Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Amtrak Sunnyside Yard Site
Operable Unit No. 4
Long Island City, Queens County, New York
Site Number 241006

March 2009

New York State Department of Environmental Conservation
DAVID A. PATERSON, *Governor* ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Amtrak Sunnyside Yard Inactive Hazardous Waste Disposal Site
Operable Unit No. 4
Long Island City, Queens County New York
Site No. 241006

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for: Operable Unit 4 of the Amtrak Sunnyside Yard site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for: Operable Unit 4 of the Amtrak Sunnyside Yard inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the Amtrak Sunnyside Yard, Operable Unit 4 site and the criteria identified for evaluation of alternatives, the Department has selected excavation and off-site disposal of soil impacted with the Chemicals of Concern (COCs) in excess of the modified Site-specific Soil Cleanup Levels for these COCs. The components of the remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program, which included pre-excavation soil characterization.

2. Excavation and off-site disposal of soil classified as PCB hazardous waste;

3. Excavation and off-site disposal of soil exceeding the modified Site specific soil cleanup levels for PCBs, SVOCs and lead.

4. Removal of the Track 4 Inspection Pit, characterization of soil surrounding the inspection pit, and excavation of surrounding soil with concentrations exceeding the modified site soil cleanup levels, if required.

5. All excavations will be backfilled with clean fill from off-site sources. Imported material will meet the more stringent requirements for Protection of Public Health for commercial use or Protection of Groundwater as defined in 6 NYCRR Part 375-6.7(d).

6. Existing surface covers in the active rail yard will be maintained. A one foot thick clean cover consisting of clean fill, as referenced in bullet 5. above, or ballast will be established and/or maintained over areas that are known to contain cPAHs at concentrations greater than 25 ppm and are not presently covered by buildings, tracks or pavement.

7. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering controls: (a) address residual contaminated soils that may be excavated onsite during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) identification of any use restrictions on the site; (d) fencing to control site access.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

MAR 3 1 2009

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for Operable Unit 4 (OU-4) at Amtrak Sunnyside Yard, Site No. 241006. OU-4 is defined as soil above the water table. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this proposed remedy. As more fully described in Sections 3 and 5 of this document, releases associated with fueling operations, maintenance activities, train-mounted transformers, historic fill activities, and peeling lead-based paint from the four bridges that span the Site have resulted in the disposal of hazardous wastes, including polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons considered by the NYSDOH to be carcinogenic (cPAHs), and lead. CPAHs are a subset of SVOCs. As a result of these releases, PCBs, SVOCs, and lead have been identified as compounds of concern (COCs). These wastes have contaminated the unsaturated soil at the site, and have resulted in:

- a significant threat to human health associated with potential exposure to soil impacted with PCBs, cPAHs, SVOCs, and lead.
- a significant environmental threat associated with the potential impacts of contaminants to groundwater.

To eliminate or mitigate these threats, the Department has selected excavation and off-site disposal of soil impacted with the COCs in excess of the modified Site-specific Soil Cleanup Levels for these COCs.

The selected remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform to officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria, and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

Sunnyside Yard (the Site) is located at 39-29 Honeywell Street, Long Island City, Queens County, New York. The Site is a railroad maintenance and storage facility that currently encompasses approximately 133 acres. As shown on Figure 1, Newtown Creek, which defines the border between Queens and Kings Counties, is located less than 0.5 mile south of the western portion of the Site. The Site is bordered by commercial/residential

properties, with Northern Boulevard located to the north, 42nd Place located to the east, Thompson Avenue to the west, and Skillman Avenue located to the south.

The Site (including OU-4) is underlain by the following geologic units (in order of increasing depth): fill (including ballast, cinders/ash), wetland deposits, Upper Pleistocene glacial deposits, and crystalline bedrock. Fill activities, which were part of major topographic changes engineered at the Site, occurred during construction in the early 1900's.

The fill is predominantly comprised of reworked glacial deposits (unstratified sand, silt, clay and gravel) and railroad ballast, with lesser amounts of ash, cinders and construction debris. With the exception of paved areas, buildings, and vegetated areas, the railroad ballast is ubiquitous at the surface throughout the Site.

Groundwater beneath the Site (including OU-4) occurs under water-table (unconfined) conditions in fill deposits, wetlands, or the Upper Pleistocene glacial deposits. The saturated Upper Pleistocene deposits comprise the Upper Glacial aquifer. The depth to groundwater across OU-4 varies from one to fifteen feet below ground surface (bgs).

Groundwater within the shallow deposits flows predominantly west across the Site. However, groundwater between Queens Boulevard and Honeywell Street flows northerly and northwesterly toward the buried flow path of the Dutch Kills Creek and/or East River. In the deeper deposits, groundwater predominantly flows west across the Site.

Operable Unit (OU) No. 4, which is the subject of this document, consists of the soil above the water table (unsaturated zone) at the Site, excluding OU-1, OU-2, and OU-3. OU-4 comprises 120 of the total 133 acres. An operable unit represents a portion of the site remedy that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The remaining operable units for this site are:

- OU-1: Soil above the water table within the footprint of the High Speed Trainset Facility Service and Inspection (HSTF S&I) Building. A ROD was issued for OU-1 in August 1997, and the remedial work was completed in April 1998.
- OU-2: Soil above the water table within the footprint of the HSTF S&I Building ancillary structures. The northern boundary of OU-2 extends on to Long Island Rail Road (LIRR) property. A No Further Action ROD was issued for OU-2 in November 1997.
- OU-3: Soil and separate phase petroleum hydrocarbon accumulation above the water table and soil below the water table within 8 acres in the north central portion of the Site. The northern boundary of OU-3 extends on to LIRR property. A ROD was issued for OU-3 in March 2007. Remediation started in June 2008 and has been temporarily suspended as a result of odor complaints.
- OU-5: Sewer system (water and sediment) beneath the Site. The RI is ongoing.
- OU-6: Saturated soil and the groundwater beneath the Site. The RI is ongoing.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal 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 Site officially opened on November 27, 1910. On April 1, 1976, the Consolidated Rail Corporation (Conrail) acquired the Site, and the same day conveyed it to Amtrak, which has continued to operate it as a storage and maintenance and train layover facility for electric and diesel locomotives and railroad cars for Amtrak and New Jersey Transit Corporation (NJTC).

Past releases of PCBs is 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 Site, these cinders and ash were used from time to time as fill material throughout OU-4 and are still present at the Site today. Cinders and ash are known to contain high levels of lead and SVOCs, primarily cPAHs. In addition to the fill activities, the presence of lead is attributed to maintenance of the four bridges that span the Site, as shown on Figure 2.

3.2: Remedial History

In December 1986, the Department listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Department, Amtrak, and NJTC entered into a Consent Order on September 21, 1989, modified on August 25, 1993 and February 4, 1998. The Order obligates the responsible parties to implement a RI/FS only remedial program. The Department and the PRPs (Amtrak and NJTC) are currently in the process of negotiating a separate Consent Order to implement the selected remedy.

SECTION 5: SITE CONTAMINATION

An RI/FS has been conducted to evaluate the alternatives for addressing the significant threats to human health and the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between October 1990 and August 2007. The field activities and findings of the investigation are described in the RI report. Investigations in OU-4 include the Phase I RI,

Phase II RI, numerous track maintenance activities, utility installation, and construction related sampling activities. Seventeen Areas of Concern (Areas) were identified during the Phase I and Phase II. Subsequently, the Site was divided into Operable Units, as described in Section 2. With the exception of Areas 1, 6, and 7, the remaining fourteen Areas are located within OU-4 and are often referenced by Area designation.

The Phase I RI, performed from October 1990 through March 1991, was a comprehensive, facility-wide investigation to identify and determine the nature and extent of contamination primarily associated with the separate phase petroleum previously identified in Area 1 (OU-3), but also to provide an overall assessment of any other areas of contamination at the Site. The Phase II RI was performed from August 1992 through August 1994. The prime objectives of the Phase II RI in relation to OU-4 were to provide further delineation of contaminated areas and confirm analytical results of samples collected during the Phase I RI.

Subsequent to the Phase I and Phase II RIs, numerous soil sampling investigations were performed, on behalf of Amtrak and NJTC, to coincide with track maintenance, utility installation, and construction. Soil sample locations are shown on Figure 3. Several of these remedial investigations identified soil samples with concentrations exceeding the Site soil cleanup levels for the COCs. As part of these Site maintenance activities, the identified COC exceedances were often excavated so the maintenance/construction activities could be completed and consequently serving as an Interim Remedial Measure (IRM). Similarly, UST IRMs consisting of the removal or abandonment of several USTs were performed. IRMs are discussed further in Section 5.2.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the unsaturated soil contains contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Soil SCGs are based on the Department's Cleanup Objectives ("Technical and Administrative Guidance Memorandum [TAGM] 4046 – Determination of Soil Cleanup Objectives and Cleanup Levels" and 6 NYCRR Subpart 375-6 – Remedial Program Soil Cleanup Objectives) for total SVOCs (500 ppm).

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

As described in the RI report, many soil samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are PCBs, inorganics (metals), and total cPAHs. For comparison purposes, where applicable, SCGs are provided for each medium. Chemical concentrations are reported in parts per million (ppm).

Figures 4 through 10 and Table 1 summarize the degree of contamination for the contaminants of concern in unsaturated soil and compare the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil

A total of 851 surface soil samples were collected within the confines of OU-4 and analyzed for one or more of the analyte groups. As shown on Table 1, the number of surface soil samples analyzed was 786 for PCBs, 471 for lead, 14 for other metals, 13 for volatile organic compounds (VOCs), 33 for SVOCs, and 436 for cPAHs. The Site specific soil cleanup levels were exceeded as follows: PCBs (60 out of 786); lead (52 out of 471); and cPAHs (31 out of 436). Many of these exceedances were in surface soils which were remediated through the IRMs. The remaining surface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Subsurface Soil

A total of 456 subsurface soil samples were collected from OU-4 and analyzed for one or more of the analyte groups. As shown on Table 1, the number of subsurface samples analyzed was 455 for PCBs, 354 for lead, 20 for other metals, 48 for VOCs, 47 for SVOCs, and 376 for cPAHs. The Site specific soil cleanup levels were exceeded as follows: PCBs (13 out of 455); lead (17 out of 354); and cPAHs (18 out of 376). Many of these exceedances were in subsurface soils which were remediated through the IRMs. The remaining subsurface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Waste Materials

Sample PIT-4, shown on Figure 5, is a sediment sample that was collected from within the Track 4 Inspection Pit. This sample exceeded the total PCB soil cleanup level with a concentration of 470 ppm. The Track 4 Inspection Pit is constructed of concrete and measures approximately 50 feet long, 6 feet wide, and 2 feet deep. This subsurface structure and surrounding soil requires additional investigation and will be addressed in the remedy selection process.

Surface Water

No site-related surface water contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for surface water.

Sediments

No site-related sediment contamination of concern was identified during the RI/FS. Therefore, no remedial alternatives need to be evaluated for sediment.

Soil Vapor/Sub-Slab Vapor/Air

Since groundwater contamination will be addressed in OU-6, any potential soil vapor impacts will be addressed in OU-6.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Several of the remedial investigation activities that were performed for track maintenance, construction, and bridge rehabilitation identified soil samples with concentrations exceeding the Site soil cleanup levels for the COCs. As part of these Site

maintenance activities, the identified COC exceedances were often excavated so the maintenance/construction activities could be completed and consequently served as an IRM. In summary, 29 PCB exceedances, 28 cPAH exceedances, and 15 lead exceedances were removed by soil IRMs, totaling 7,200 cubic yards of soil. Similarly, UST IRMs consisting of the removal or abandonment of several USTs were performed. The locations of soil IRMs and UST IRMs are shown on Figure 12.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 7.0 of the RI report. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Potential Exposure Pathways

Soil

Receptors may come into direct contact with contaminated soil within OU-4 while performing routine job-related activities. During the course of contacting the soil on their skin, persons, may under some circumstances, accidentally ingest the soil. While exposure to fugitive dust may occur on a limited basis, the primary routes for on-site receptors to come into contact with chemicals present in soil are dermal absorption and incidental ingestion.

Inhalation of fugitive dust is not considered a viable exposure pathway because the 120-acre area of OU-4 is 96% covered by surface cover and lies in a basin-like area with ground elevations that range from approximately 10 to 25 feet below the surrounding land surface (Figure 11). The surface cover consists of the following:

- Track – includes tracks, ballast, concrete and paved walkways (54.27%);
- Asphalt/Concrete Pavement and Buildings (24.66%);
- Brush/Vegetation (17.21%); and
- Exposed Ground (3.82%).

The Site topography and drainage patterns are strongly influenced by a large number of railroad tracks and bulkheaded areas throughout the Site. Stormwater at the Site partly infiltrates *in situ* and is partly collected in catch basins of the combined sanitary and stormwater sewer system. Overland surface runoff does not appear to be a source of contamination to adjacent properties. Therefore, exposure to stormwater from the Site at off-site properties is an incomplete exposure pathway. The potential exposure to contaminants in the sewer system will be addressed as part of the OU-5 RI/FS.

Inhalation of vapors from volatile organic compounds volatilizing from soils into the ambient air during soil moving activities is not considered a viable exposure pathway because the number of VOCs detected in soil are limited and concentrations are sufficiently low (maximum concentrations below 0.5 ppm) that ambient air levels could not rise to a level of concern. While exposure to fugitive dust may occur on a very limited basis, the primary exposure routes for on-site receptors to chemicals present in soil is via dermal absorption and incidental ingestion.

Future potential exposures that could occur during soil excavations will be addressed in the Health and Safety Plan for the site workers and a Soils Management Plan.

Groundwater

Ingestion or dermal contact with contaminated groundwater by site occupants is not expected because the area is served by public water and no private supply wells have been identified in the vicinity of the site. Construction or utility workers conducting subsurface activities that intersect the groundwater could be exposed site-related contaminants of concern via dermal contact and/or incidental ingestion. Inhalation of vapors from volatile organic compounds (VOC) volatilizing from the soil into the ambient air during soil moving activities is not considered a likely exposure pathway since the number of VOC detected in the soil are limited and sufficiently low that ambient levels would not rise to a level of concern. The higher VOC concentrations are at depth and therefore, do not have a viable exposure pathway to volatilize into the ambient air.

The potential exposure to contaminants in groundwater (including associated soil vapor) will be addressed as part of the OU-6 RI/FS.

One of the onsite petroleum releases is in OU-3 and is being remediated at this time in accordance with the NYSDEC ROD. Performance monitoring will be conducted to evaluate the effectiveness of the OU–3 remedy. The other release adjacent to Area 14 will be addressed in the OU-6 RI/FS. This release has naturally attenuated from a one-time detection of petroleum sheen to no exceedances of groundwater quality standards. It will be monitored as part of OU–6.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The following environmental exposure pathways and ecological risks have been identified:

The site poses an environmental threat associated with the potential impacts of contaminants to groundwater from soils impacted with the COCs. There are no wetlands or other exposure pathways to fish and wildlife receptors in OU-4. Off-site related impacts to groundwater will be addressed as part of the ongoing OU-6 RI.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this operable unit are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to PCBs, cPAHs, SVOCs, and lead in soil and Track 4 Inspection Pit; and
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards.

Further, the remediation goals for the site include attaining to the extent practicable:

- The selected set of Site specific soil cleanup levels for PCBs, lead, and SVOCs and/or cPAHs;
- Technical and Administrative Guidance Memorandum [TAGM] 4046 for residual contamination in soil and 6 NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives (SCOs); and
- PCB cleanup requirements in 40 CFR Section 761.61 (pertaining to PCB remediation waste).

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies, or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for OU-4 were identified, screened, and evaluated in the FS report which is available at the document repositories established for this site.

Due to the ongoing nature of operations at the Site, thermal desorption and incineration were not considered as viable remedial alternatives for the PCBs (which is the driver of the technology selection). Therefore, the remaining presumptive/proven remedial technology for PCBs, as per NYSDEC Guidance Policy DER-15, is excavation and off-site disposal. . Given this regulatory requirement, excavation and off-site disposal is the presumptive remedy for addressing this soil. Rather than evaluating various technology based alternatives, the OU-4 FS evaluated the use of excavation and off-site disposal for various COC cleanup levels scenarios

A summary of the remedial alternatives that were considered for this site is discussed below.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated unsaturated surface and subsurface soil at the site. As stated above, sewer water and sediment, saturated soil, and groundwater will be addressed as part of OU-5 and OU-6 at a later date.

For ease of reference and assembly of remedial alternatives, areas with exceedances of the Site specific cleanup levels have been designated Remedial Zones PCB-1 through PCB-12, CPAH-1 through CPAH-9, and LEAD-1 through LEAD-20. The Remedial Zones are shown on Figures 14 and 15.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave OU-4 in its present condition and would not provide any additional protection to human health or the environment. Since there are no remedial actions for this alternative, there is no capital cost associated with Remedial Alternative 1.

Alternative 2: Soil Excavation/Off-site Disposal - Predisposal Unrestricted Use SCOs

Remedial Alternative 2 consists of the excavation of soil impacted with PCBs, lead, and cPAHs at concentrations above the 6 NYCRR Part 375 Unrestricted Use SCOs and removal of the Track 4 Pit. Development of this alternative satisfies the remediation goal of evaluating the technical feasibility of remediation to predisposal conditions. Remediation to predisposal conditions would entail excavation of all soil containing PCB concentrations and historic fill containing cPAH and lead concentrations greater than the Unrestricted Use SCOs.

The approximate areal extent of OU-4 is 120 acres. As shown on Figure 13, comparison of the analytical dataset to the Unrestricted Use SCOs indicates that the majority of OU-4 would need to be addressed under this alternative. However, there are buildings that have been present at the Site since the early 1900s which would not have cause for underlying historic fill or PCB-impacted soil. Similarly, there are areas of the Site that have been remediated by soil IRMs, as discussed in the OU-4 RI. The buildings and remediated areas comprise approximately 5 acres. To compensate for the basin like topography of the Site (side slopes totaling up to 4 to 5 acres would potentially need to be addressed by a remedy using Unrestricted Use SCOs), the estimated areal extent of 120 acres was used for evaluation purposes. The extent of COC impacted soil and historic fill is typically limited to 3 ft bgs. Based on these assumptions, this alternative would result in the removal of approximately 508,800 cubic yards of soil. The Track 4 pit would also be removed in its entirety.

The cost to implement Alternative 2 is presented below. Although an estimated cost has been included in the capital cost to account for logistical planning, the Alternative cost does **not** include Amtrak's expense for the removal and replacement of railroad tracks, temporary facilities, utilities, pavement, roadways, and other work areas, expenses associated with additional track out of service time, and overtime costs for Amtrak personnel.

Present Worth----------*$180,000,000*
Capital Cost:----------*$180,000,000*
Annual Costs:
(Years 1-30):----------*$0*

Alternative 3: Soil Excavation/Off-site Disposal – Existing Site Specific Soil Cleanup Levels

For Remedial Alternative 3, soil with COC concentrations exceeding the existing Site specific soil cleanup levels would be excavated. The existing Site specific soil cleanup levels are:

- Total PCBs – 25 ppm;
- Total cPAHs – 25 ppm; and
- Lead – 1,000 ppm.

An estimated 1,430 cubic yards of PCB impacted soil (Remedial Zones PCB-1 through PCB-12), 910 cubic yards of cPAH impacted soil (Remedial Zones CPAH-1 through CPAH-9), and 1,360 cubic yards of lead impacted soil (Remedial Zones LEAD-1 through LEAD -20) would require removal. Areas of soil containing COC concentrations above the existing Site specific soil cleanup levels are shown on Figure 14. Pre-characterization samples would be collected prior to excavation in areas not horizontally and vertically delineated. The soil within these delineated areas would be excavated and transported off-site for disposal. In total, an estimated 3,700 cubic yards of soil would be excavated. Each excavation would be backfilled with clean fill from off-site sources.

Several of the Remedial Zones are located within active tracks that cannot be addressed without extensive disturbance to the Site's daily operations. Detailed planning and coordination would be required for scheduling track outages, rerouting trains to maintain operations, and the removal and reconstruction of track. There are Remedial Zones, however, that are located in open areas that are more easily accessible and could be addressed on a shorter timetable. For those remedial zones that would not be addressed in the short term, the existing pavement would serve as an asphalt/concrete cover until soil excavation is performed. Similarly, the trackbed ballast would serve as an interim engineering control that prevents direct contact with underlying COC impacted soil.

Remedial Zone PCB-2 consists of the concrete inspection pit within Track 4. This pit would be removed in its entirety. Characterization soil samples would be collected from soil at each end and below the bottom of Track 4 Pit to identify any impacts to soil from historical usage of this inspection pit. In the event the soil sampling results indicate that PCB concentrations exist above the existing Site specific soil cleanup level in the surrounding and underlying soil, excavation would be performed. It is estimated that 30 cubic yards of soil may require excavation. Post-excavation samples would be collected only if the characterization soil sample results do not provide horizontal and vertical delineation of the extent of contamination.

Remediation-derived waste to be transported off-site for disposal would include:

- PCB-impacted non-hazardous soil – 120 cubic yards (estimated)
- NYS B007 hazardous waste/TSCA PCB Remediation Waste – 1,310 cubic yards (estimated)
- Non-hazardous soil (cPAH and lead impacted) – 2,270 cubic yards (estimated)
- Bulk concrete from the Track 4 Pit removal – 27 cubic yards (estimated)

A Community Air Monitoring Plan (CAMP) that specifies the components of this program would be developed in accordance with the NYSDOH Generic Community Air Monitoring Plan. The air monitoring program would include real-time continuous particulate monitoring using particulate monitoring devices.

VOCs and odors are not expected to be a concern due to the nature of impacts present in OU-4. Dust would be controlled by spraying a water mist over the work area if perimeter action levels established in the CAMP are exceeded. This would be generated by connecting a misting device to a hose, which would be connected to any potable water source. The degree to which these measures would be used would depend on particulate levels in ambient air at the perimeter of the Site as determined through implementation of the CAMP.

Implementation of this alternative would remediate OU-4 for restricted industrial use. For this reason, a Site Management Plan that outlines the long-term institutional and engineering control plan would be developed. A Site Management Plan would be developed to include the Soil Management Plan and a program for institutional and engineering controls. An Environmental Easement would be recorded to include: 1) Site Management Plan; 2) prohibition on use of groundwater as a source of potable water; 3) a condition of no change in site use; and 4) controlled access to the site.

The cost to implement Alternative 3 is presented below. Although an estimated cost has been included in the capital cost to account for logistical planning, the Alternative cost does **not** include Amtrak's expense for the removal and replacement of railroad tracks, temporary facilities, utilities, pavement, roadways, and other work areas, expenses associated with additional track out of service time, and overtime costs for Amtrak personnel.

Present Worth: ----------*$2,200,000*
Capital Cost: ----------*$2,200,000*
Annual Costs:
(Years 1-5): ----------*$0*
(Years 5-30):----------*$0*

Alternative 4: Soil Excavation/Off-site Disposal – Modified Site Specific Soil Cleanup Levels

For Remedial Alternative 4, soil with COC concentrations exceeding the proposed Site soil cleanup levels would be excavated and transported off-site for disposal. The modified Site specific soil cleanup levels are as follows:

- Total PCBs – 25 ppm, in accordance with 6 NYCRR Part 375
- Total SVOCs – 500 ppm, in accordance with TAGM 4046
- Lead – 3,900 ppm, in accordance with 6 NYCRR Part 375

An estimated 1,430 cubic yards of PCB impacted soil (Remedial Zones PCB-1 through PCB-12) and 60 cubic yards of lead impacted soil (Remedial Zone 20) would require removal. There are no exceedances of the proposed total SVOC soil cleanup level. Areas of soil containing PCB and lead concentrations above the proposed Site soil cleanup levels are shown on Figure 15. Pre-characterization samples would be collected prior to excavation in areas not horizontally and vertically delineated. The soil within these delineated areas would be excavated and transported off-site for disposal. In total, an estimated 1,490 cubic yards of soil would be excavated. Each excavation would be backfilled with clean fill from off-site sources.

Several of the Remedial Zones are located within active tracks that cannot be addressed without extensive disturbance to the Site's daily operations. Detailed planning and coordination would be required for scheduling track outages, rerouting trains to maintain operations, and the removal and reconstruction of track. There are Remedial Zones, however, that are located in open areas that are more easily accessible and could be

addressed on a shorter timetable. For those remedial zones that would not be addressed in the short term, the existing pavement would serve as an asphalt/concrete cap until soil excavation is performed. Similarly, the trackbed ballast would serve as an interim engineering control that prevents direct contact with underlying PCB and lead impacted soil.

Remedial Zone PCB-2 consists of the concrete inspection pit within Track 4. This pit would be removed in its entirety. Characterization soil samples would be collected from soil at each end and below the bottom of Track 4 Pit to identify any impacts to soil from historical usage of this inspection pit. In the event the soil sampling results indicate that PCB concentrations exist above the modified Site specific soil cleanup level in the surrounding and underlying soil, excavation would be performed. It is estimated that 30 cubic yards of soil may require excavation. Post-excavation samples would be collected only if the characterization soil sample results do not provide horizontal and vertical delineation of the extent of contamination.

Remediation-derived waste to be transported off-site for disposal would include:

- PCB-impacted non-hazardous soil – 120 cubic yards (estimated)
- NYS B007 hazardous waste/TSCA PCB Remediation Waste – 1,310 cubic yards (estimated)
- Non-hazardous lead impacted soil – 60 cubic yards (estimated)
- Bulk concrete from the Track 4 Pit removal – 27 cubic yards (estimated)

A CAMP that specifies the components of this program would be developed in accordance with the NYSDOH Generic Community Air Monitoring Plan. The air monitoring program would include real-time continuous particulate monitoring using particulate monitoring devices. VOCs and odors are not expected to be a concern due to the nature of impacts present in OU-4. Dust would be controlled by spraying a water mist over the work area if perimeter action levels established in the CAMP are exceeded. This would be generated by connecting a misting device to a hose, which would be connected to any potable water source. The degree to which these measures would be used would depend on particulate levels in ambient air at the perimeter of the Site as determined through implementation of the CAMP.

Implementation of this alternative would remediate OU-4 for restricted industrial use. For this reason, a Site Management Plan that outlines the long term institutional and engineering control plan would be developed. A Site Management Plan would be developed to include the Soil Management Plan and a program for institutional and engineering controls. An Environmental Easement would be recorded to include: 1) Site Management Plan; 2) prohibition on use of groundwater as a source of potable water; 3) a condition of no change in site use; and 4) controlled access to the site.

The cost to implement Alternative 4 is presented below. Although an estimated cost has been included in the capital cost to account for logistical planning, the Alternative cost does **not** include Amtrak's expense for the removal and replacement of railroad tracks, temporary facilities, utilities, pavement, roadways, and other work areas, expenses associated with additional track out of service time, and overtime costs for Amtrak personnel.

Present Worth: ----------*$1,100,000*
Capital Cost: ----------*$1,100,000*
Annual Costs:
(Years 1-5):----------*$0*
(Years 5-30):----------*$0*

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York State. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

5. Reduction of Toxicity, Mobility, or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision. The costs for each alternative are presented in Table 4.

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Remedial Alternative 4: Soil Excavation/Off-site Disposal – Modified Site Specific Soil Cleanup Levels as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives presented in the FS.

Alternative 4 has been selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It will achieve the remediation goals for the site by removing all soil with PCB, SVOC and lead concentrations exceeding the modified Site specific soil cleanup levels, which pose the most significant threat to public health and the environment.

Alternative 1 would not adequately satisfy the threshold criteria for protecting human health and the environment nor comply with the SCGs. Alternative 2 would best satisfy the threshold criteria for protecting human health and the environment and comply with the SCGs, but is not feasible to implement at an active railyard and is prohibitively expensive. Therefore, Alternatives 1 and 2 are not considered further in this evaluation.

Because Alternatives 3 and 4 satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site.

Alternatives 3 and 4 provide similar levels of long-term effectiveness and permanence. By employing the same technology, Alternatives 3 and 4 provide fairly equal levels of long term effectiveness and permanence of the remedy. Soil containing hazardous levels of PCBs would be permanently removed from OU-4 under both alternatives. Excavation to the selected set of Site specific soil cleanup levels (i.e., either existing or modified levels) would satisfy requirements for addressing COC impacted soil through permanent removal from OU-4.

Alternative 3 and 4 both include removal of all soil characterized as NYS B007 listed PCB hazardous waste. Based on the varying cleanup levels for SVOCs/cPAHs and lead associated with Alternatives 3 and 4, varying volumes of non-hazardous levels of COCs would remain following soil excavation. Remedial Alternative 3 would remove 3,700 cubic yards of soil and Alternative 4 would remove 1,490 cubic yards of soil.

The quantities of excavated soil associated with Alternatives 3 and 4 represent manageable, medium scale excavations and would pose comparable short term impacts to remedial and Amtrak workers. The short term impacts are increased for Remedial Alternative 3 based on the increased volume of soil to be removed, requiring more truck traffic. The short term concerns can be reduced through the use of engineering controls.

Alternatives 3 and 4 would be technically feasible to implement. Although technically feasible, Remedial Alternative 3 and 4 would both pose implementability difficulties due to the location of some of the remedial

zones in active track areas. Remedial zones in open areas are accessible with little administrative effort and could be addressed shortly after remedy selection. The remaining remedial zones in railroad track areas would be excavated on a scheduled program consistent with track maintenance and new construction activities with existing surface covers being maintained in the interim. Based on the increased number of remedial zones to be addressed for Alternative 3 and their locations within track areas, this alternative is anticipated to require a significantly greater impact on Site operations and a much longer timeframe to complete than Alternative 4. Amtrak is presently coordinating with internal track and operation departments to develop an implementation schedule. A detailed schedule would be provided in the Remedial Action Work Plan.

The cost of the alternatives varies significantly. The direct costs for Alternative 3 are significantly greater than Alternative 4 primarily associated with soil disposal to address cPAHs and lead at existing Site specific cleanup levels. Alternative 4 provides a more cost effective alternative to Alternative 3 while achieving an equivalent level of protection of human health and the environment.

The estimated capital cost to implement the remedy is $1,100,000.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program, which included pre-excavation soil characterization.

2. Excavation and off-site disposal of soil classified as PCB hazardous waste;

3. Excavation and off-site disposal of soil exceeding the modified Site specific soil cleanup levels for PCBs, SVOCs and lead.

4. Removal of the Track 4 Inspection Pit, characterization of soil surrounding the inspection pit, and excavation of surrounding soil with concentrations exceeding the modifed Site soil cleanup levels, if required.

5. All excavations will be backfilled with clean fill from off-site sources. Imported material will meet the more stringent requirements for Protection of Public Health for commercial use or Protection of Groundwater as defined in 6 NYCRR Part 375-6.7(d).

6. Existing surface covers in the active rail yard will be maintained. A one foot thick clean cover consisting of clean fill, as referenced in bullet 5. above, or ballast will be established and/or maintained over areas that are known to contain cPAHs at concentrations greater than 25 ppm and are not presently covered by buildings, tracks or pavement.

7. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering

controls: (a) address residual contaminated soils that may be excavated onsite during future redevelopment. The plan will require soil characterization and, where applicable, disposal/reuse in accordance with NYSDEC regulations; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) identification of any use restrictions on the site; (d) fencing to control site access.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- Fact sheets were released to members of the public contact list whenever important milestones were reached. Such fact sheets described in detail the activities performed and the goals achieved at those milestones.
- A public meeting was held on Wednesday, March 18, 2009 to present and receive comment on the Proposed Remedial Action Plan (PRAP).

TABLE 1
Nature and Extent of Contamination
October 1990 to August 2007

SURFACE SOIL	Potential Contaminants of Concern	Concentration Range Detected[1] (ppm)[a]	Screening Criteria[b] (ppm)[a]	Frequency Exceeding Screening Criteria
Volatile Organic Compounds (VOCs)	Acetone	0.02 - 0.035	1000	0/13
	Carbon Disulfide	0.0044 - 0.0077	--	0/13
	Chloroform	0.0038 - 0.0038	700	0/13
	Methylene Chloride	0.003 - 0.032	1000	0/13
	Tetrachloroethene	0.005 - 0.005	300	0/13
	Toluene	0.002 - 0.0048	1000	0/13
	Trichloroethene	0.003 - 0.003	400	0/13
	Xylenes (total)	0.0044 - 0.0044	1000	0/13
Semivolatile Organic Compounds (SVOCs) (Excludes Samples analyzed for cPAH [c] only)	Total SVOCs	ND - 98.456	500	0/33
Total cPAHs [c]	Total cPAHs	ND - 113.1	25	31/436
Inorganic Compounds	Aluminum	1690 - 8330	--	0/14
	Antimony	1.9 - 10.7	--	0/14
	Arsenic	3.7 - 45.6	16	6/14
	Barium	23 - 444	10000	0/14
	Beryllium	0.44 - 1.9	2700	0/14
	Cadmium	1.3 - 9.2	60	0/14
	Calcium	468 - 8680	--	0/14
	Chromium	11.9 - 124	--	0/14
	Cobalt	2.3 - 13	--	0/14
	Copper	7.8 - 629	10000	0/14
	Iron	5610 - 91800	--	0/14
	Lead	2.5 - 7020	1000	52/471
	Magnesium	610 - 3810	--	0/14
	Manganese	36.5 - 667	10000	0/14
	Mercury	0.23 - 22.5	5.7	1/14
	Nickel	5.6 - 168	10000	0/14
	Potassium	350 - 928	--	0/14

TABLE 1
Nature and Extent of Contamination
October 1990 to August 2007

SURFACE SOIL	Potential Contaminants of Concern	Concentration Range Detected[1] (ppm)[a]	Screening Criteria[b] (ppm)[a]	Frequency Exceeding Screening Criteria
	Selenium	0.52 - 1.9	6800	0/14
	Silver	0.56 - 0.56	6800	0/14
	Sodium	120 - 1770	--	0/14
	Vanadium	11 - 97	--	0/14
	Zinc	22 - 1310	10000	0/14
Polychlorinated Biphenyls (PCBs)	Total Arochlors	ND - 25000	25	60/786
Pesticides	None	All ND		0/10

SUBSURFACE SOIL	Potential Contaminants of Concern	Concentration Range Detected1 (ppm)a	Screening Criteriab (ppm)a	Frequency Exceeding Screening Criteria
Volatile Organic Compounds (VOCs)	1,2,4-Trimethylbenzene	0.002 - 0.7	380	0/48
	4-Chlorotoluene+1,3,5-Trimethylbenzene	0.0026 - 1	380	0/48
	Acetone	0.011 - 0.308	1000	0/48
	Carbon Disulfide	0.0051 - 0.017	--	0/48
	Ethylbenzene	0.0013 - 0.22	780	0/48
	Isopropylbenzene	0.0035 - 0.3	--	0/48
	m+p-Xylene	0.0022 - 0.2	--	0/48
	Methylene Chloride	0.0036 - 0.258	1000	0/48
	Naphthalene	0.0024 - 0.55	1000	0/48
	n-Butylbenzene	0.0014 - 1.8	1000	0/48
	n-Propylbenzene	0.0022 - 0.57	1000	0/48
	o-Xylene	0.0013 - 0.59	--	0/48
	p-Isopropyltoluene	0.013 - 0.28	--	0/48
	sec-Butylbenzene	0.0052 - 0.0052	1000	0/48
	Toluene	0.00046 - 0.031	1000	0/48
	Xylenes (total)	0.137 - 0.137	1000	0/48
Semivolatile Organic Compounds (SVOCs) (Excludes Samples analyzed for cPAH Conly)	Total SVOCs	ND - 18.663	500	0/47
Total cPAHsC	Total cPAHs	ND - 119.2	25	18/376

TABLE 1
Nature and Extent of Contamination
October 1990 to August 2007

SURFACE SOIL	Potential Contaminants of Concern	Concentration Range Detected[1] (ppm)[a]	Screening Criteria[b] (ppm)[a]	Frequency Exceeding Screening Criteria
Inorganic Compounds	Aluminum	2030 - 11100	--	0/20
	Arsenic	0.73 - 11	16	0/20
	Barium	14 - 296	10000	0/20
	Beryllium	0.26 - 0.44	2700	0/20
	Cadmium	0.64 - 1.3	60	0/20
	Calcium	442 - 18100	--	0/20
	Chromium	1.6 - 53	--	0/20
	Cobalt	1.3 - 11	--	0/20
	Copper	4.8 - 57	10000	0/20
	Iron	3080 - 18900	--	0/20
	Lead	1.4 - 2600	1000	17/354
	Magnesium	874 - 4280	--	0/20
	Manganese	30.6 - 342	10000	0/20
	Mercury	0.086 - 0.98	5.7	0/20
	Nickel	4.4 - 15	10000	0/20
	Potassium	220 - 1060	--	0/20
	Selenium	0.22 - 0.22	6800	0/20
	Silver	0.59 - 0.59	6800	0/20
	Sodium	67 - 456	--	0/20
	Vanadium	5.2 - 25	--	0/20
	Zinc	16 - 270	10000	0/20
Polychlorinated Biphenyls (PCBs)	Total Arochlors	ND - 3532.476	25	13/455
Pesticides	Dieldrin	1.521	2.8	0/13
	Endrin	1.422	410	0/13
	Heptachlor	0.485	29	0/13

[a] ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

[b] SCG = standards, criteria, and guidance values

Soil:
PCBs - NYSDEC Site-Specific Cleanup Level (25 ppm)
Total cPAHs - NYSDEC Site-Specific Cleanup Level (25 ppm)
Lead - NYSDEC Site-Specific Cleanup Level (1,000 ppm)
SVOCs – NYSDEC TAGM 4046 (500 ppm)
Remaining soil parameters - NYSDEC Part 375 Industrial Standards

TABLE 1
Nature and Extent of Contamination
October 1990 to August 2007

[c] cPAHs = Seven specific polycyclic aromatic hydrocarbons (PAHs) the NYSDOH considers to be carcinogenic: (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene).

TABLE 2
Alternative 3
Summary of Soil Samples Exceeding Existing Site Specific Soil Cleanup Levels

Remedial Zone	Designation	Depth[1]	Concentration of Exceedance (ppm)[2]		
			PCBs	cPAHs	Lead
CPAH-1	S-43	0-2	-	42.59	-
CPAH-2	TS36-13	0-1	-	30.2	-
CPAH-2	TS36-14	0-1	-	25.54	-
CPAH-3	TU-3	0-1	-	35.7	-
CPAH-3	TU-3	1-2	-	80.2	-
CPAH-3	TU-3	2-3	-	59.6	-
CPAH-4	TU-2	1-2	-	30.4	-
CPAH-5	TU-13	0-1	-	43.3	-
CPAH-6	CB-2	0-1	-	27.8	-
CPAH-6	CB-2E	1-2	-	32.74	-
CPAH-6	CB-2W	1-2	-	34.6	-
CPAH-6	CB-2W	2-3	-	28.2	-
CPAH-6	CB-2WS	1-2	-	34	-
CPAH-6	CB-2WS	2-3	-	30.6	-
CPAH-6	PC-8	1-2	-	30.92	-
CPAH-6	PC-8SE	0-1	-	35	-
CPAH-7	LP2-9	0-1	-	40.3	-
CPAH-8	SSY-57	1.5-2	-	40.95	-
CPAH-9	LLS-22	0-1	-	41.55	-
CPAH-9	LLS-23	0-1	-	70.8	-
Lead-1	QC-1	0-1	-	-	2520
Lead-2	QC-2	0-1	-	-	1760
Lead-3	QB-7	0-1	-	-	1940
Lead-4	QB-1A	0-1	-	-	1020
Lead-4	QB-1E	0-1	-	-	1120
Lead-5	QB-2	0-1	-	-	2990
Lead-5	QB-3	0-1	-	-	1050
Lead-5	QB-4	0-1	-	-	1040
Lead-5	QB-4	1-2	-	-	1690
Lead-5	QB-4A	0-1	-	-	1180
Lead-6	QB-1	0-1	-	-	1140
Lead-7	HB-10	0-1	-	-	1030
Lead-7	HB-12	0-1	-	-	1110
Lead-7	HB-12+20	0-1	-	-	1180

TABLE 2
Alternative 3
Summary of Soil Samples Exceeding Existing Site Specific Soil Cleanup Levels

Lead-8	HB-11	0-1	-	-	1010
			Concentration of Exceedance (ppm)[2]		
Remedial Zone	**Designation**	**Depth[1]**	**PCBs**	**cPAHs**	**Lead**
Lead-9	HB-13	0-1	-	-	1060
Lead-9	HB-13	1-2	-	-	1010
Lead-9	HB-13-20	0-1	-	-	1010
Lead-9	HB-13-40	0-1	-	-	1160
Lead-10	HB-19	1-2	-	-	1120
Lead-10	HB-21	1-2	-	-	1150
Lead-10	HB-21+20	0-1	-	-	1150
Lead-10	HB-21+40	0-1	-	-	1120
Lead-11	HB-20	1-2	-	-	1460
Lead-12	HB-3	0-1	-	-	2110
Lead-12	HB-3	1-2	-	-	1260
Lead-12	HB-3-20	0-1	-	-	2150
Lead-12	HB-3-20	1-2	-	-	2600
Lead-12	HB-3-40	0-1	-	-	2350
Lead-12	MW-31	0-2	-	-	1290
Lead-13	HBR-3	1-2	-	-	1510
Lead-13	HBR-4	0-1	-	-	1890
Lead-13	HBR-4	1-2	-	-	1320
Lead-13	HBR-4	2-3	-	-	1630
Lead-14	HBR-7	0-1	-	-	1700
Lead-15	HB-27	0-1	-	-	1260
Lead-16	HB-30	0-1	-	-	1350
Lead-16	HB-30	1-2	-	-	1380
Lead-16	HB-30	2-3	-	-	1320
Lead-17	HB-31	0-1	-	-	1860
Lead-18	TU-8	1-2	-	-	1100
Lead-19	FT-3	0-2	-	-	1320
Lead-20	LLS-15	0-1	-	-	7020
PCB-1	CS-47	2-4	49	-	-
PCB-2	PIT-4	-	470	-	-
PCB-3	CS-53	0-2	88	-	-
PCB-3	HB-17	0-1	4148.576	-	1110
PCB-3	HB-17	1-2	3532.476	-	1090

TABLE 2
Alternative 3
Summary of Soil Samples Exceeding Existing Site Specific Soil Cleanup Levels

PCB-3	HB-17	2-3	1034.226	-	-
PCB-3	HB-17+20	0-1	29.086	-	-
			Concentration of Exceedance (ppm)2		
Remedial Zone	**Designation**	**Depth[1]**	**PCBs**	**cPAHs**	**Lead**
PCB-3	S-53	0-2	71.16	-	-
PCB-3	S-114	0-2	90	-	-
PCB-4	HB-22	0-1	77.663	-	1900
PCB-4	HB-22-20	0-1	103.63	-	1340
PCB-4	HB-22-40	0-1	84	-	1870
PCB-4	HB-23	0-1	525.6	-	2130
PCB-4	HB-23	1-2	866.944	-	2080
PCB-4	HB-23	2-3	806.914	-	-
PCB-4	HB-23+20	0-1	2572.294	-	2100
PCB-4	HB-23+40	0-1	40	-	2760
PCB-4	S-104	0-2	860	-	-
PCB-4	S-105	0-2	15000	-	-
PCB-4	S-106	0-2	20000	-	-
PCB-4	SB-16	6-7	380	-	-
PCB-4	SB-18	0-1	2400	-	-
PCB-4	SB-67	0-1	9700	-	-
PCB-4	SB-68	0-1	25000	-	-
PCB-4	SB-71	0-1	680	-	-
PCB-5	FT-2	0-2	73	-	-
PCB-6	PC-6	2-3	37	-	-
PCB-7	PC-10	0-1	-	-	2500
PCB-7	PC-10	1-2	26	-	-
PCB-8	925-3	0-0.67	264	-	-
PCB-8	925-3S	0-1	54	-	-
PCB-9	S-101	0-2	71	-	1190
PCB-10	SB-45	0-1	790	-	-
PCB-10	SB-45E	0-1	110	-	-
PCB-10	SB-45EE	0-1	1200	-	-
PCB-10	SB-45EE	1-2	33	-	-
PCB-10	SB-45EEE	0-1	43	-	-
PCB-10	SB-45EES	0-1	140	-	-
PCB-10	SB-45EN	0-1	60	-	-

TABLE 2
Alternative 3
Summary of Soil Samples Exceeding Existing Site Specific Soil Cleanup Levels

PCB-10	SB45-D1	0-1	29	-	-
PCB-10	SB45-D3	0-1	38	-	-
PCB-10	SB45-D3	1-2	940	-	-
			Concentration of Exceedance (ppm)2		
Remedial Zone	**Designation**	**Depth[1]**	**PCBs**	**cPAHs**	**Lead**
PCB-11	LLS-11A	1-2	92.2	-	-
PCB-12	LLS-21	0-1	38.9	-	-
PCB-12	LP2-3	0-1	68	42.5	-

Notes:
[1] - Depth is in feet below ground surface (ft bgs)
[2] - ppm = parts per million, which is equivalent to milligrams per kilogram (mg/kg)

Dash (-) indicates result did not exceed existing Site Soil Cleanup Objective.

TABLE 3
Alternative 4
Summary of Soil Samples Exceeding Modified Site Specific Soil Cleanup Levels

Remedial Zone	Designation	Depth[1]	Concentration of Exceedance (ppm)[2]		
			PCBs	cPAHs	Lead
Lead-20	LLS-15	0-1	-	-	7020
PCB-1	CS-47	2-4	49	-	-
PCB-2	PIT-4	-	470	-	-
PCB-3	CS-53	0-2	88	-	-
PCB-3	HB-17	0-1	4148.576	-	-
PCB-3	HB-17	1-2	3532.476	-	-
PCB-3	HB-17	2-3	1034.226	-	-
PCB-3	HB-17+20	0-1	29.086	-	-
PCB-3	S-53	0-2	71.16	-	-
PCB-3	S-114	0-2	90	-	-
PCB-4	HB-22	0-1	77.663	-	-
PCB-4	HB-22-20	0-1	103.63	-	-
PCB-4	HB-22-40	0-1	84	-	-
PCB-4	HB-23	0-1	525.6	-	-
PCB-4	HB-23	1-2	866.944	-	-
PCB-4	HB-23	2-3	806.914	-	-
PCB-4	HB-23+20	0-1	2572.294	-	-
PCB-4	HB-23+40	0-1	40	-	-
PCB-4	S-104	0-2	860	-	-
PCB-4	S-105	0-2	15000	-	-
PCB-4	S-106	0-2	20000	-	-
PCB-4	SB-16	6-7	380	-	-
PCB-4	SB-18	0-1	2400	-	-
PCB-4	SB-67	0-1	9700	-	-
PCB-4	SB-68	0-1	25000	-	-
PCB-4	SB-71	0-1	680	-	-
PCB-5	FT-2	0-2	73	-	-
PCB-6	PC-6	2-3	37	-	-
PCB-7	PC-10	0-1	-	-	-
PCB-7	PC-10	1-2	26	-	-
PCB-8	925-3	0-0.67	264	-	-
PCB-8	925-3S	0-1	54	-	-
PCB-9	S-101	0-2	71	-	-
PCB-10	SB-45	0-1	790	-	-

TABLE 3
Alternative 4
Summary of Soil Samples Exceeding Modified Site Specific Soil Cleanup Levels

Remedial Zone	Designation	Depth[1]	Concentration of Exceedance (ppm)[2]		
			PCBs	cPAHs	Lead
PCB-10	SB-45E	0-1	110	-	-
PCB-10	SB-45EE	0-1	1200	-	-
PCB-10	SB-45EE	1-2	33	-	-
PCB-10	SB-45EEE	0-1	43	-	-
PCB-10	SB-45EES	0-1	140	-	-
PCB-10	SB-45EN	0-1	60	-	-
PCB-10	SB45-D1	0-1	29	-	-
PCB-10	SB45-D3	0-1	38	-	-
PCB-10	SB45-D3	1-2	940	-	-
PCB-11	LLS-11A	1-2	92.2	-	-
PCB-12	LLS-21	0-1	38.9	-	-
PCB-12	LP2-3	0-1	68	-	-

Notes:
[1] - Depth is in feet below ground surface (ft bgs)
[2] - ppm = parts per million, which is equivalent to milligrams per kilogram (mg/kg)

Dash (-) indicates result did not exceed modified Site Soil Cleanup Objective.

TABLE 4
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1. No Action	$0	$0	$0
2. Soil Excavation/Off-site Disposal - Predisposal Unrestricted Use SCOs	*$180,000,000*	$0	$180,000,000
3. Soil Excavation/Off-site Disposal – Existing Site Specific Soil Cleanup Levels	*$2,200,000*	$0	$2,200,000
4. Soil Excavation/Off-site Disposal – Modified Site Specific Soil Cleanup Levels	*$1,100,000*	$0	$1,100,000

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Amtrak Sunnyside Yard
Operable Unit No. 4
Long Island City, Queens County, New York
Site No. 241006

The Proposed Remedial Action Plan (PRAP) for the Amtrak Sunnyside Yard, Operable Unit 4 site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 27, 2009. The PRAP outlined the remedial measure proposed for the contaminated soil at the Amtrak Sunnyside Yard, Operable Unit 4 site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 18, 2009, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 30, 2009. This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: When was the sampling (mentioned in the presentation of the Remedial Investigation) conducted?

RESPONSE 1: Sampling of soil (surface and subsurface) in OU-4 was done during the period 1983 to 2008. The sampling events included Phases I and II of the Remedial Investigation (RI) and took place to coincide with track maintenance, utility installation and construction related activities.

COMMENT 2: Have any studies been conducted to determine what health effects, if any, have been experienced by someone spending their career working in the Amtrak Sunnyside Yard?

RESPONSE 2: Neither NYSDEC nor NYSDOH are aware of any such report.

COMMENT 3: Why proceed with the remediation of OU-4 when OU-3 has not been completed?

RESPONSE 3: The remediation of operable units does not necessarily occur in sequential

order. The remediation of OU-4 is not contingent on the completion of the remediation of OU-3. The NYSDEC intends to move forward with the OU-3 remediation once a satisfactory Community Air Monitoring Plan (CAMP), which will include odor and dust control measures, and a Work Plan to implement the Remedy have been submitted by Amtrak.

COMMENT 4: How will the remediation of OU-4 impact the nearby residents and workers? What will be put in place to ensure that the indoor air incident that took place last September at 33-00 Northern Boulevard does not reoccur?

RESPONSE 4: The contamination in OU-4 is different than the contamination in OU-3. In OU-4 the contaminants of concern (COCs) are concentrated in the unsaturated soil above the water table. In OU-3 there was a non-aqueous phase liquid or NAPL (referred to in the RI Report as SPH or separate phase hydrocarbon) floating on the water table. The SPH consists of petroleum products, namely distillate and residual fuel oils, which have an odor due to the presence of volatile organic compounds (VOCs). The contamination in OU-4 contains no VOCs and is contained within the unsaturated soil. The COCs, namely PCBs (polychlorinated biphenyls), cPAHs (carcinogenic polyaromatic hydrocarbons) and lead are much less volatile and therefore are not odorous and are mostly present at elevated levels in isolated areas. The only potential exposure pathway is through direct contact with the contaminated soil and this would only potentially impact the workers on-site. However, there are site specific work practices for site workers to alert them to the presence of this material and to prevent exposures.

A CAMP will be implemented by Amtrak during remedial excavation activities. Air sampling will be done in the area around the excavation and at downwind and upwind locations within the perimeter of the Site and in the nearby community. In addition, Amtrak will have to execute its dust and odor control plan and decontaminate all trucks leaving the site carrying excavated soil.

Amtrak has to maintain the Site security and enforce the HASP (Health and Safety Plan), CAMP (including dust suppression and odor control measures) and the soil management plan.

COMMENT 5: The building located at 33-00 Northern Boulevard now has 500 more tenants than it did in September 2008 when the indoor air incident caused the building to be evacuated twice within two days. A similar incident to this would be much more difficult to manage.

RESPONSE 5: Agreed. All precautions will be taken to prevent off-site impacts during the OU-4 remediation (see Response 4).

COMMENT 6: Although you maintain that the Sunnyside Yard (SSY) for the most part is capped or covered thereby preventing exposures to the contaminated soil in OU-4, we have observed tracts of exposed soil where dust can be generated, wind blown and so migrate off-site.

RESPONSE 6: Besides excavation and proper disposal of contaminated soil in OU-4, the proposed remedy also requires Amtrak to backfill excavated areas with clean imported fill, maintain existing surface covers and establish a minimum one foot thick cover with clean ballast

in areas where concentrations of cPAHs exceed 25 ppm and where there is no existing cover such as buildings, tracks or pavement. In addition, an environmental easement will be imposed to ensure that the cover system is inspected and maintained as per the requirements of the Site Management Plan.

COMMENT 7: But there are large areas where soil is stockpiled and there is no cover, for example, the area adjacent to the building at 33-00 Northern Boulevard and below the Honeywell Bridge.

RESPONSE 7: The area referred to is part of the construction site for the East Side Access (ESA) project which is unrelated to this PRAP. The ESA has submitted and NYSDEC approved a Construction Contamination Site Management Plan (CCSMP) with a Stipulation List which dictates how they manage contaminated media encountered during construction activities in the Sunnyside Yard. The CCSMP also includes a Soil Management Plan that contains odor and dust suppression requirements. However, NYSDEC's jurisdiction does not extend beyond activities at the Amtrak SSY site which is a Class 2 Inactive Hazardous Waste Disposal site.

COMMENT 8: Will NYSDEC consider extending the comment period to beyond March 30, 2009?

RESPONSE 8: If there is a request to do so based on substantive reasons and concerns which have not been satisfactorily addressed by the end of the comment period of March 30, 2009, then NYSDEC would consider extending such comment period. Please refer to 6 NYCRR Part 375-1.10(g)

COMMENT 9: Would Amtrak/NYSDEC consider a walk through of the Site with representatives of concerned building tenants of 33-00 Northern Boulevard?

RESPONSE 9: Yes. The NYSDEC Project Manager (PM) will communicate with all parties and make arrangements with them for the walk through. However, many areas of the Site are off-limits to the general public without specific health and safety training due to the Site's designation as a class 2 Inactive Hazardous Waste Disposal site.

COMMENT 10: Will CAMP results/reports be made available for everyone to review?

RESPONSE 10: Amtrak and its representatives will be required to produce and submit reports during the remediation. These reports will be sent to the NYSDEC and NYSDOH PMs and will include the CAMP data. The reports are available to the public upon request. The CAMP will focus on monitoring VOCs and particulates (dust) in the ambient air at points along the perimeter of the Site, upwind, downwind and adjacent to excavations.

COMMENT 11: Can monitoring points be set up in nearby buildings along Northern Boulevard?

RESPONSE 11: The area for monitoring ambient air can be expanded to include buildings surrounding the site. This will also be addressed as part of the implementation of the OU-3 remedy.

Lewis D. Wunderlich, Environmental Construction Manager of MTA Capital Construction/ESA, submitted a letter (dated March 30, 2009) which included the following comments:

COMMENT 12: Page 4, operable unit bullets:

- OU-2 and OU-3 in Figure 2: Note that the northern portion of OU-2 and OU-3 overlaps on to LIRR property. Also, two parcels of the LIRR property between 39th and 37th streets are currently leased to Standard Motor Products, Inc.

- OU-3: Note that remediation commenced in September 2008 but was temporarily suspended until further notice (due to the "odor incident").

RESPONSE 12: Both items 1.a. and 1.b. above have been noted and addressed in the bullets in Section 2 of the ROD.

COMMENT 13: Page 7, Waste materials Section, 1st sentence. The PIT-4 sample is not labeled on Figure3. Refer to Figure 5 – PCB exceedances in soil in the western portion of the yard – for sample location.

RESPONSE 13: The correction has been made to the ROD.

APPENDIX B

Administrative Record

Administrative Record

Amtrak Sunnyside Yard
Operable Unit No. 4
Site No. 241006

1. Proposed Remedial Action Plan for the Amtrak Sunnyside Yard site, Operable Unit No. 4, dated March 2009, prepared by the Department.

2. Order on Consent, Index No. W2-0081-87-06 between the Department and the National Railroad Passenger Corporation (Amtrak) and the New Jersey Transit Corporation (NJTC) , executed on September 21, 1989 and modified on August 25, 1993 and February 4, 1998.

3. "Public Meeting Announced Proposed Remedial Action Plan Available For Public Comment – Fact Sheet" dated February 2009, prepared by the Department.

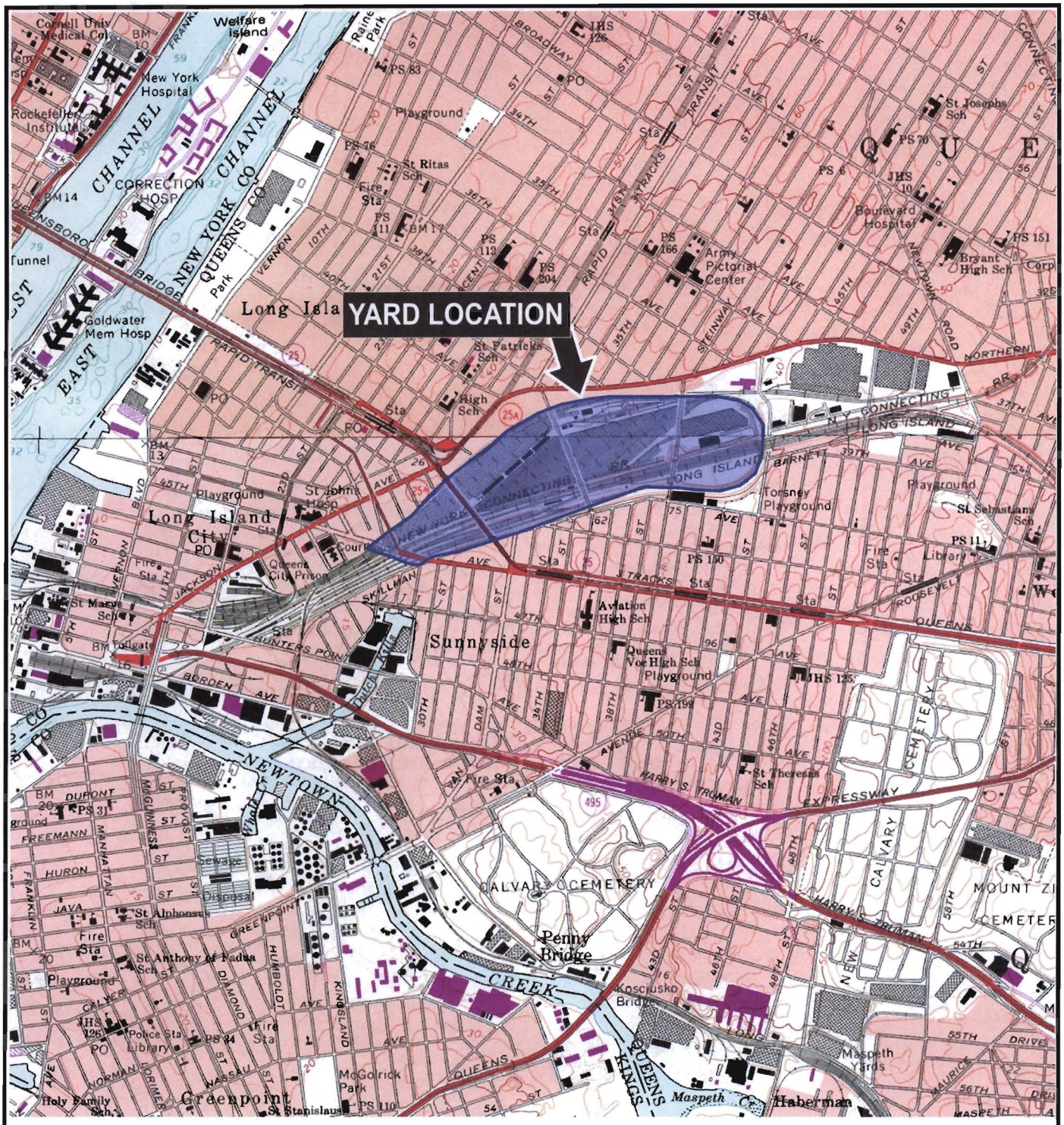
4. Referral Memorandum dated February 27, 2009 for State Superfund Referral for legal assistance in completing a Remedial Design/Remedial Action Consent Order.

5. "Operable Unit 4 Feasibility Study, Sunnyside Yard, Queens, New York", dated January 30, 2009 and prepared by Roux Associates.

6. "Operable Unit 4 Remedial Investigation Report Volume I, Sunnyside Yard, Queens, New York", dated October 2, 2008 and prepared by Roux Associates.

7. "Operable Unit 4 Remedial Investigation Report Volume II, Sunnyside Yard, Queens, New York", dated October 2, 2008 and prepared by Roux Associates.

8. "Scoping Document for the Operable Unit 4 (OU-4) Remedial Investigation, Sunnyside Yard, Queens, New York", dated March 18, 2005 and prepared by Roux Associates.



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

QUADRANGLE LOCATION

N

0 2000'

Title:

LOCATION OF SITE

OU-4 PROPOSED
REMEDIAL ACTION PLAN

Prepared for:

AMTRAK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: H.G	Date: 11FEB09	FIGURE
Prepared by: J.A.D	Scale: 1"=2000'	1
Project Mgr.: H.G.	Office: NY	
File No.: AM71.146.01.CDR	Project No : 05571Y09	

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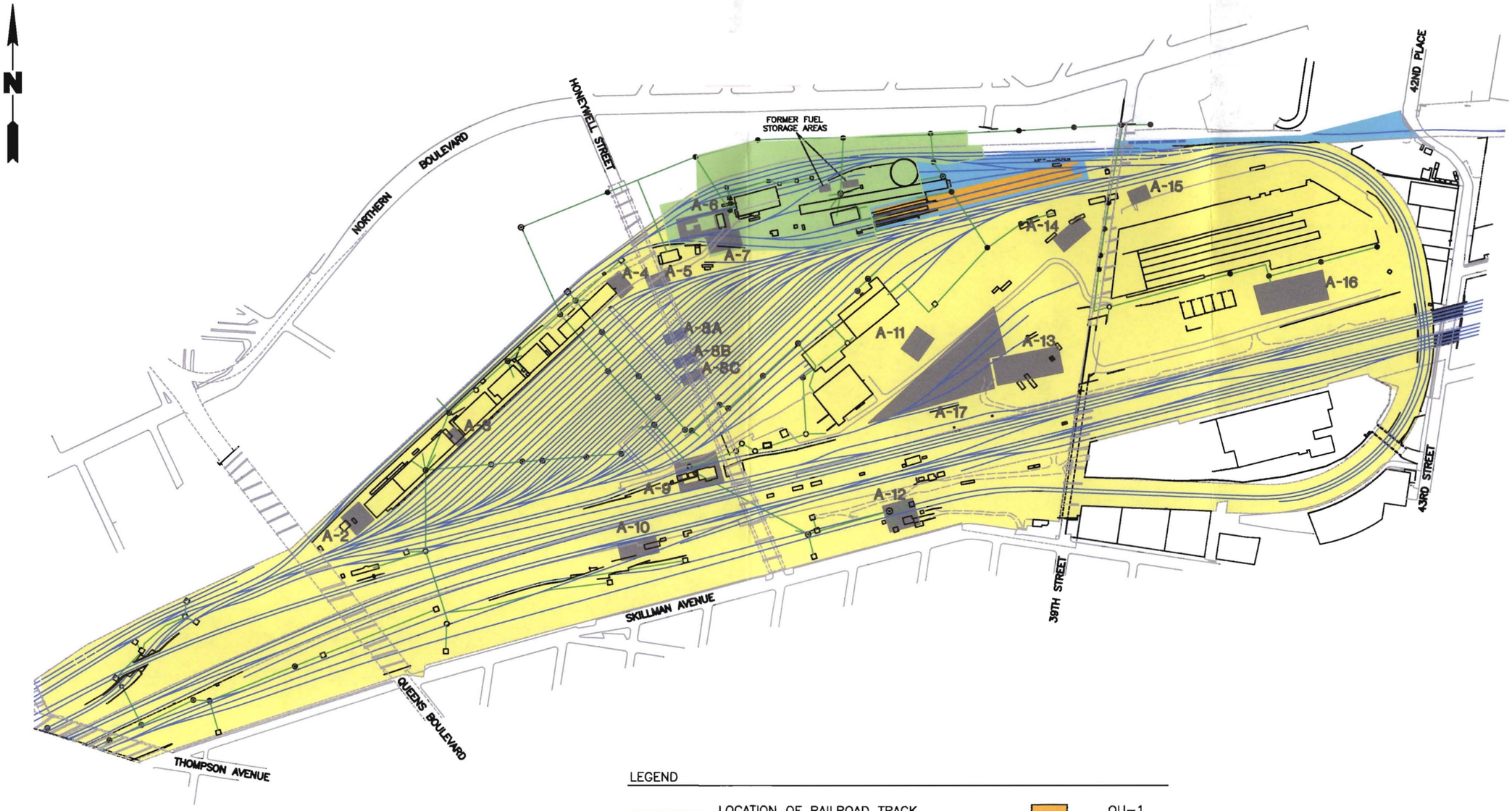

LEGEND

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

- OU-1
- OU-2
- OU-3
- OU-4
- OU-5

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

OU-4 PROPOSED
REMEDIAL ACTION PLAN

Prepared For:
AMTRAK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: H.G.	Date: 11FEB09	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	2
Project Mgr: H.G.	Office: NY	
File No: AM71.146.02	Project: 05571Y09	

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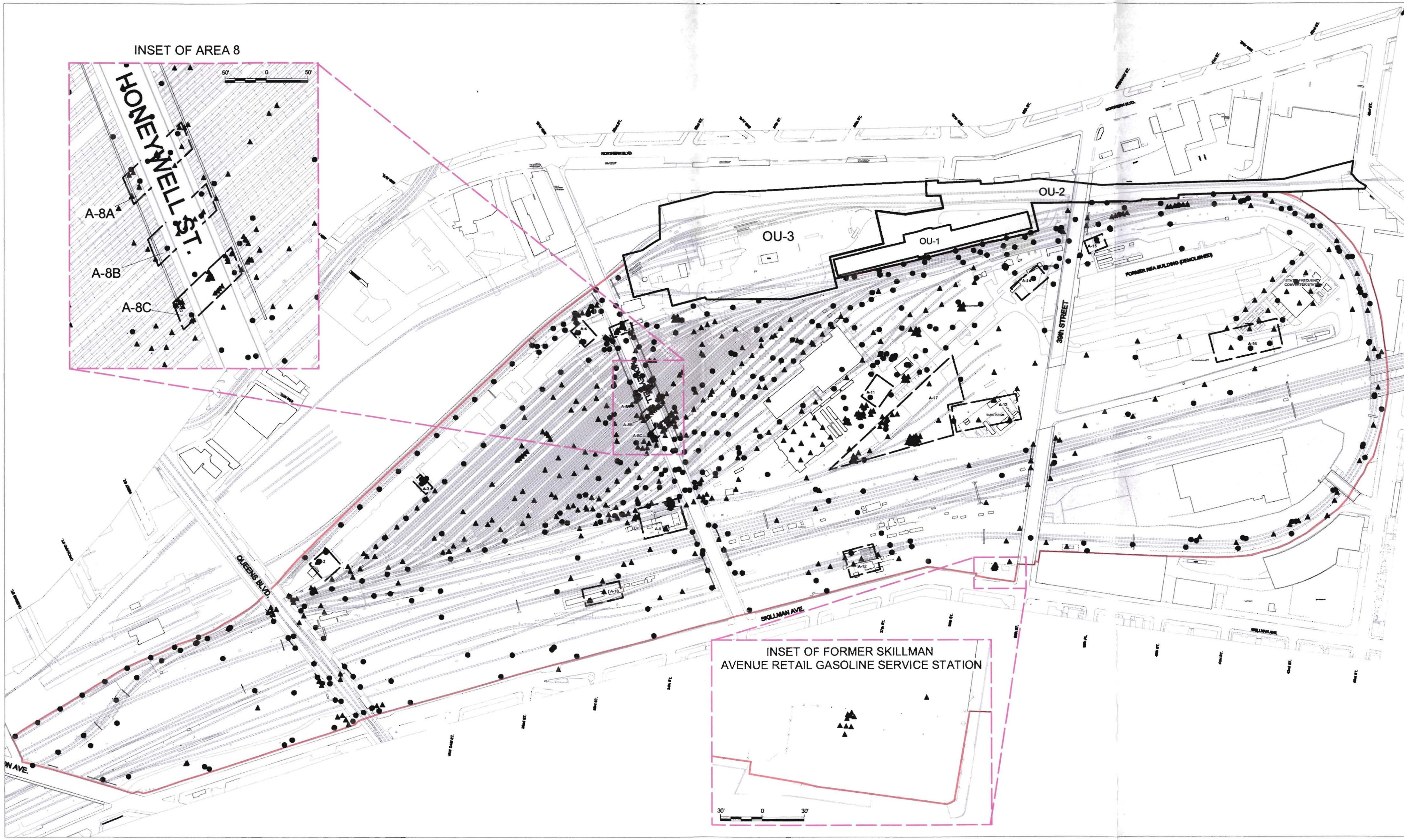


EXPLANATION

● LOCATION OF SOIL BORING COMPLETED IN OU-4 AND ANALYZED FOR PCBs, cPAHS, AND LEAD

▲ LOCATION OF SOIL BORING COMPLETED IN OU-4 AND ANALYZED FOR ONE OR TWO OF THE FOLLOWING: PCBs, cPAHS, OR LEAD, BUT NOT ALL THREE

APPROXIMATE EXTENT OF OU-4 BOUNDARY

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

NOTES:

OU-4 - OPERABLE UNIT 4

PCB - POLYCHLORINATED BIPHENYL

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

160' 0 160'

N

OU-4 SOIL BORING LOCATIONS

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC Environmental Consulting & Management

FIGURE 3

OU-3

OU-1

OU-2

OU-2

FT-2
0-2 PCB 73

PC-6
0-1 PCB 6.1
1-2 PCB 5.7
2-3 PCB 37
3-4 PCB 16
4-5 PCB 12

925-3
0-0.67 PCB 264

SB-45EN
0-1 PCB 60
1-2 PCB 17
2-3 PCB 3.9

925-3S
0-1 PCB 54
1-2 PCB 1.1
2-3 PCB 0.087

SB45-D1
0-1 PCB 29
1-2 PCB 19
2-3 PCB 0.079

PC-10
0-1 PCB 25
1-2 PCB 26
2-3 PCB 7.4

S-101
0-2 PCB 71

SB45-D3
0-1 PCB 38
1-2 PCB 940

SB-45
0-1 PCB 790

SB-45E
0-1 PCB 110
1-2 PCB 2.2
2-3 PCB 0.480

SB-45EES
0-1 PCB 140
1-2 PCB 5.6
2-3 PCB 5.3

SB-45EEE
0-1 PCB 43
1-2 PCB 1.8
2-3 PCB 0.120

SB-45EE
0-1 PCB 1200
1-2 PCB 33
2-3 PCB 11

LLS-11A
0-1 PCB 8.73
1-2 PCB 92.2

LLS-21
0-1 PCB 38.9

LP2-3
0-1 PCB 68
1-2 PCB 1.610

FORMER REA BUILDING (DEMOLISHED)

STATIC FREQUENCY CONVERTER STATION

SUBSTATION

A-8A

A-8B

A-8C

A-11

A-12

A-13

A-14

A-15

A-16

A-17

HONEYWELL ST.

39th STREET

43rd ST.

SKILLMAN AVE.

36th ST.

37th ST.

38th ST.

39th ST.

39th PL.

40th ST.

41st ST.

MAP LOCATION - EASTERN PORTION

EASTERN PORTION

WESTERN PORTION

SOIL SAMPLE EXPLANATION

DESIGNATION

S-101
0-2 PCB 71

TOTAL PCB CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD

A-9

LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

N

240' 0 240'

Title:

OU-4 SOIL QUALITY
- TOTAL PCB EXCEEDANCES IN SOIL (EASTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 2/10/2009	FIGURE
Prepared by: RSK	Scale: SHOWN	4
Project Mgr: HG	Office: NY	
File No: AM7114604A.WOR	Project: 0055.0071Y009	

CS-47
2-4 PCB 49

PIT-4
- PCB 470

HB-22-40
0-1 PCB 84
1-2 PCB 4

HONEYWELL ST.

QUEENS BLVD

THOMSON AVE.

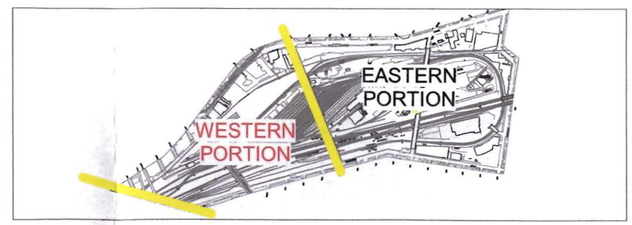
VAN DAM ST.

32nd ST.

35th ST

ST.

MAP LOCATION - WESTERN PORTION



SOIL SAMPLE EXPLANATION

DESIGNATION

CS-47
2-4 PCB 49

TOTAL PCB CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

N

240' 0 240'

Title:

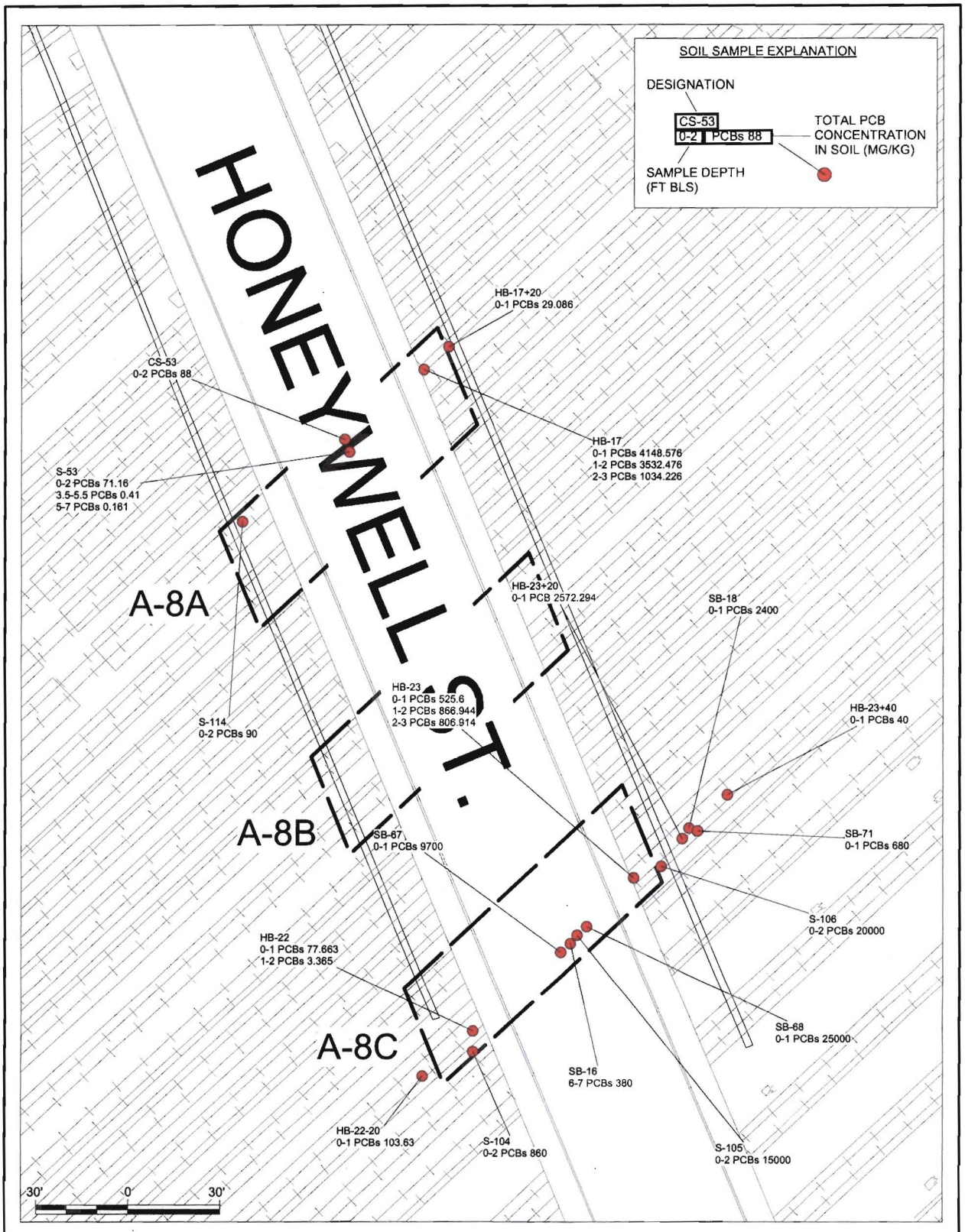
OU-4 SOIL QUALITY
- TOTAL PCB EXCEEDANCES IN SOIL (WESTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 2/10/2009	FIGURE
Prepared by: RSK	Scale: SHOWN	5
Project Mgr: HG	Office: NY	
File No: AM7114604B.WOR	Project: 0055.0071Y009	



LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD

A-8 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

NOTES:

YARD SOIL CLEANUP LEVEL FOR PCBs - 25 MG/KG

OU-4 - OPERABLE UNIT 4

PCB - POLYCHLORINATED BIPHENYL

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

MG/KG - MILLIGRAMS PER KILOGRAM

FT BLS - FEET BELOW LAND SURFACE

N

Title:

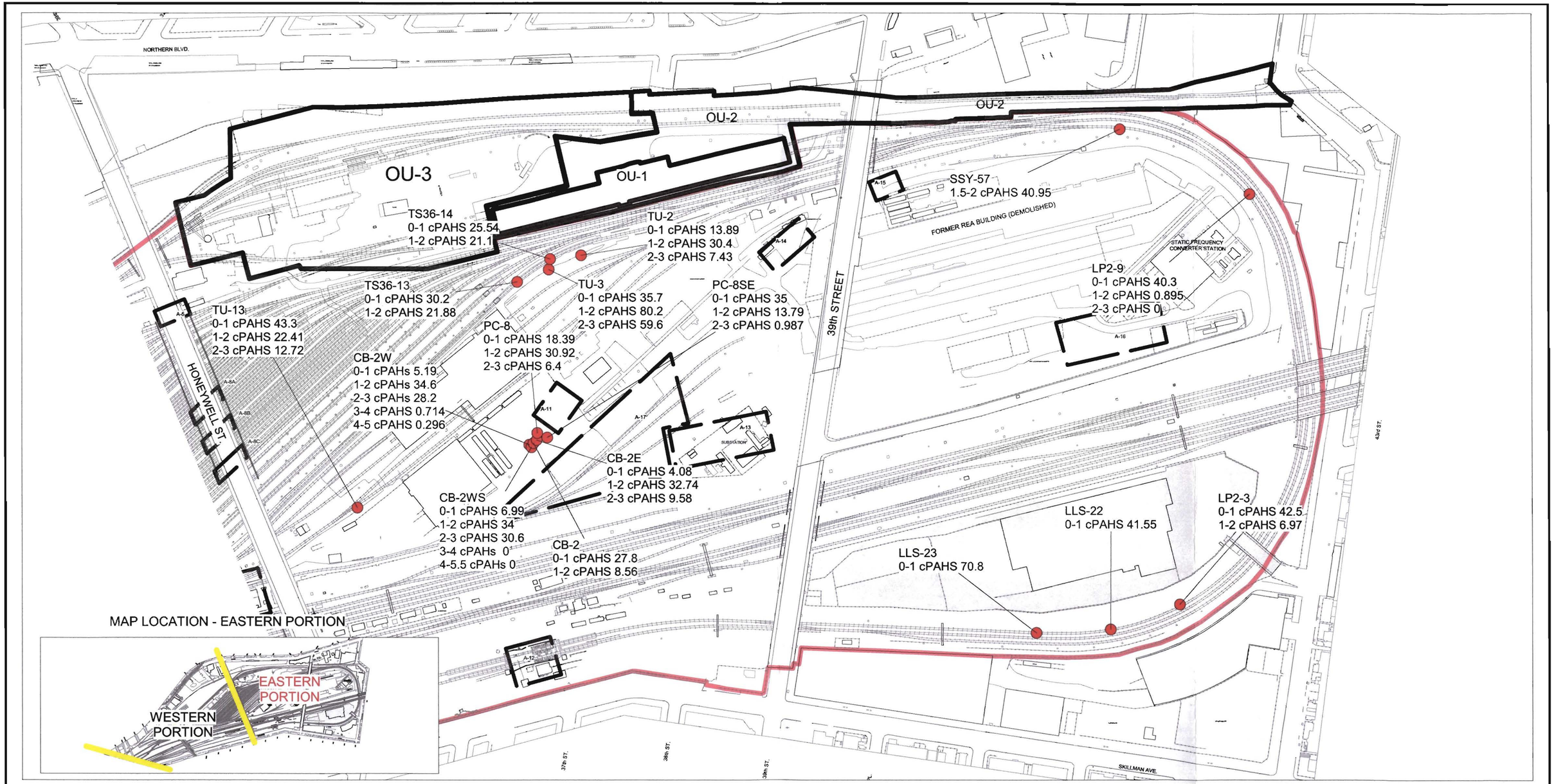
OU-4 SOIL QUALITY- TOTAL PCB EXCEEDANCES IN SOIL (AREA 8)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 2/10/2009	FIGURE
Prepared by: RSK/LD	Scale: SHOWN	6
Project Mgr: HG	Office: NY	
File No: AM7114605.WOR	Project: 0055.007.Y009	



SOIL SAMPLE EXPLANATION

DESIGNATION

SSY-57
1.5-2 cPAHs 40.95

TOTAL cPAHs CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR cPAHS GREATER THAN THE CURRENT YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD (AMTRAK HAS REQUESTED AN ALTERNATE CLEANUP LEVEL)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

A-9 — LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

N

240' 0 240'

Title:

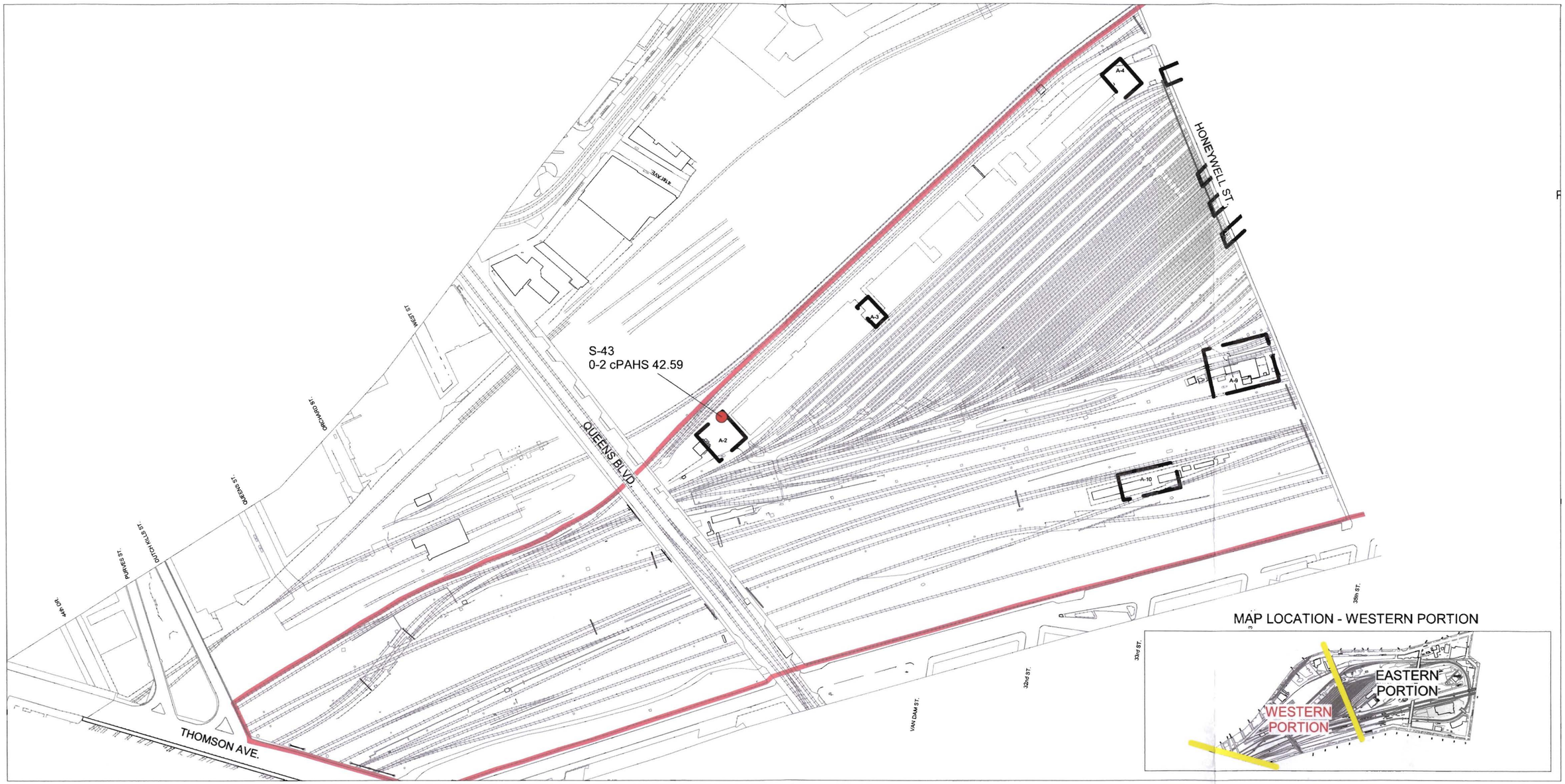
OU-4 SOIL QUALITY
-
TOTAL cPAH EXCEEDANCES IN SOIL (EASTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: LD	Date: 2/10/2009	FIGURE 7
Prepared by: LD	Scale: 1 INCH = 200 FEET	
Project Mgr: HG	Office: NY	
File No: AM7114606A.WOR	Project: 0055.0071Y009	



MAP LOCATION - WESTERN PORTION

SOIL SAMPLE EXPLANATION

DESIGNATION

SSY-57
1.5-2 | cPAHs 40.95

TOTAL cPAHs CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR cPAHS GREATER THAN THE CURRENT YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD (AMTRAK HAS REQUESTED AN ALTERNATE CLEANUP LEVEL)

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

240' 0 240'

N

Title:

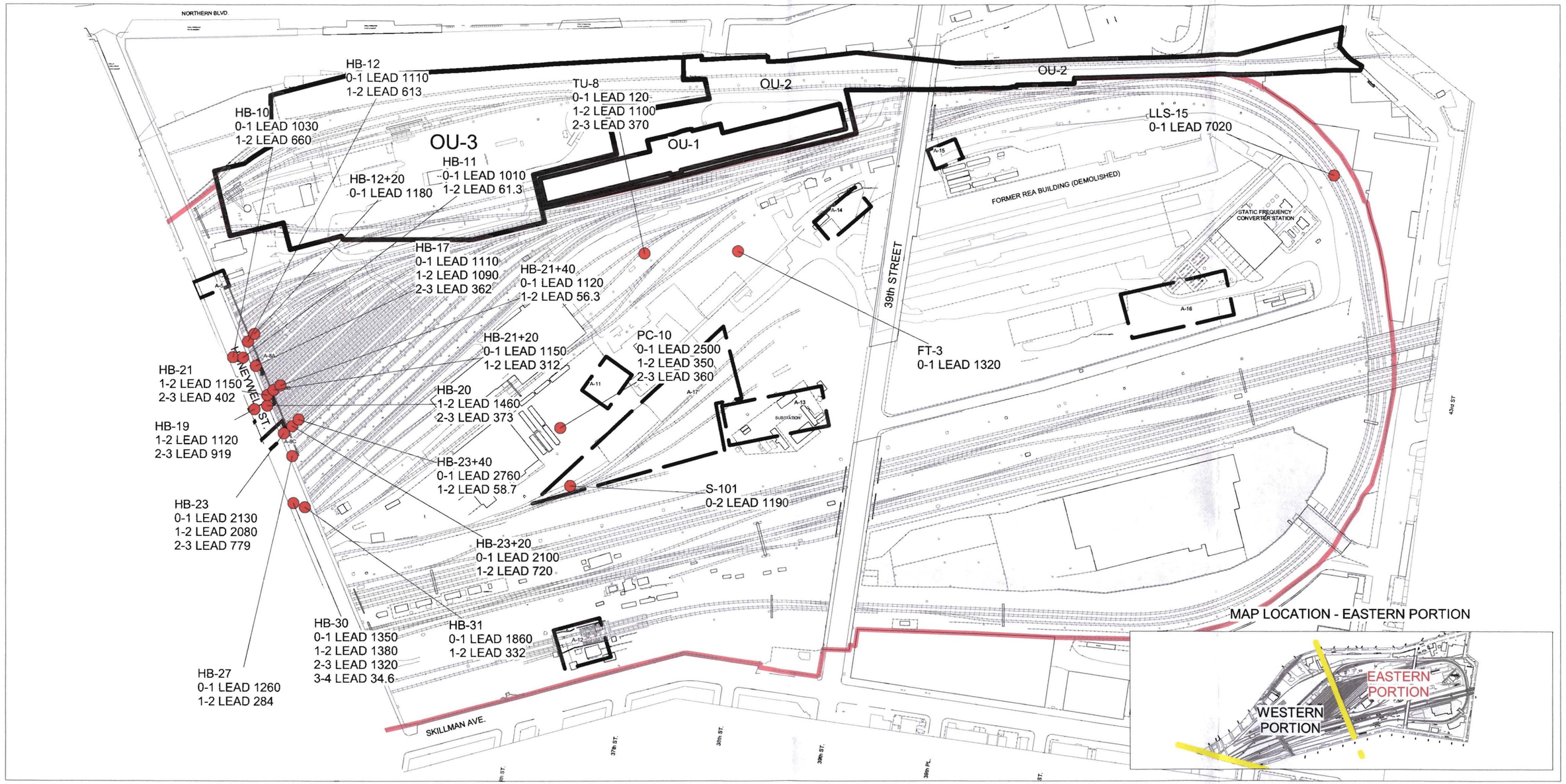
OU-4 SOIL QUALITY - TOTAL cPAH EXCEEDANCES IN SOIL (WESTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: LD	Date: 2/10/2009	FIGURE
Prepared by: LD	Scale: 1 INCH = 240 FEET	8
Project Mgr: HG	Office: NY	
File No: AM7114606B.WOR	Project: 0055.0071Y009	



SOIL SAMPLE EXPLANATION

DESIGNATION

HB-23
0-1 LEAD 2130

TOTAL LEAD CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR LEAD GREATER THAN THE CURRENT YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD (AMTRAK HAS REQUESTED 3,900 MG/KG IN ACCORDANCE WITH 6NYCRR PART 375)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

N

240' 0 240'

Title:

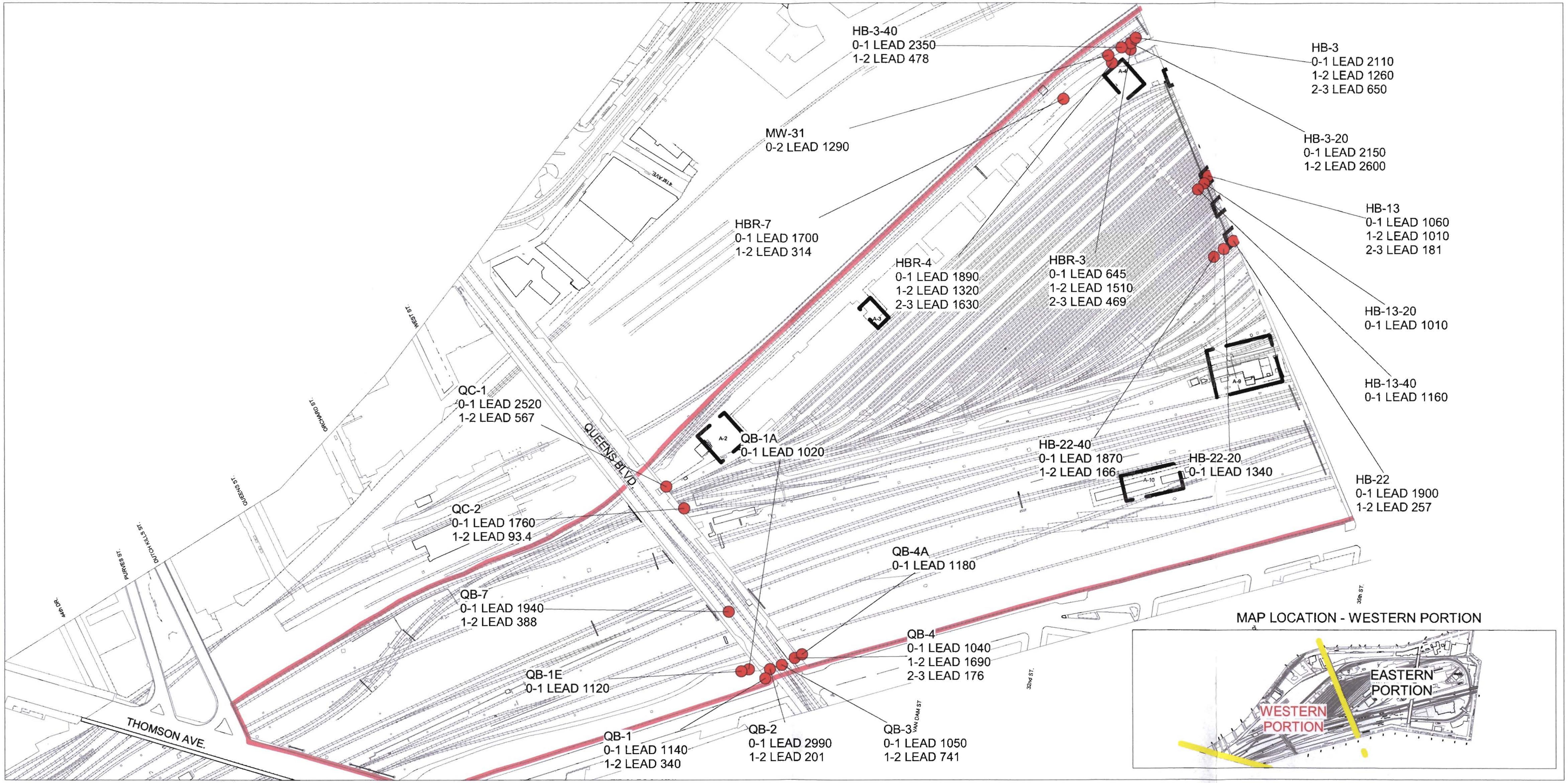
OU-4 SOIL QUALITY - TOTAL LEAD EXCEEDANCES IN SOIL (EASTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: LD	Date: 2/10/2009	FIGURE
Prepared by: LD	Scale: 1 INCH = 200 FEET	9
Project Mgr: HG	Office: NY	
File No: AM7114607A.WOR	Project: 0055.0071Y009	



SOIL SAMPLE EXPLANATION

DESIGNATION

HB-23	
0-1	LEAD 2130

TOTAL LEAD CONCENTRATION IN SOIL (MG/KG)

SAMPLE DEPTH (FT BLS)

● LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR LEAD GREATER THAN THE CURRENT YARD SOIL CLEANUP LEVEL, AND STILL PRESENT AT YARD (AMTRAK HAS REQUESTED 3,900 MG/KG IN ACCORDANCE WITH 6NYCRR PART 375)

A-9 — LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

240' 0 240'

N

Title:

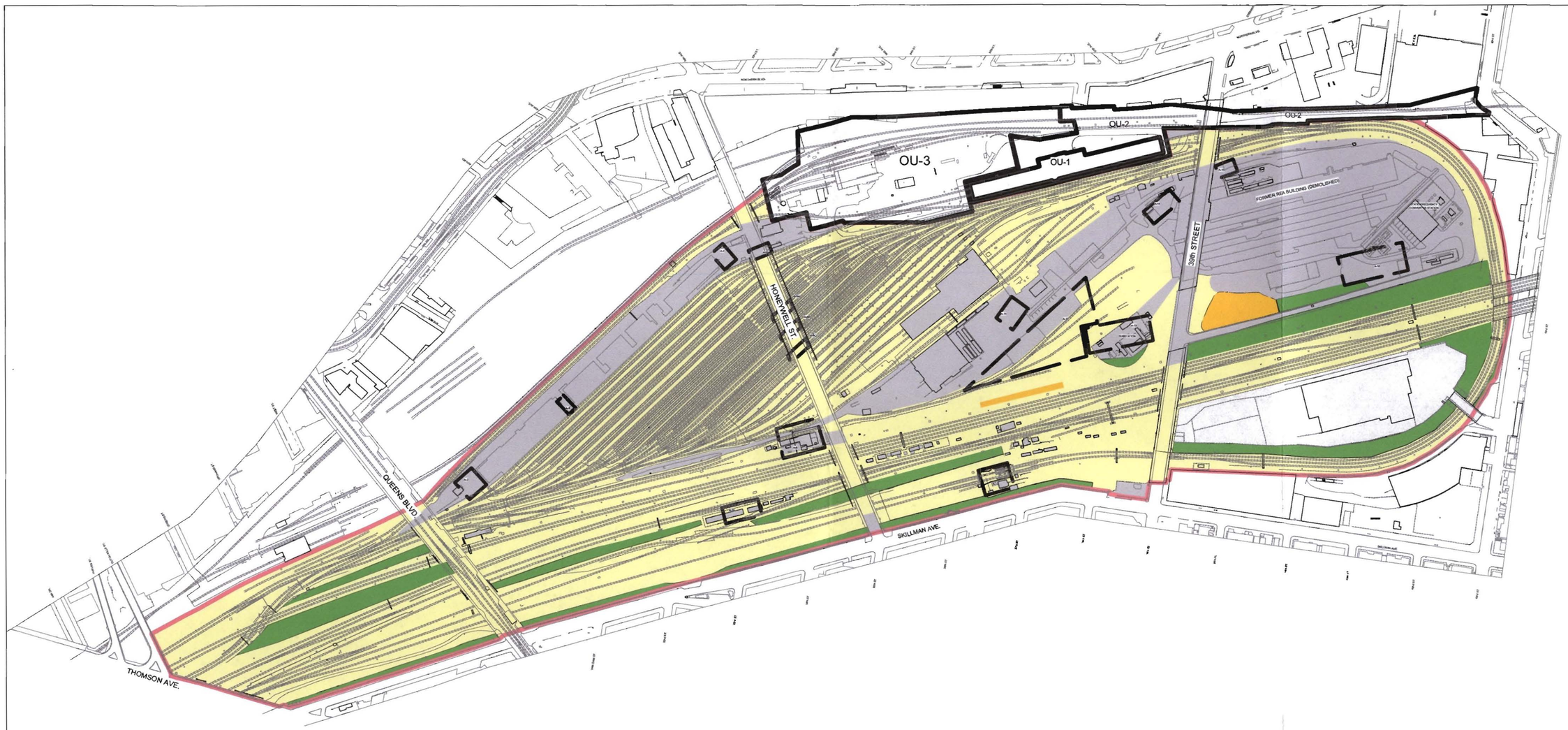
OU-4 SOIL QUALITY
-
TOTAL LEAD EXCEEDANCES IN SOIL (WESTERN PORTION OF YARD)

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: LD	Date: 2/10/2009	FIGURE
Prepared by: LD	Scale: 1 INCH = 240 FEET	10
Project Mgr: HG	Office: NY	
File No: AM7114607B.WOR	Project: 0055.0071Y009	



DESCRIPTION OF LAND SURFACE COVER

TRACK (INCLUDES TRACKS, BALLAST, CONCRETE AND PAVED WALKWAYS) (65.13 ACRES - 54.27%)

ASPHALT / CONCRETE PAVEMENT AND BUILDINGS (29.6 ACRES - 24.66%)

BRUSH/VEGETATION (20.66 ACRES - 17.21%)

EXPOSED GROUND (4.59 ACRES - 3.82%)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

NOTE:
APPROXIMATE TOTAL AREA OF OPERABLE UNIT 4 IS 120 ACRES.

N

Title:

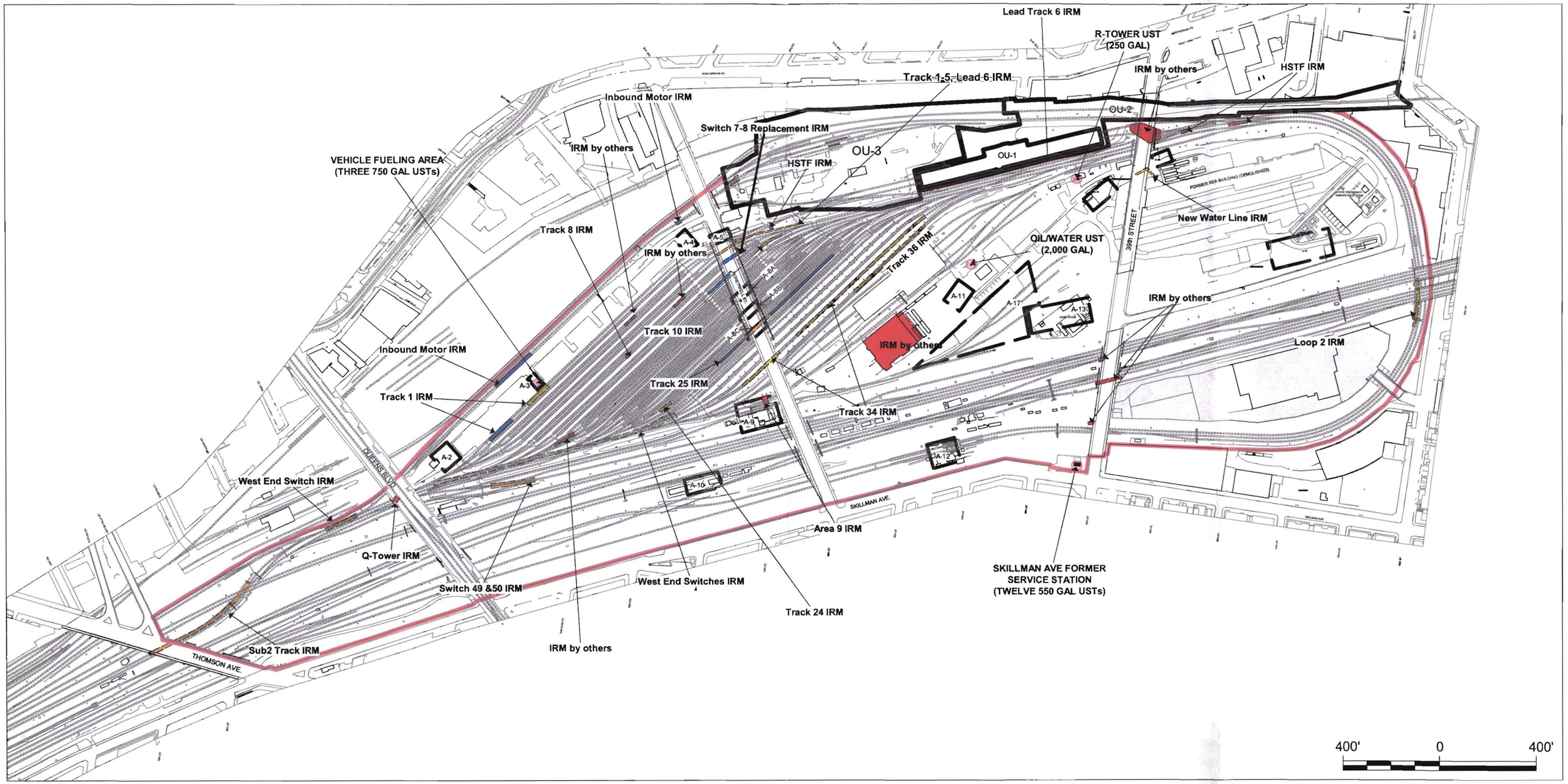
OU-4 - LAND SURFACE COVER

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 1/16/2009	FIGURE
Prepared by: RSK	Scale: 1 INCH = 400 FEET	11
Project Mgr: HG	Office: NY	
File No: AM7114608.WOR	Project: 0055.0071Y009	



APPROXIMATE EXTENT OF IRM EXCAVATION COMPLETED TO ADDRESS PCB EXCEEDANCE (25 MG/KG)

APPROXIMATE EXTENT OF IRM EXCAVATION COMPLETED TO ADDRESS TOTAL cPAH EXCEEDANCE (25 MG/KG)

APPROXIMATE EXTENT OF IRM EXCAVATION COMPLETED TO ADDRESS TOTAL cPAH EXCEEDANCE OF FORMER YARD SOIL CLEANUP LEVEL (10 MG/KG)

APPROXIMATE EXTENT OF IRM EXCAVATION COMPLETED TO ADDRESS LEAD EXCEEDANCE (1,000 MG/KG)

APPROXIMATE EXTENT OF IRM EXCAVATION COMPLETED TO ADDRESS AN EXCEEDANCE OF MULTIPLE COCs

NOTES:

THE SOIL IRMS DESIGNATED AS "IRM BY OTHERS" REFERS TO THE SEVEN PCB-RELATED IRMS PERFORMED BY AMTRAK CONTRACTORS

IRM - INTERIM REMEDIAL MEASURE

OU-4 - OPERABLE UNIT 4

COCs - COMPOUNDS OF CONCERN FOR THE YARD (PCBs, TOTAL cPAHS, AND LEAD)

MG/KG - MILLIGRAMS PER KILOGRAM

UST - UNDERGROUND STORAGE TANK

N

Title:

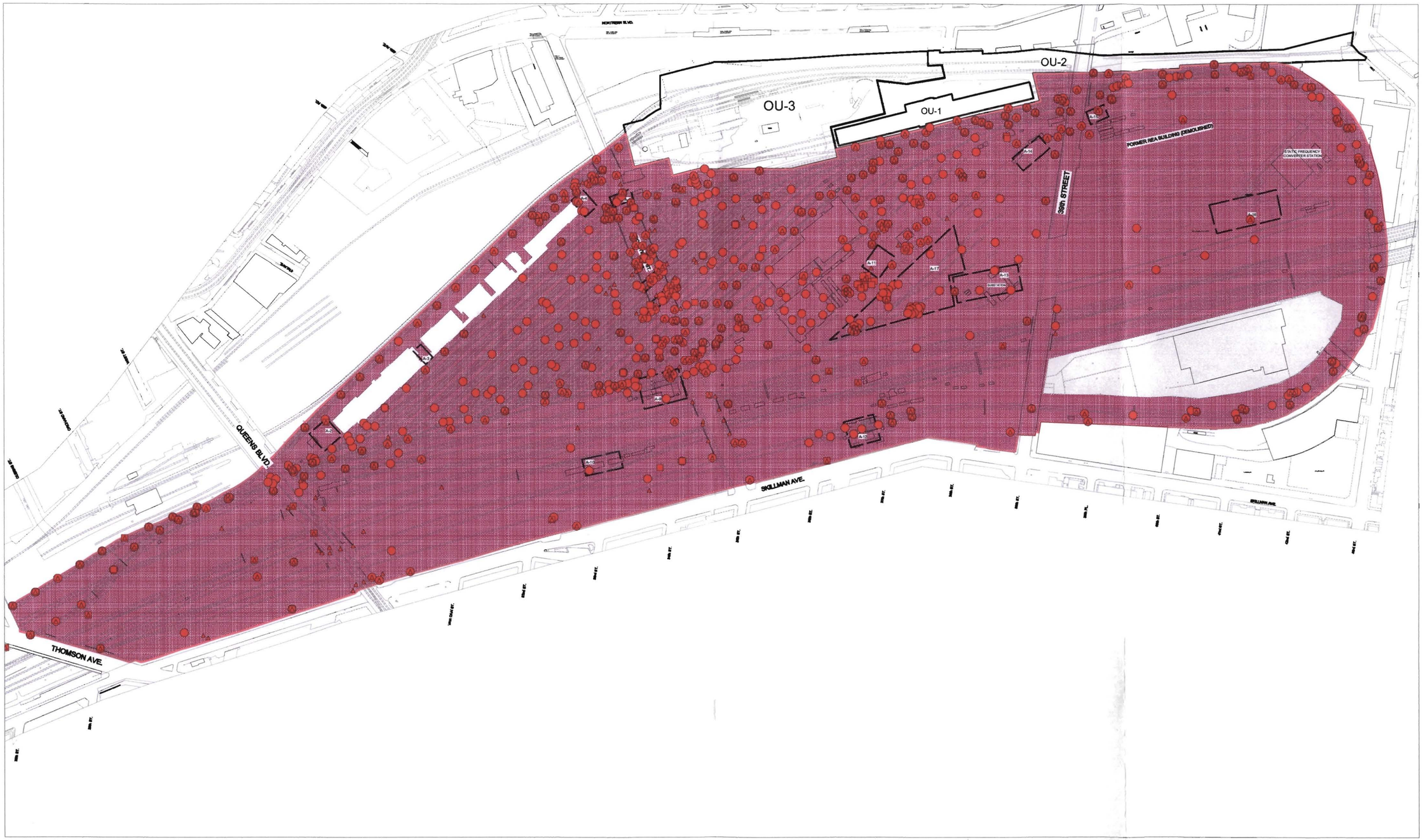
SUMMARY OF SOIL AND UST REMOVAL IRMS PREVIOUSLY COMPLETED IN OU-4

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: RSK	Date: 2/11/2009	FIGURE 12
Prepared by: RSK	Scale: 1 INCH = 400 FEET	
Project Mgr: HG	Office: NY	
File No: AM7114609.WOR	Project: 0055.0071Y009	



LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE NYSDEC 6 NYCRR PART 375 UNRESTRICTED USE CRITERIA

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS GREATER THAN THE NYSDEC 6 NYCRR PART 375 UNRESTRICTED USE CRITERIA FOR ONE OR MORE cPAH COMPOUNDS

LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR LEAD GREATER THAN THE NYSDEC 6 NYCRR PART 375 UNRESTRICTED USE CRITERIA

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 2 EXCAVATION TO ADDRESS YARD COC EXCEEDANCES OF THE NYSDEC 6 NYCRR PART 375 UNRESTRICTED USE CRITERIA

NYSDEC 6 NYCRR PART 375 UNRESTRICTED USE CRITERIA

COMPOUND	CRITERIA	UNITS
PCBs	0.1	MG/KG
LEAD	63	MG/KG
BENZO(A)ANTHRACENE	1	MG/KG
BENZO(A)PYRENE	1	MG/KG
BENZO(B)FLUORANTHENE	1	MG/KG
BENZO(K)FLUORANTHENE	0.8	MG/KG
CHRYSENE	1	MG/KG
DIBENZO(A,H)ANTHRACE	0.33	MG/KG
INDENO(1,2,3-CD)PYRENE	0.5	MG/KG

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AOC)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

NOTES:

OU-4 - OPERABLE UNIT 4

SCOs - SOIL CLEANUP OBJECTIVES

MG/KG - MILLIGRAMS PER KILOGRAM

160' 0 160'

N

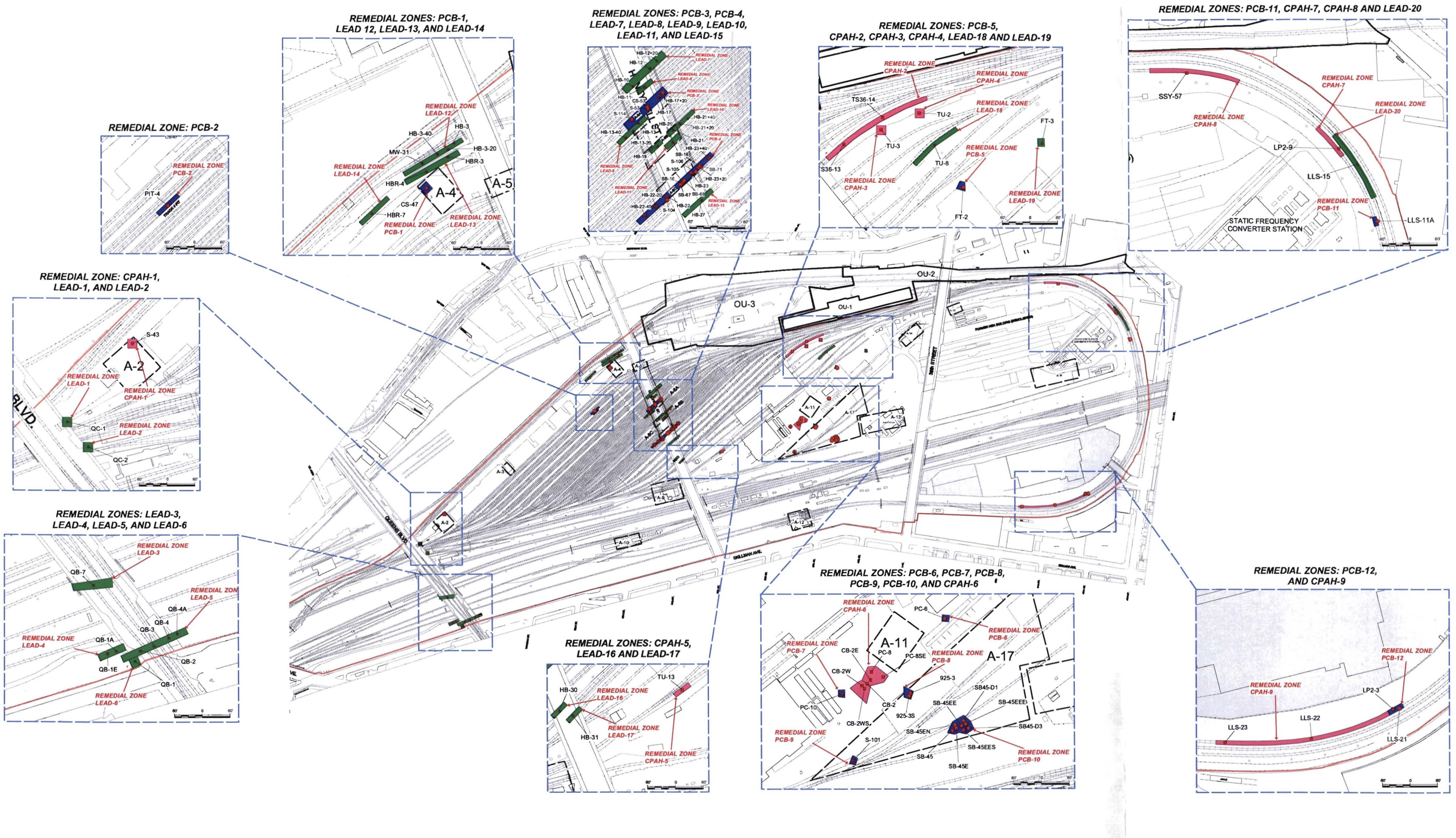
ALTERNATIVE 2 - SOIL EXCAVATION TO UNRESTRICTED USE SCOs

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES, INC.

PLATE 13



EXPLANATION

S-114 ● LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE EXISTING SITE SPECIFIC SOIL CLEANUP LEVEL (25 MG/KG) AND STILL PRESENT AT YARD

CB-2E ■ LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR TOTAL cPAHS GREATER THAN THE EXISTING SITE SPECIFIC SOIL CLEANUP LEVEL (25 MG/KG) AND STILL PRESENT AT YARD (AMTRAK HAS REQUESTED AN ALTERNATE CLEANUP LEVEL)

HB-27 ▲ LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR LEAD GREATER THAN THE EXISTING SITE SPECIFIC SOIL CLEANUP LEVEL (1,000 MG/KG) STILL PRESENT AT YARD (AMTRAK HAS REQUESTED 3,900 MG/KG IN ACCORDANCE WITH 6NYCRR PART 375)

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 3 EXCAVATION TO ADDRESS PCB EXCEEDANCE OF 25 MG/KG

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 3 EXCAVATION TO ADDRESS TOTAL CPAH EXCEEDANCE OF 25 MG/KG

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 3 EXCAVATION TO ADDRESS LEAD EXCEEDANCE OF 1,000 MG/KG

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

NOTES:

1. COCs - COMPOUNDS OF CONCERN FOR THE YARD (PCBs, TOTAL cPAHS, AND LEAD)
2. MG/KG - MILLIGRAMS PER KILOGRAM
3. MG/KG - MILLIGRAMS PER KILOGRAM
4. OU-4 - OPERABLE UNIT 4

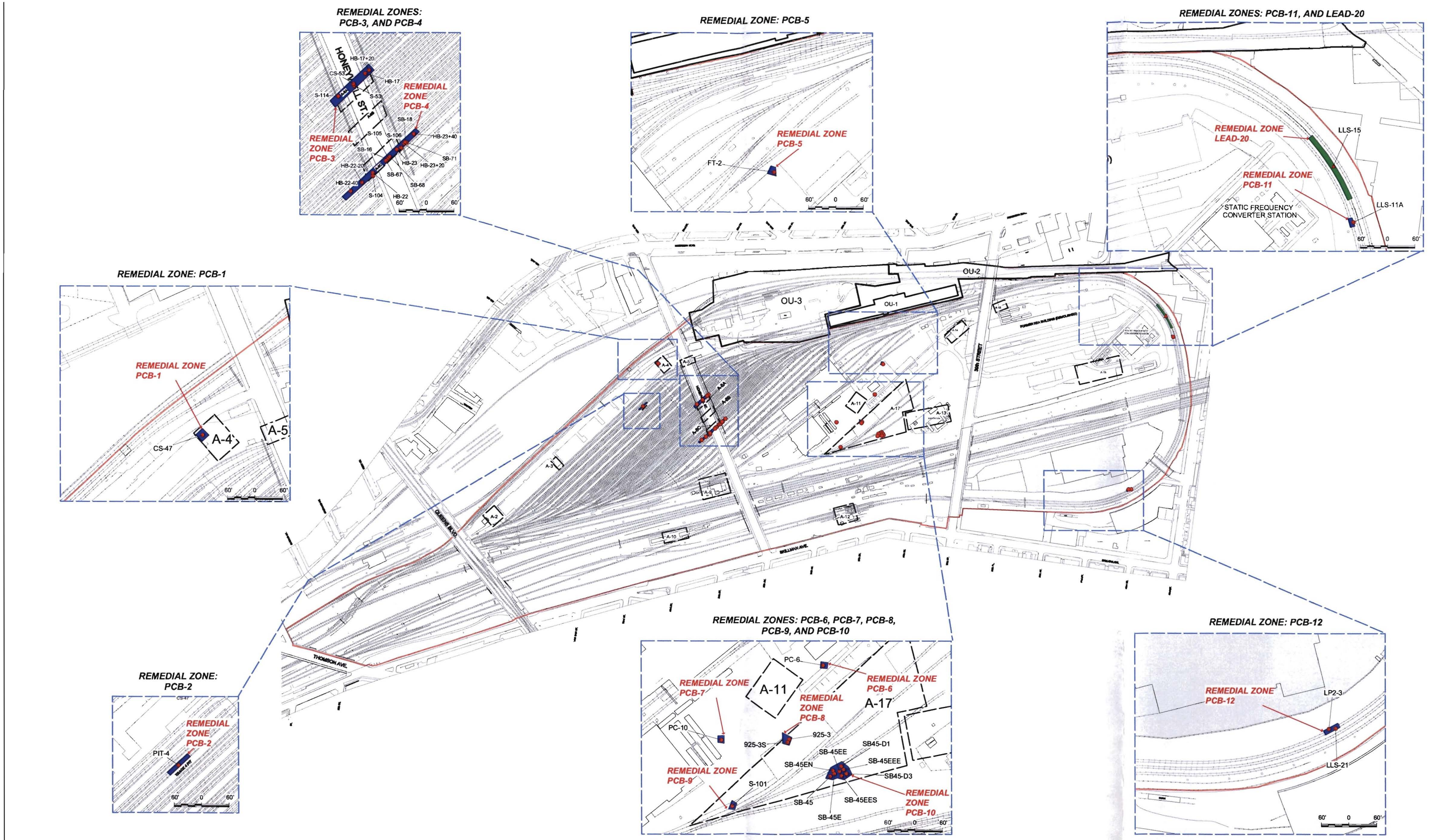
ALTERNATIVE 3 - SOIL EXCAVATION TO EXISTING SITE SPECIFIC SOIL CLEANUP LEVELS

OU-4 PROPOSED REMEDIAL ACTION PLAN

AMTRAK

ROUX ASSOCIATES INC

PLATE 14



EXPLANATION

S-114 ● LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR PCBs GREATER THAN THE EXISTING SITE SPECIFIC SOIL CLEANUP LEVEL (25 MG/KG) AND STILL PRESENT AT YARD

LLS-15 ▲ LOCATION AND DESIGNATION OF SOIL BORING WITH ONE OR MORE SOIL SAMPLE RESULTS FOR LEAD GREATER THAN THE MODIFIED SITE SPECIFIC SOIL CLEANUP LEVEL (3,900 MG/KG, CONSISTENT WITH 6NYCRR PART 375) AND STILL PRESENT AT YARD

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 4 EXCAVATION TO ADDRESS PCB EXCEEDANCE OF 25 MG/KG

APPROXIMATE EXTENT OF PROPOSED REMEDIAL ALTERNATIVE 4 EXCAVATION TO ADDRESS LEAD EXCEEDANCE OF 3,900 MG/KG

A-9 LOCATION AND DESIGNATION OF PREVIOUSLY DETERMINED AREA OF CONCERN (AREA)

PRIVATE PROPERTY NOT OWNED BY AMTRAK (NOT PART OF SUNNYSIDE YARD)

APPROXIMATE EXTENT OF OU-4 BOUNDARY

NOTES:

1. MG/KG - MILLIGRAMS PER KILOGRAM
2. OU-4 - OPERABLE UNIT 4

160' 0 160'

Title: ALTERNATIVE 4 - SOIL EXCAVATION TO MODIFIED SITE SPECIFIC SOIL CLEANUP LEVELS

OU-4 PROPOSED REMEDIAL ACTION PLAN

Prepared For: AMTRAK

ROUX ASSOCIATES INC

FIGURE 15