Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Amtrak, Sunnyside Yard
Operable Unit 2: High Speed Trainset Facility (HSTF) Building Ancillary Areas
Queens, New York
Site Number 241006

November 1997

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Amtrak, Sunnyside Yard Inactive Hazardous Waste Site
Operable Unit 2: HSTF Building Ancillary Areas
Queens, New York
Site No. 241006

Statement of Purpose and Basis

The selected remedial action for Operable Unit 2 (OU 2), for the Amtrak, Sunnyside Yard Inactive Hazardous Waste Disposal Site is presented in this decision document. Operable Unit 2 is designated as the soils above the water table within the Ancillary Areas associated with the proposed High Speed Trainset Facility (HSTF) Service and Inspection Building. The selection of the remedy was made in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for OU 2 of the Amtrak, Sunnyside Yard Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix A of the ROD.

Assessment of the Site

All contaminants of concern present in Operable Unit 2 of the Sunnyside Yard are below the recommended cleanup levels established for the Sunnyside Yard. Leaving this Operable Unit in its present condition without any remedial action would be protective of the human health and the environment.

Description of Selected Remedy

Based upon the results of a Focused Investigation and a Feasibility Study for OU 2, and a sitewide Remedial Investigation, the NYSDEC has selected the No Action alternative. It should be noted that this Operable Unit addresses the contaminants in soils above the groundwater only. Any contamination that may be present in soils below the groundwater or in the groundwater itself, or in site sewers within the confines of HSTF Ancillary Areas are not part of Operable Unit 2, and will be addressed separately by other operable units.

New York State Department of Health Acceptance

The New York State Department of Health concurs that the No Action alternative selected for this portion of the Amtrak Sunnyside Yard site is protective of human health.

Declaration

The selected No Action alternative 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.

11/19/97
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

TABLE OF CONTENTS

SECTION			PAGE
1:	Site Location and Description		1
2:	Site History		2
	2.1	Operational/Disposal History	2
	2.2	Remedial History	2
3:	Current Status		2
	3.1	Summary of Yardwide Remedial Investigation (Excluding OUs 1 & 2)	2
	3.2	Summary of Remedial Investigation for OU 1	3
	3.3	Summary of Investigation for OU 2	3
	3.4	Nature of Contamination	4
	3.5	Extent of Contamination	5
	3.6	Summary of Human Exposure Pathways	5
	3.7	Summary of Environmental Exposure Pathway	6
4:	Enforcement Status		6
5:	Summary of Remediation Goals		6
6:	Summary of the Selected Alternative		6
7:	Highlights of Community Participation		7

Figures - Figure 1: Yard Location Map
- Figure 2: Location of Operable Units
- Figure 3: Site map of Operable Unit 2

Tables - Table 1 through 6: Nature and Extent of Contamination for OU 1 Through OU 6 respectively

Appendix A - Administrative Record

Appendix B - Summary of Phase I and Phase II Investigations

SECTION 1: SITE LOCATION AND DESCRIPTION

Amtrak, Sunnyside Yard is located in an urban area in northwestern Queens County, New York, and is surrounded by commercial, industrial and residential areas (See Figure 1). The Yard occupies 105 acres and functions as a maintenance facility for electric and diesel locomotives. The yard consists of 38 tracks, several buildings, a car washing facility, a demolished engine shop where locomotives used to be serviced, and a metro shop where the train compartments are serviced.

Amtrak has undertaken an ambitious "High Speed Project" which will provide High Speed Train Service from Washington, D.C. to Boston including three-hour service between New York and Boston. The project calls for construction of two maintenance facilities in Boston and Washington, D.C. Amtrak is considering building a third maintenance facility on its property at Sunnyside Yard. **Remediation of soils above the water table within the Ancillary Areas associated with this proposed High Speed Trainset Facility (HSTF) Service and Inspection Building, is Operable Unit 2 and the subject of this Record of Decision (ROD).** The groundwater underneath the proposed building is not the subject of OU 2, and will be addressed as a separate operable unit.

Soil and groundwater data sitewide has already been collected through phased studies and are documented in the Report titled Phase II Remedial Investigation, Volumes I Through V. More data will be collected to complete the groundwater investigation. The groundwater underneath OU 2 will therefore be addressed later as a part of another operable unit, specifically, OU 6.

The Sunnyside Yard, is so large, the access problematic, and the contamination so widespread that it is best to segment it into several Operable Units (See Figure 2). A brief description of the various operable units is as follows:

Operable Unit 1: OU 1 is designated as the soils above the water table within the footprint of the High Speed Trainset Facility (HSTF) Building and is the subject of this ROD (See Figure 3).

Operable Unit 2: OU 2 is designated as the soils above the water table within the footprint of the HSTF Service and Inspection Building ancillary structures (i.e. the access road and utilities route, the parking area, the construction easement area which surrounds the building and the construction lay down area).

Operable Unit 3: OU 3 is designated as the soils and separate-phase petroleum above the water table in Area 1* of the Yard.

* The Remedial Investigation of the Sunnyside Yard was divided into sixteen (16) areas of concern based on past site use and reports of known or suspected contamination. These are described in Appendix B.

Operable Unit 4: OU 4 is designated as the soils above the water table in the remainder of the Yard.

Operable Unit 5: OU 5 is designated as the sewer system beneath the Yard.

Operable Unit 6: OU 6 is designated as the saturated soils and the groundwater beneath the Yard.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The Sunnyside Yard was originally constructed in the early 1900's by the Pennsylvania Railroad Tunnel and Terminal Company, a subsidiary of the Pennsylvania Railroad, later known as the Penn Central Transportation Company. On April 1, 1976, the Consolidated Rail Corporation (Conrail) acquired the Yard, and the same day conveyed it to Amtrak, which has continued to operate it as a storage and maintenance facility. The Yard has widespread contamination from petroleum and polychlorinated biphenyls (PCBs). Petroleum disposal, apparently, occurred over a period of time due to leaks from several underground storage tanks (USTs) containing diesel fuel and #2 fuel oil. PCBs are believed to have been disposed as a result of accidental leaks from stationary transformers, and from transformers mounted on cars and locomotives. The transformers mounted on cars and locomotives occasionally leaked PCBs as a result of pressure build-up, or as a result of strikes by stones on the track to the under belly of the transformers. Specific dates of disposal are not known.

2.2: Remedial History

Amtrak records indicate that between 1977 and 1986 there were at least six releases of PCBs from the transformers all of which are believed to have been remediated to less than 50 ppm, the prevailing standard at the time. It appears there were other releases of PCBs that were not remediated. Diesel and #2 fuel oil leaks from USTs occurred for an unknown period until 1984. A plume of free product approximately 200 ft. in diameter and of non-uniform thickness, up to several feet thick (apparent thickness) in certain locations, overlies the groundwater table in Area 1. The actual product thickness, though, would likely be far less than the measured thickness in a well due to the capillary fringe effect. A passive collection system put in place since 1989 has recovered approximately 5000 gallons of this product. More than 65,000 gallons of this viscous petroleum remain in place and require further investigation and study to determine the most feasible means of removal and disposal. A part of the physical area covered by this Operable Unit is in the immediate vicinity of this plume, but is not known to contain any free product.

SECTION 3: CURRENT STATUS

In response to a determination that Sunnyside Yard contains hazardous waste which presents a significant threat to human health and the environment, Amtrak has conducted a sitewide Remedial Investigation. The Department has concluded that more work is necessary to complete this investigation and that this can best be brought to a close by segmenting the entire investigation into six (6) operable units. These operable units were described in Section 2. A PRAP and a ROD has already been issued for OU 1. A feasibility study will be conducted for each remaining Operable Unit. OUs 1 and 2 have been created to allow timely construction of the HSTF building.

3.1 Summary of the Remedial Investigation (Excluding OUs 1 and 2)

A yardwide remedial investigation, which is still in progress, has so far been conducted primarily in two phases. Phase I was conducted between October 1990 and March 1991. Phase II was conducted between

August 1992 and August 1994. In addition, certain focused investigations have also been conducted. The report titled Phase II Remedial Investigation, Volume I of V, dated February 1995 summarizes Phase I and all other investigations conducted as of that date.

The Phase I investigation targeted sixteen (16) areas of concern (AOC) based on inspections and knowledge of the Yard. The main objectives of the Phase I investigation were: 1) to define the nature and extent of the free product plume in Area 1, the area east of the Engine House where USTs were located; 2) to identify and determine the nature and extent of contamination in the other 15 areas of concern; and, 3) to determine hydrogeologic conditions at the Yard. (See **Appendix B** for a brief description of the 16 AOC under a summary of the Phase I Investigation.)

3.2 Summary of Remedial Investigation For OU 1:

An investigation of the proposed construction site of the HSTF Service and Inspection Building was conducted in April 1996, and the results are summarized in "Limited Phase II Site Environmental Assessment Report, dated December 1996. A ROD was issued for OU 1 requiring excavation and offsite disposal of 485 cubic yards of contaminated soil.

3.3 Summary of the Remedial Investigation For OU 2

OU 2 is the subject of this PRAP. In view of the extensive data collected during Phase I and II investigations, only a limited focused investigation was necessary. The OU 2 investigation is described in the report titled "Focused Remedial Investigation For Operable Unit 2, dated June 15, 1997, Revised August 22, 1997". Seven (7) soil borings (HST 9 through 15) were completed down to the water table. In addition, three boreholes (TP 8 through 10) were completed as monitoring wells for future characterization of groundwater quality. Two soil samples were collected from each boring; one sample was collected from the 0 to 2 foot below ground surface (bgs) interval, and the other sample was collected from the 2 foot interval just above the water table.

To determine if the soil media contained contamination at levels of concern, the RI analytical data was compared to NYSDEC TAGM 4046 soil cleanup guidelines which serve as Standards, Criteria, and Guidance (SCGs) for the protection of groundwater, background conditions, and risk based remediation criteria.

As part of the OU 1 effort, sitewide Remedial Investigation results and the OU 1 investigation results were compared to TAGM 4046 values. After considering the site's present and future use as rail yard, the NYSDEC in consultation with the State Health Department (NYSDOH) established the following **Cleanup Criteria**:

PCBs: 25 ppm for both surface and subsurface soils.
Semi-volatiles: 10 ppm total carcinogenic PAHs for both surface and subsurface soils.
Lead: 1,000 ppm for both surface and subsurface soils.

The above clean up criteria was established for the entire Yard, and is based on the fact that the site will remain a rail yard and all future use of the site will be regulated through institutional controls, such as deed restrictions or notifications. To protect Yard employees from coming in contact with PCBs in surface soils, the NYSDOH has specified that the 25 ppm PCBs criteria will apply provided the following restrictions are enacted:

1. Access is restricted to employees by maintaining the existing perimeter fences and guards;

2. The facility will continue to be operated as a rail yard;

3. The majority of the rail yard is covered and shall continue to be covered with ballast, minimizing the potential for surficial runoff transporting PCBs offsite and the tracking of PCB contaminated soils into buildings or off-site by employees or vehicles.

Following clean up of materials with PCBs greater than 25 ppm, average surficial levels of PCBs remaining will be substantially less than 25 ppm.

While the above restrictions apply to the entire Yard, these are not material to OU 2 as none of the contaminants of concern are above the established clean up levels, and a No Action Alternative has been selected.

3.4 Nature of Contamination:

Yardwide, PCBs and Petroleum spills are the main concerns at the Sunnyside Yard. PCBs, nine (9) Semi-volatiles (mostly petroleum PAHs), eight (8) Volatile Organic Compounds (VOCs) and twelve (12) metals were detected in soils above the recommended soil cleanup guidance numbers suggested in the Department's TAGM 4046. The likely sources of PCBs at the Sunnyside Yard include accidental leaks from stationary transformers and power transformers mounted on locomotives. The sources of petroleum contamination are diesel, heating oil, and gasolene underground storage tanks (USTs) which leaked in the past. The presence of metals above the background levels cannot be attributed to any specific source.

In **OU 2**, the following contaminants were detected:

VOCs - One or more of the seven (7) volatile organic compounds (benzene, toluene, ethyl benzene, xylene, acetone, methylene chloride, and tetrachloroethylene) were detected in 13 of the 20 samples. The first four VOCs are petroleum constituents, other VOCs may have been used as solvents. Exposure to these VOCs can affect the liver, kidney and central nervous system. However, none of these volatiles were present above the recommended soil clean up levels.

PAHs - Several semivolatile organic compounds (SVOCs) were detected, including some carcinogenic PAHs; none of the samples, however, exceeded the site specific cleanup level of 10 ppm. Polycyclic aromatic hydrocarbons (PAHs) are semivolatile organic compounds. These are frequently produced as combustion by-product, and are found in petroleum and coal product residues.. PAHs are of concern because they include known and potential carcinogens. Exposure to high levels of PAHs can cause lung and kidney tumors.

PCBs - PCBs concentrations ranged from non-detect to 4.5 mg/kg (ppm) - well below the site specific cleanup level of 25 ppm. PCBs were detected in low concentrations in most samples. PCBs are classified as probable carcinogens that persist in environment for a long time. PCBs cause toxic effects in animals and humans. This can range from physiological disturbances in humans to loss of life in lower micro-organisms.

Metals - Lead is a contaminant of concern because it is a carcinogen that affects kidney and lungs. Lead concentrations ranged from 1.5 mg/kg to 322 mg/kg (ppm) - well below the site specific cleanup level of 1,000 ppm.

3.5 Extent of Contamination

Yardwide: PCBs and petroleum are present in soils across most of the Yard, but the concentrations are highest in Areas 1, 4, 8, 9 and 17. There is a separate phase petroleum plume in Area 1 with up to 127 ppm of PCBs. Maximum concentrations of PCBs detected in surface soils were 31,000 ppm in Area 8. Lead was detected at a maximum concentration of 1300 ppm. PCBs were also found in sewers at concentrations of up to 149 ppm in sediments and up to 0.91 ppb in water. See Tables 3 through 6 for details.

OU 1: **PCBs** were detected in 16 of the 19 soil samples; all but one were less than 1 ppm. The maximum concentration was 2 ppm. No **VOCs** were detected above the TAGM 4046 Recommended Soil Clean Up Objectives (RSCOs). Several SVOCs were detected, but only six (all **PAHs**) were detected above the TAGM 4046 (RSCOs). (See Table 1 for details.) As stated before, groundwater quality underneath OU 1 will be addressed later as part of OU 6.

OU 2: PCBs were detected in 15 of the 20 samples at a maximum concentration of 4.5 ppm. VOCs were detected in 13 of the 20 samples, but none were detected above the NYSDEC's Recommended Soil Cleanup Objectives as stated in the Department's Technical and Administrative Guidance Memorandum (TAGM 4046). Lead, the only metal of concern, ranged from 1.5 ppm in TP 10 in the 9 to 10 ft interval below ground surface (bgs) to 322 ppm in TP -8 in the 0 to 2 ft bgs. Total Carcinogenic Compounds (CPAHs) ranged from non-detect to a maximum of 8.29 ppm in TP 10 in the 0 to 2 ft interval bgs. .

None of the contaminants of concern identified at the Amtrak Yard are present in OU 2 above the clean up levels established for the Yard. The groundwater quality underneath OU 2 will be addressed later as part of OU 6. See Table 2

3.6 Summary of Human Exposure Pathways:

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events. Since there are no

contaminants of concern present in OU 2 above the site specific clean up levels, there is no need to evaluate exposure pathways.

3.7 Summary of Environmental Exposure Pathways:

As stated above, Sunnyside Yard is an industrial facility located in a busy urban area. Environmental exposure pathways were therefore not considered to have a significant environmental impact.

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.

On September 21, 1989, The NYSDEC entered into an order on consent with Amtrak and New Jersey Transit which provides for Amtrak to conduct a remedial investigation and a feasibility study (RI/FS) under NYSDEC's oversight.

Date	Index No.	Subject of Order
9/21/89	**W2-0081-87-06**	**RI/FS**

A revision to the above consent order is currently being negotiated to recognize segmentation of the entire investigation into the various operable units as discussed above.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

The contamination in OU 2 is below the recommended soil clean up goals established by the NYSDEC for the entire Yard. As such, there are no remediation goals for OU 2.

SECTION 6: SUMMARY OF THE SELECTED ALTERNATIVE

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous wastes present at the site. As stated previously, the remedial investigation for OU 2 has shown that the contaminant levels are below the recommended soil clean up levels established for the entire Yard. As such no portion of this operable unit requires remediation. Leaving this operable unit in its present condition without any remedial action would be protective of human health and the environment.

Based upon the results of the remedial investigation and other previous investigations performed at this site, the NYSDEC is selecting the No Action alternative for OU 2.

It should be noted that this operable unit addresses the contamination in soils only. **Sewers and groundwater are not addressed by this Operable Unit, and accordingly, are not discussed here.** The

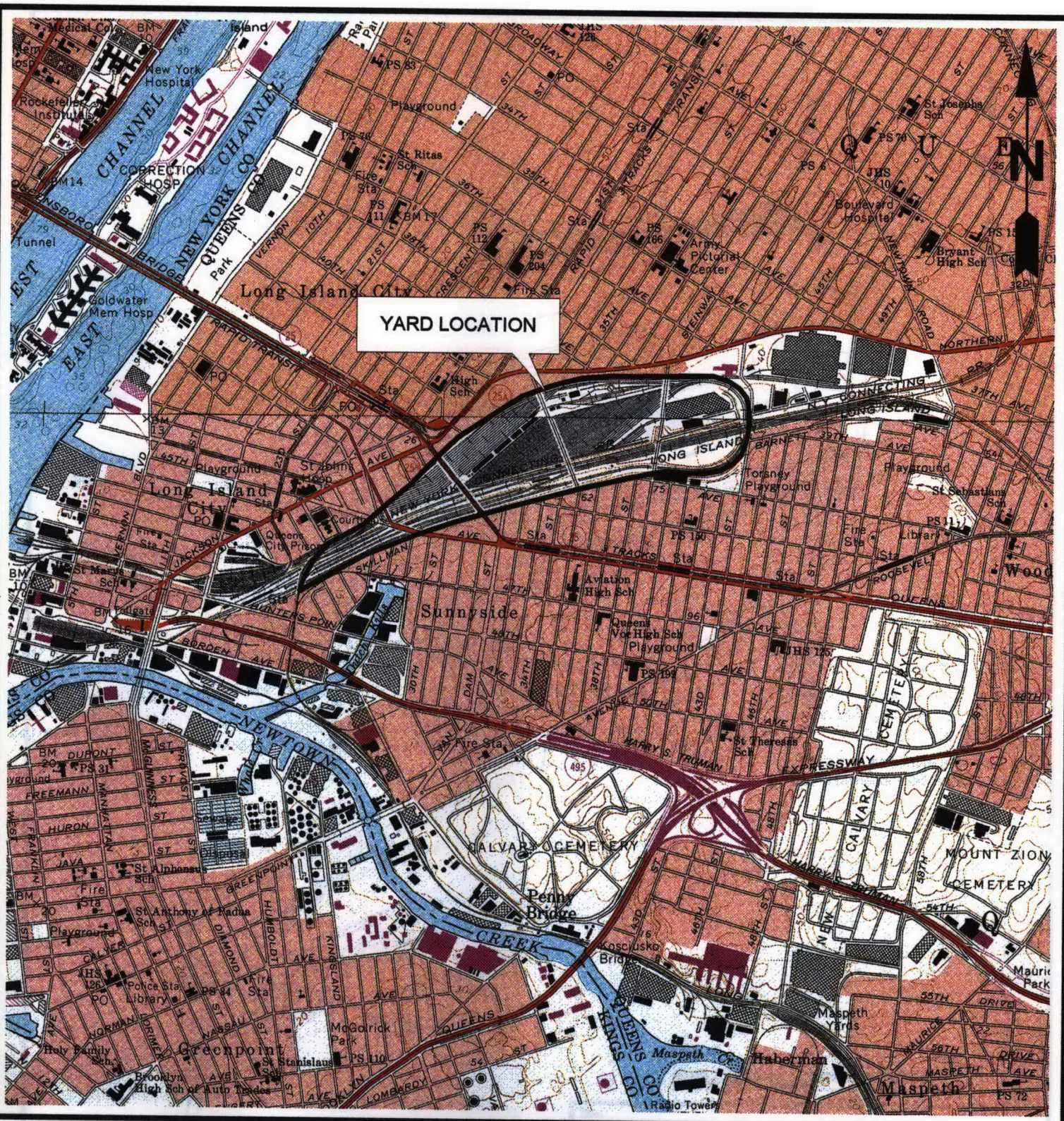
groundwater beneath OU 2 will be evaluated as a part of OU 6. The sitewide sewer system will be evaluated under Operable unit 5.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort 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:

- A repository for documents pertaining to the site was established at the NYSDEC's Regional Office in Long Island City, and at the Queens County Library on Green Point Avenue in Long Island City. A site mailing list was established and fact sheets and meeting notices were sent to the area property owners, local political officials, local media and other interested parties. A Public Meeting was organized for October 21, 1997 at the Department's Region 2 Office in Long Island City, Queens, New York. State officials from the NYSDEC as well as representatives of Amtrak were available to discuss the preferred remedy (No Action) and seek public comments. No members of the public attended the meeting. The public comment period ended on November 6, 1997 and no comments were received through the mail or telephone

FIGURES



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

Title:

YARD LOCATION MAP

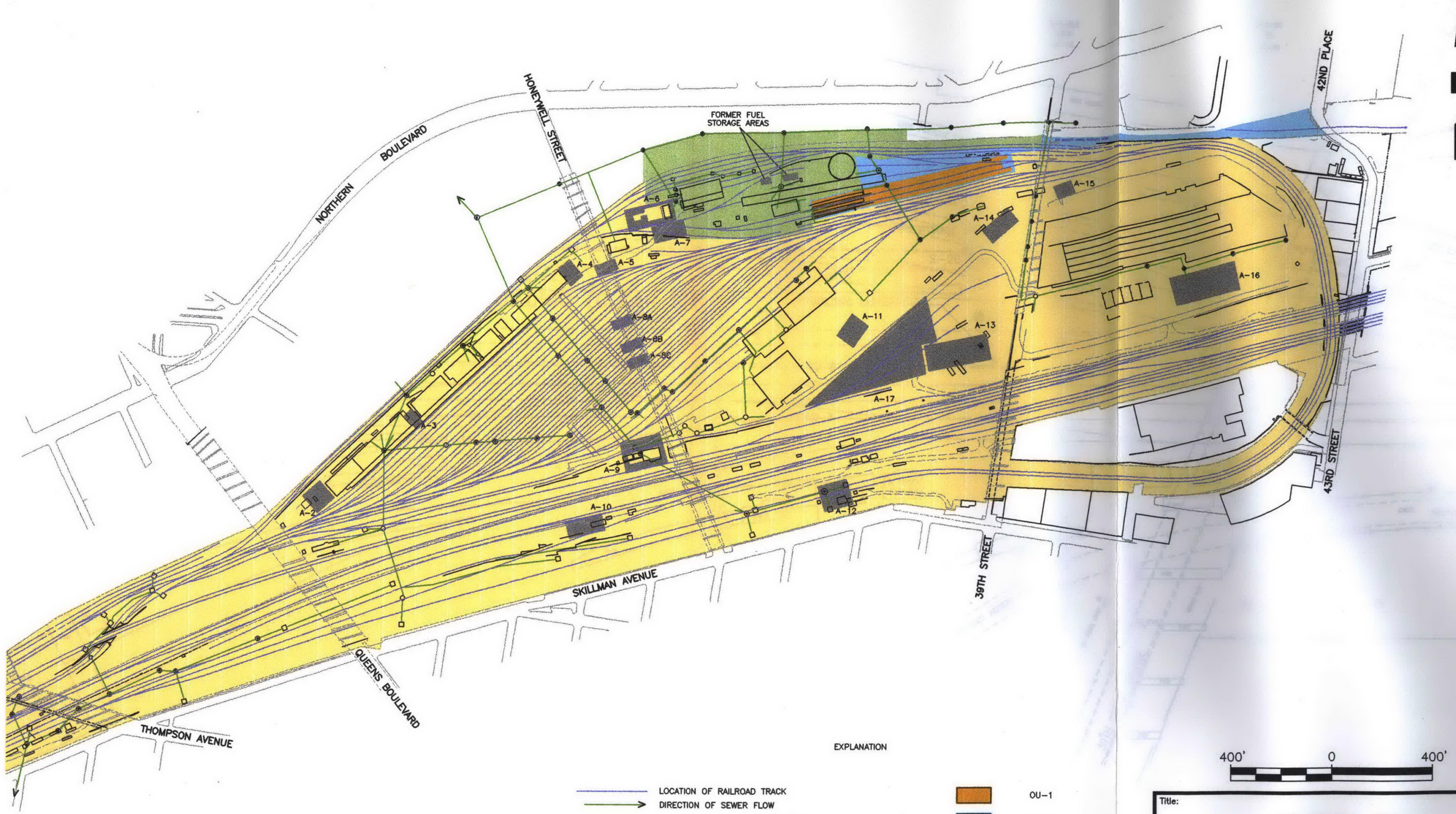
SUNNYSIDE YARD
39-29 HONEYWELL STREET
QUEENS, NEW YORK

Prepared For:

AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by:	J.D.	Date:	5/97	FIGURE 1
Prepared by:	R.R.	Scale:	1"=2,000'	
Project Mgr:	J.D.	Status:	Final	
File No:	52123012	Project:	05552Y	



NOTES:

1. LOCATIONS AND DIAMETERS 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.

Title:

LOCATION OF OPERABLE UNITS

SUNNYSIDE YARD, QUEENS, NEW YORK

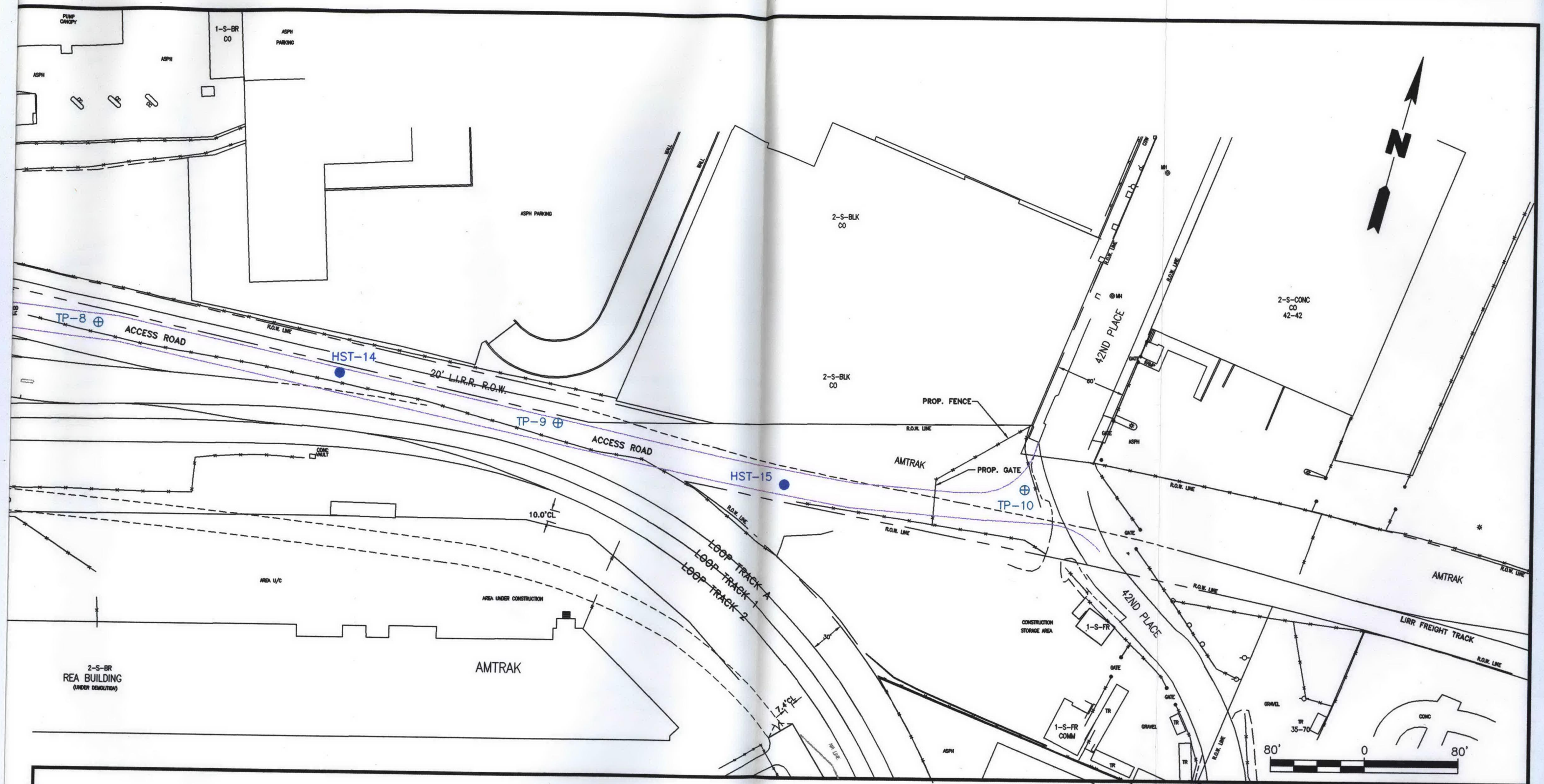
Prepared For:

AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: H.G.	Date: 8/97	FIGURE
Prepared by: R.K.	Scale: AS SHOWN	2
Project Mgr: H.G.	Status: FINAL	
File No: A5213602	Project: 05552Y06	

N:\AM055\AM52\135\A5213602.DWG



LEGEND

- APPROXIMATE HSTF S&I BUILDING LOCATION OU-1
- MW-68 ⊕ MONITORING WELL LOCATION AND DESIGNATION
- S-26 ● PHASE I SOIL BORING LOCATION AND DESIGNATION
- HST-8 ● OU-1 SOIL BORING LOCATION AND DESIGNATION
- TP-7 ⊕ TEMPORARY PIEZOMETER LOCATION AND DESIGNATION
- APPROXIMATE OU-2 BOUNDARY
- HST-10 ● OU-2 SOIL BORING LOCATION AND DESIGNATION
- TP-8 ⊕ OU-2 MONITORING WELL LOCATION AND DESIGNATION

Title:

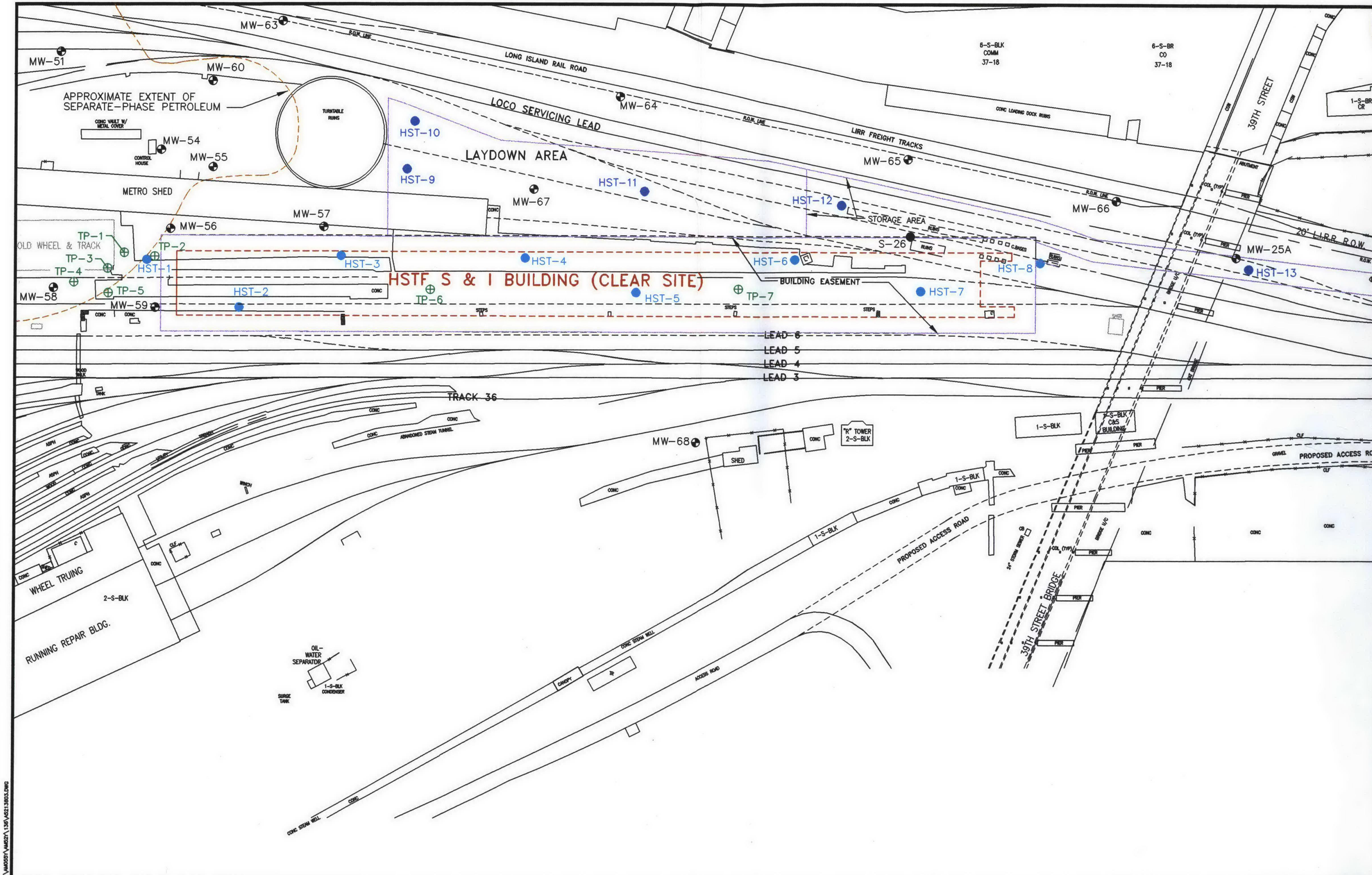
SITE MAP
OPERABLE UNIT 2

SUNNYSIDE YARD, QUEENS, NEW YORK

Prepared For: AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: H.G.	Date: 8/97	FIGURE
Prepared by: R.K.	Scale: As Shown	3
Project Mgr: J.D.	Status: Final	
File No: A5213603	Project: 05552Y06	


MW-63
MW-51
MW-60
APPROXIMATE EXTENT OF
SEPARATE-PHASE PETROLEUM
CONC VAULT W/ METAL COVER
MW-54
MW-55
CONTROL HOUSE
TURNTABLE RUINS
METRO SHED
OLD WHEEL & TRACK
TP-1
TP-2
TP-3
TP-4
TP-5
TP-6
TP-7
MW-56
MW-57
MW-58
MW-59
MW-64
MW-65
MW-66
MW-67
MW-68
MW-25A
S-26
LONG ISLAND RAIL ROAD
LOCO SERVICING LEAD
LIRR FREIGHT TRACKS
LAYDOWN AREA
STORAGE AREA
HST-1
HST-2
HST-3
HST-4
HST-5
HST-6
HST-7
HST-8
HST-9
HST-10
HST-11
HST-12
HST-13
HSTF S & I BUILDING (CLEAR SITE)
BUILDING EASEMENT
LEAD 6
LEAD 5
LEAD 4
LEAD 3
TRACK 36
ABANDONED STEAM TUNNEL
"R" TOWER
2-S-BLK
1-S-BLK
SHED
6-S-BLK
COMM
37-18
6-S-BR
CO
37-18
1-S-BR
CR
CONC LOADING DOCK RUINS
39TH STREET
39TH STREET BRIDGE
20' LIRR ROW
PROPOSED ACCESS ROAD
ACCESS ROAD
WHEEL TRUING
RUNNING REPAIR BLDG.
2-S-BLK
OIL-
WATER
SEPARATOR
1-S-BLK
CONDENSER
SURGE
TANK
CONC STEAM WELL
CANOPY
N:\AM05SY\AM521\136\A521380S.DWG

TABLES

Table 1. Nature and Extent of Soil Contamination - Operable Unit 1

Class	Contaminant of Concern	Concentration Range (ppm)[a]	NYSDEC Site-Specific Cleanup Level (ppm)[a]	Frequency Exceeding Cleanup Level
SVOCs[b]	Carcinogenic PAHs[c]	ND[d] - 16.5	10[e]	1 of 19

a. ppm - parts per million

b. SVOC - Semivolatile Organic Compounds

c. PAH - Polycyclic Aromatic Hydrocarbons

d. ND - non detect

e. Cleanup level for total carcinogenic PAHs

Table 2. Nature and Extent of Soil Contamination - Operable Unit 2

Class	Contaminant of Concern	Concentration Range (ppm)[a]	NYSDEC Site-Specific Cleanup Level (ppm)[a]	Frequency Exceeding Cleanup Level
None	None	NA[b]	NA	NA

a. ppm - parts per million

b. NA = not applicable

Table 3. Nature and Extent of Soil Contamination - Operable Unit 3

Class	Contaminant of Concern	Concentration Range (ppm)[a]	NYSDEC Site-Specific Cleanup Level (ppm)[a]	Frequency Exceeding Cleanup Level
PCBs[b]	Total PCBs	0.023 - 73	25	1 of 16
Metals	Lead	ND[c] - 1,080	1,000	1 of 12

a. ppm - parts per million

b. PCBs - Polychlorinated biphenyls

c. ND - non detect

Table 4. Nature and Extent of Soil Contamination - Operable Unit 4

Class	Contaminant of Concern	Concentration Range (ppm)[a]	NYSDEC Site-Specific Cleanup Level (ppm)[a]	Frequency Exceeding Cleanup Level
SVOCs[b]	carcinogenic PAHs[c]	ND[d] - 46.3	10[e]	2 of 23
PCBs[f]	Total PCBs	ND - 31,000	25	8 of 84
Metals	Lead	ND - 1,290	1,000	2 of 44

a. ppm - parts per million

b. SVOCs - Semivolatile Organic Compounds

c. PAH - Polynuclear Aromatic Hydrocarbons

d. ND - non detect

e. Cleanup level for total carcinogenic PAHs

f. PCBs - Polychlorinated biphenyls

Table 5. Nature and Extent of Contamination - Operable Unit 5

Media	Class	Contaminant of Concern	Concentration Range (ppm)[a]	NYSDEC Standard[b]	NYSDEC Site-Specific Cleanup Level	Frequency Exceeding Cleanup Level
Sewer Water	PCBs[c]	Total PCBs	ND[d] - 0.020 (unfiltered)	0.0003	*	**
		Total PCBs	0.000015 - 0.0001 (filtered)	0.0003	*	**
Sewer Sediment	PCBs	Total PCBs	0.170 - 148.9	NA[e]	*	**

a. ppm - parts per million

b. NYSDEC Standard - New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.3.8) New Discharges to Publicly Owned Treatment Works

c. PCBs - Polychlorinated biphenyl

d. ND - non detect

e. NA - not available

* no site-specific cleanup levels established by NYSDEC

** frequency to be determined upon receiving site-specific cleanup levels

Table 6. Nature and Extent of Ground-Water Contamination - Operable Unit 6

Class	Contaminant of Concern	Concentration Range (ppb)[a]	NYSDEC Standard[b](ppb)[a]	NYSDEC Site-Specific Cleanup Level	Frequency Exceeding Cleanup Level
VOCs[c]	Trichloroethene	ND[d] - 75	5	*	**
	1,2-Dichloroethene	ND - 46	5	*	**
	Tetrachloroethene	ND - 23	5	*	**
PCBs[c]	Total PCBs	ND - 8.9	0.1	*	**
Metals	Antimony	ND - 46.9	3	*	**
	Barium	18.1 - 1,020	1,000	*	**
	Beryllium	ND - 3.7	3	*	**
	Chromium	ND - 146	50	*	**
	Copper	ND - 421	200	*	**
	Iron	377 - 152,000	300	*	**
	Lead	ND - 207	25	*	**
	Magnesium	1,540 - 49,800	35,000	*	**
	Manganese	85 - 9,410	300	*	**

Class	Contaminant of Concern	Concentration Range (ppb)[a]	NYSDEC Standard[b](ppb)[a]	NYSDEC Site-Specific Cleanup Level	Frequency Exceeding Cleanup Level
Metals	Sodium	4,470 - 213,000	20,000	*	**
	Zinc	ND - 696	300	*	**

a. ppb - parts per billion

b. NYSDEC Standard - New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1 TOGS)

c. VOCs - Volatile Organic Compounds

d. ND - non detect

e. PCBs - Polychlorinated biphenyl

* no site-specific cleanup levels provided by NYSDEC

** frequency to be determined upon receiving site-specific cleanup levels

APPENDIX A

APPENDIX A

ADMINISTRATIVE RECORD

1. Order on Consent - September 21, 1989
2. Order on Consent, Revised August 25, 1993
3. Focused Remedial Investigation For Operable Unit 2, Revised August 22, 1997
4. Operable Unit 2 Feasibility Study - August 28, 1997
5. Proposed Remedial Action Plan - October 1997

APPENDIX B

SUMMARY OF THE PHASE I INVESTIGATION

Area 1 - This area around the Engine House includes nine abandoned USTs; locomotive fueling area; Engine House; and, the Metro Shop. Phase I confirmed that a free product plume exists in this area. The free product plume exceeds 4 ft. in thickness in certain wells (the true thickness may be less); extends northward to the property boundary; and, contains PCBs up to 122.673 ppm. Phase I also established that Area 1 discharges surface water and groundwater from several of its sources into the primary sewer system. PCBs were detected in two shallow monitoring wells (MW-13 and MW-22). The deep monitoring well MW-23 had petroleum constituents, but had no PCBs.

Area 2 - This is the Material Control Area. Phase I found that an UST exists in this are which may have leaked.

Area 3 - There are three(3) 750 gallon USTs present in this area that dispense gasoline. High total petroleum hydro carbons (TPH) were found in some track areas, but no significant impact from the USTs to the underlying soils or groundwater was found.

Area 4 - A 22,000 gallon UST is located here that supplies no. 2 fuel oil to the facility boiler. High TPH concentrations were found in both shallow and deep soils. The tank may have leaked.

Area 5 - Two PCBs transformers are located in this area. No PCBs or PHC sources appear to be present here.

Area 6 - Formerly known as Oil House, oil was once found floating here. The area was later capped. PHCs in surface soils were found up to 13,690 ppm, but no free product was found in the down gradient well.

Area 7 - This is a former empty drum storage area where PHC concentrations were less than 500 ppm. This does not appear to be a source of petroleum contamination, although a saturated soil sample had some sheen.

Areas 8A, 8B, and 8C -All these three are potential source areas. PCBs transformers were located here and PCBs were found in both surface and subsurface soils

Area 9 - Compressor and transformers are located in a two storey structure here. High concentrations of PHC were found in soils (up to 162,860 ppm) and in groundwater (up to 2.2 ppm). Oil leaks from compressors have impacted soil and groundwater.

Area 10 - The soils in this area around Transformer Substation 44 were found to be heavily stained. Phase I results showed soils have been impacted by petroleum and PCBs.

PHASE I SUMMARY Continued:

Area 11 - This former empty drum storage area was found to have some petroleum impacts, typical of the entire Yard, but did not appear to have impacted the groundwater quality.

Area 12 - This Car Wash Area did not appear to be a source of either petroleum or PCBs, although low levels of both PHCs and PCBs, typical of the entire Yard, were found in soils.

Area 13 - Soils in this former storage area were found to contain low levels of PHCs and PCBs (up to 5 ppm).

Area 14 - No PCBs were found in soils in this former empty drum storage area.

Area 15 - In this former drum storage area, surface soils were found to contain up to 3,480 ppm of PHCs and less than 1 ppm of PCBs. GW in this area (MW-25) was found to contain 2.85 ppb of PCBs.

Area 16 - This area near the old abandoned REA Building was investigated because several USTs were located in this area. (The USTs were emptied in 1989.) Low concentrations of PCE were found in a downgradient well (MW-32), but the area did not appear to be a source of petroleum or PCBs contamination.

Two other areas of concern were identified during the Phase I. One, the area known as 68 Spur, located west of Area 13, was used for Vehicle repair and fueling; and the other, a temporary transformer storage area near the southwest corner of the Wheel House Complex was found to have stained soils. PHC concentrations in the 68 Spur area were typical of the Yard, and no PCBs were found. The PHC and PCBs concentrations in the second area were as high as 14,267 ppm and 1.91 ppm respectively.

As a result of the Phase I findings, a Phase II Investigation was done :1) to confirm the results of Phase I and further delineate the extent of contamination; 2)to investigate if the contaminants were migrating offsite through the site sewer system and/ or through the dissolved phase in groundwater. More than 60 monitoring wells and 300 soil borings have been installed as part of these investigations.

SUMMARY OF THE PHASE II INVESTIGATION

- Areas 1, 8, 9, and 17 are heavily contaminated with petroleum and PCBs
- No further action is needed in Areas 2 through 6 and in areas 10 through 16
- PCBs are present in sewer water and sediments
- PCBs were detected in some wells, but their presence is attributed to contaminated sediments
- The free product plume is limited to Area 1 and not moving beyond the property boundary.
- Further investigation is needed in Area 1 and 7
- The Sewer System needs to be further investigated

The Department believes that further investigation is needed to support the conclusions of the Phase II report. A site wide sewer investigation has been continuing, and a report titled "Summary of The Results For The June-July 1996 Sampling Program and Recommended Scope of Work" was issued November 1, 1996.