinyl chloride	2		0.54 U	0.54 U	1 U

Notes:
BTEX - Benzene, Toluene, Ethylbenzene and Xylene
NA - Not analyzed
NR - Not reported
U - Not Detected
µg/L - Micrograms per liter
NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water-Quality Standards and Guidance Values
WT - Monitoring wells with screen zones that bridge the water table

Table 2. Summary of Volatile Organic Compounds in Soil Vapor Samples Collected Near Proposed Warehouse Construction Area Sunnyside Yard, Queens, New York

Parameter	Sample Designation:	PC-7	PC-7 DUP	PC-8	PC-9	PC-10
	Sample Date:	06/22/05	06/22/05	06/23/05	06/23/05	06/23/05
	Concentration Units:	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
1,1,1-Trichloroethane		15 U	5.5 U	22 U	5.5 U	11 U
1,1,2,2-Tetrachloroethane		19 U	6.9 U	27 U	6.9 U	14 U
1,1,2-Trichloroethane		15 U	5.5 U	22 U	5.5 U	11 U
1,1-Dichloroethane		11 U	4 U	16 U	4 U	8.1 U
1,1-Dichloroethene		11 U	4 U	16 U	4 U	7.9 U
1,2,4-Trichlorobenzene		52 U	19 U	74 U	19 U	37 U
1,2,4-Trimethylbenzene		31	37	110	8.8	15
1,2-Dibromoethane		22 U	7.7 U	31 U	7.7 U	15 U
1,2-Dichlorobenzene		17 U	6 U	24 U	6 U	12 U
1,2-Dichloroethane		11 U	4 U	16 U	4 U	8.1 U
1,2-Dichloroethene (total)		11 U	4 U	16 U	4 U	7.9 U
1,2-Dichloropropane		13 U	4.6 U	18 U	4.6 U	9.2 U
1,2-Dichlorotetrafluoroethane		20 U	7 U	28 U	7 U	14 U
1,3,5-Trimethylbenzene		22	26	46	4.9 U	9.8 U
1,3-Butadiene		16	19	8.8 U	14	29
1,3-Dichlorobenzene		17 U	6 U	24 U	6 U	12 U
1,4-Dichlorobenzene		17 U	6 U	24 U	6 U	12 U
1,4-Dioxane		250 U	90 U	360 U	90 U	180 U
2,2,4-Trimethylpentane		13 U	7	19 U	4.7 U	9.3 U
2-Chlorotoluene		14 U	5.2 U	21 U	5.2 U	10 U
3-Chloropropene		8.8 U	3.1 U	13 U	3.1 U	6.3 U
4-Ethyltoluene		17	22	74	7.4	12
Acetone		170 U	59 U	240 U	100	120 U
Benzene		42	45	13 U	7	21
Bromodichloromethane		19 U	6.7 U	27 U	6.7 U	13 U
Bromoethene		12 U	4.4 U	17 U	4.4 U	8.7 U
Bromoform		29 U	10 U	41 U	10 U	21 U
Bromomethane		11 U	3.9 U	16 U	3.9 U	7.8 U
Carbon Disulfide		22 U	7.8 U	37	7.8 U	16 U
Carbon Tetrachloride		18 U	6.3 U	25 U	6.3 U	13 U
Chlorobenzene		13 U	4.6 U	18 U	4.6 U	9.2 U
Chloroethane		11	11	11 U	2.6 U	5.3 U
Chloroform		14 U	14	20 U	5.9	9.8 U
Chloromethane		14 U	8.5	21 U	5.2 U	10 U
cis-1,2-Dichloroethene		11 U	4 U	16 U	4 U	7.9 U
cis-1,3-Dichloropropene		13 U	4.5 U	18 U	4.5 U	9.1 U
Cyclohexane		59	59	18	3.4 U	20
Dibromochloromethane		24 U	8.5 U	34 U	8.5 U	17 U
Dichlorodifluoromethane		150	150	49 U	49	1200
Ethylbenzene		33	36	100	6.9	11
Freon TF		21 U	7.7 U	31 U	7.7 U	15 U
Hexachlorobutadiene		30 U	11 U	43 U	11 U	21 U
Isopropyl Alcohol		170 U	61 U	250 U	61 U	120 U
m+p-Xylenes		41	48	110	25	36
Methyl Butyl Ketone		29 U	10 U	41 U	10 U	20 U
Methyl Ethyl Ketone		21 U	12	29 U	21	15 U
Methyl Isobutyl Ketone		29 U	10 U	41 U	10 U	20 U
Methylene Chloride		24 U	8.7 U	35 U	8.7 U	17 U
MTBE		25 U	9 U	36 U	9 U	180
n-Heptane		24	26	30	11	22
n-Hexane		42	46	60	18	33
o-Xylene		30	33	43	8.3	14
Styrene		12 U	4.3 U	21	4.3 U	8.5 U
tert-Butyl Alcohol		210 U	76 U	300 U	76 U	150 U
Tetrachloroethene		19 U	6.8 U	27 U	6.8 U	14 U
Tetrahydrofuran		210 U	74 U	290 U	74 U	150 U
Toluene		41	41	270	31	49
trans-1,2-Dichloroethene		11 U	4 U	16 U	4 U	7.9 U
trans-1,3-Dichloropropene		13 U	4.5 U	18 U	4.5 U	9.1 U
Trichloroethene		15 U	5.4 U	21 U	5.4 U	11 U
Trichlorofluoromethane		16 U	5.6 U	22 U	9	220
Vinyl Chloride		7.2 U	2.6 U	10 U	2.6 U	5.1 U
Xylenes (total)		69	78	160	33	48

Notes:
ug/m^3 - Micrograms per cubic meter
U - Compound was analyzed for but not detected



LEGEND:

APPROXIMATE FOOTPRINT OF PROPOSED MATERIAL STORAGE WAREHOUSE CONSTRUCTION

LIMIT OF SOIL EXCAVATION TO ADDRESS PCBs EXCEEDANCE OF 25 MG/KG

PC-7 LOCATION AND DESIGNATION OF SOIL VAPOR SAMPLE

MW-78 LOCATION AND DESIGNATION OF EXISTING SHALLOW MONITORING WELL

PC-10 LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN 25 MG/KG

PC-10N LOCATION AND DESIGNATION OF DELINEATION BORING

NOTES:

OU-4 - OPERABLE UNIT 4

FT - FEET

BLS - BELOW LAND SURFACE

CY - CUBIC YARDS

MG/KG - MILLIGRAMS PER KILOGRAM

PCBs - POLYCHLORINATED BIPHENYLS

N

50' 0 50'

Title:

PROPOSED MATERIAL STORAGE WAREHOUSE CONSTRUCTION AREA - OPERABLE UNIT 4

AMTRAK - SUNNYSIDE YARD

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 1/29/2010	FIGURE	
Prepared by: RSK	Scale: SHOWN		
Project Mgr: HG	Office: NY	1	
File No: AM7115001.WOR	Project: 0055.0071Y007		

APPENDIX B

Community Air Monitoring Plan
(CAMP)

June 11, 2010

COMMUNITY AIR MONITORING PLAN FOR PROPOSED MATERIAL STORAGE WAREHOUSE CONSTRUCTION AREA IN OPERABLE UNIT 4

Sunnyside Yard
Queens, New York

Prepared for:

NATIONAL RAILROAD PASSENGER CORPORATION
Washington, D.C. 20002

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

209 Shafter Street, Islandia, New York 11749 ♦ 631-232-2600

AM0055.0071Y011.151/APB-CAMP-CV

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ATTACHMENT

1.0 INTRODUCTION

Roux Associates, Inc. (Roux Associates) has developed a project-specific Community Air Monitoring Plan (CAMP) to implement real time monitoring at the Amtrak Sunnyside Yard, Queens, New York (Yard) during the Interim Remedial Measure (IRM) planned for the remediation activities (excavation and offsite disposal) at the Proposed Material Storage Warehouse Construction Area in Operable Unit 4 (OU-4). Remedial activities will be performed in accordance with the IRM Work Plan dated April 13, 2010. Investigation results indicate that inorganic compounds (metals), semivolatile organic compounds (SVOCs)/carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and polychlorinated biphenyls (PCBs) are present in soil across the Yard. Based on soil borings/sample analysis, the New York State Department of Environmental Conservation (NYSDEC) set forth compounds of concern (COCs) in soil for OU-4, including PCBs, lead, and total SVOCs. Additionally, NYSDEC requires that a clean cover be maintained in areas that are known to contain cPAHs over 25 milligrams per kilogram (mg/kg). For this particular location where the proposed warehouse is expected to be built, only PCBs and cPAHs are present at levels above the Yard's criteria. Since the IRM includes excavation, soil stockpiling, and backfill activities, particulates will be monitored in addition to volatile organic compounds (VOCs) as part of this CAMP.

The monitoring program will monitor for total volatile organic compounds (VOCs) and particulates at the downwind perimeter of the work area during ground intrusive activities. The design of the CAMP is intended to provide a measure of protection for the downwind community and onsite workers not directly involved with the subject work activities from potential airborne contaminant releases as a direct result of remedial work activities. This plan is consistent with the NYSDEC's Technical Administrative Guidance Memorandum 4031 (Fugitive Dust Suppression and Particulate Monitoring Program) and the New York State Department of Health's (NYSDOH's) Generic Community Air Monitoring Plan guidance document.

Roux Associates will be responsible for the implementation of the CAMP and will have direct and constant communication with all components of the remediation team in order to effectively and instantaneously initiate the necessary Yard controls to prevent and/or minimize any work stoppages related to CAMP issues.

The specifics of the CAMP are presented in the following six (6) sections:

1.1 Establishing Background Conditions

1.2 VOC Monitoring Approach

1.3 Particulate Monitoring Approach

1.4 Meteorological Monitoring Approach

1.5 Available Suppression Techniques

1.6 Reporting

1.1 Establishing Background Conditions

Background air quality monitoring will be conducted during a maximum of two work days prior to the start of the OU-4 remedial activities. Background air quality monitoring will be conducted for up to 8 hours per day, with the timing generally coinciding with the hours work will typically be occurring in OU-4. Background air quality monitoring will be conducted at two sampling stations. Particulate matter (PM-10) will be monitored continuously at each location with a MIE DataRam 4000. The DataRams will be set to take 15-minute running average measurements, and record one average measurement every 15 minutes, including the time and date of the end of the measurement period. The particulate data stored on the DataRams will be periodically transferred to a laptop computer and analyzed as necessary. All particulate will be measured in units of micrograms per cubic meter ($\mu g/m^3$).

VOCs will also be monitored continuously for the background measurement period utilizing RAE Systems MiniRAE 3000 VOC monitors equipped with 10.6 eV lamps. The VOC monitors will be set to take 15-minute running average measurements, and record one average measurement every 15 minutes, including the time and the date of the end of the measurement period. All VOC data will be measured in units of parts per million (ppm).

1.2 VOC Monitoring Approach

During all remedial activities, VOCs will be monitored continuously at the upwind and downwind perimeter of the Work area at temporary monitoring stations. The background data generated during the Background Air Monitoring Task (described above in Section 1.1) will be used to establish general background concentrations and as work progresses, the background information will be updated. The monitoring work will be conducted using MiniRAE 3000 portable VOC monitors or similar type monitors with 10.6 eV lamps for all VOC monitoring. The equipment will be calibrated at least once daily using isobutylene as the calibration gas. One (1) upwind and one (1) downwind monitor will be deployed each day. Each monitoring unit is equipped with an audible alarm to indicate exceedance of the action levels (as summarized in Table 1).

All 15-minute readings will be recorded and made available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision purposes will be recorded. If an exceedance of the action level occurs, an Action Limit Report will be completed identifying the monitoring device location, the measured VOC level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Attachment 1. Additionally, the NYSDEC and NYSDOH will be notified within 24 hours of the VOC Action Limit Report generation. Daily monitoring equipment locations and meteorological conditions will also be documented on a daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Yard. Chemical specific air monitoring using similar methods and procedures as outlined for the VOC baseline sampling will be conducted if perimeter action levels for VOCs are regularly exceeded are prevalent offsite.

1.3 Particulate Monitoring Approach

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the work area at temporary particulate monitoring stations. The particulate monitoring will 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 levels (as summarized in Table 1). Monitoring equipment will be MIE Data Ram 4000 monitors or equivalent. One (1) upwind and one (1) downwind monitor will be deployed each day equipped with an omni-directional sampling inlet and a PM-10 sample head. The data logging averaging period will be set to 15-minutes with time and date stamp recording. Alarm averaging will be set at 90 μg/m^3 above background per 15-minute period. This setting will allow proactive evaluation of work conditions prior to reaching Action Levels of 100 μg/m^3 above background. The equipment is equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

All readings will be recorded and made available for NYSDEC and NYSDOH personnel to review. If an exceedance of the action level occurs, an Action Limit Report will be completed identifying the monitoring device location, the measured particulate level, the activity causing the exceedance, meteorological conditions, and the corrective actions taken, as provided in Attachment 1. Daily monitoring equipment locations and meteorological conditions will also be documented on the daily CAMP Monitoring Location Plan. All documentation will be kept on file at the Yard.

1.4 Meteorological Monitoring

Meteorological data consisting of wind speed, wind direction, temperatures, barometric pressure, and relative humidity will be collected. The measurements will be continuous and 15-minute average values will be digitally recorded by the instrument. Wind direction readings will be utilized to position the VOC and particulate monitoring equipment in appropriate upwind and downwind locations. A Davis Corporation wireless instrument station or equivalent will be used to collect and download all meteorological monitoring data.

1.5 Available Suppression Techniques

Water misting via controlled fire hose and/or dedicated water truck will be utilized as a daily Yard control measure to mitigate the potential for particulate/dust release in work areas and roadways. Excavation methods, material staging and loading methods, and vapor/dust suppression methods will be performed in accordance with the IRM Work Plan dated April 13, 2010, and continually evaluated and modified (as necessary) to alleviate the potential for VOC and particulate releases.

1.6 Reporting

All recorded data will be downloaded and field logged daily, including Action Limit Reports (if any) and daily CAMP monitoring location figures. All records will be maintained onsite for NYSDEC/NYSDOH review. A description of all CAMP-related activities will be included in the IRM Completion Report submitted to the NYSDEC and NYSDOH. Additionally, all CAMP monitoring records will be included in the overall Final Engineering Report that will be submitted to the NYSDEC and NYSDOH. If an Action Limit Report is generated due to VOC exceedances, then the NYSDEC and NYSDOH must be notified within 24 hours.

Table 1. Action Limit Summary for VOCs and Particulates, Proposed Material Storage Warehouse Construction Area, Operable Unit 4 Amtrak Sunnyside Yard, Queens, New York

Contaminant	Downwind Action Levels*	Action/Response
Volatile Organic Compounds (VOCs) (Monitoring Via Photoionization Detector and Odor Observation)	< 5 ppm	1. Resume work with continued monitoring.
	5 ppm < level < 25 ppm	1. Work activities must be temporarily halted, source vapors must be identified, suppression techniques employed to abate emissions, and monitoring continued. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) are below 5 ppm over background, resume work.
	> 25 ppm	1. Identified contributing ground intrusive activities must be halted and vapor suppression techniques must be evaluated and modified until monitoring indicates VOC levels below the action level. 2. After these steps, if VOC levels (200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or structure, whichever is less) are below 5 ppm over background, resume work.
Particulates (Monitoring Via Particulate Meter and Observation)	< 100 ug/m^3	1. If dust is observed leaving the work area, then dust control techniques must be implemented or additional controls used.
	100 ug/m3 < level < 150 ug/m^3	1. Employ dust suppression techniques. 2. Work may continue with dust suppression techniques provided that the downwind PM-10 particulate concentration does not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
	> 150 ug/m^3	1. STOP work. 2. Re-evaluate activities, modify dust suppression techniques. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

* 15-minute running time-weighted average (twa) above background. Particulate readings are based on the respirable (PM-10) fraction. Background readings are taken at upwind locations relative to Work Areas or Exclusion Zones.

Attachment 1

Action Limit Report

ACTION LIMIT REPORT

Project Location: Proposed Material Storage Warehouse Construction Area, OU-4, Amtrak Sunnyside Yard, Queens, New York

Date: ______________________ Time: ______________________

Name: ____

Contaminant: PM-10: ______________________ VOC: ______________________

Wind Speed: ______________ Wind Direction: ______________________

Temperature: ______________ Barometric Pressure: ______________________

DOWNWIND DATA

Monitor ID #: ______________ Location: ______________ Level Reported: ______________

Monitor ID#: ______________ Location: ______________ Level Reported: ______________

UPWIND DATA

Monitor ID #: ______________ Location: ______________ Level Reported: ______________

Monitor ID#: ______________ Location: ______________ Level Reported: ______________

BACKGROUND CORRECTED LEVELS

Monitor ID #: ______________ Location: ______________ Level Reported: ______________

Monitor ID#: ______________ Location: ______________ Level Reported: ______________

ACTIVITY DESCRIPTION

CORRECTIVE ACTION TAKEN