WORK PLAN FOR THE DELINEATION OF LEAD TRACK NO. 6

Sunnyside Yard
Queens, New York

ROUX Associates, Inc.
ENVIRONMENTAL CONSULTING & MANAGEMENT

WORK PLAN FOR THE DELINEATION OF LEAD TRACK NO. 6

Sunnyside Yard
Queens, New York

May 29, 1997

Prepared for:

National Railroad Passenger Corporation
30th Street Station
4th Floor South
Philadelphia, Pennsylvania 19104

Prepared by:

ROUX ASSOCIATES, INC.
1377 Motor Parkway
Islandia, New York 11788

CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The National Railroad Passenger Corporation (Amtrak) currently owns and operates a train makeup and maintenance facility known as Sunnyside Yard (Yard), located at 39-29 Honeywell Street in Queens County, a borough of New York City, New York (Figure 1). A portion of the Yard has been designated by Amtrak as the site for a proposed High Speed Trainset Facility (HSTF) Service and Inspection (S&I) Building. Additionally, modifications to other areas of the Yard are required to accommodate the HSTF program.

Soil quality data generated from seven surface soil samples (L6-1 through L6-5, L5-1, and TT-1, shown in Figure 2) collected during performance of a HSTF-related investigation for track modifications identified four locations (L6-1, and L6-3 through L6-5), all on Lead Track No. 6, where total carcinogenic polycyclic aromatic hydrocarbons (CPAHs) concentrations exceed the New York State Department of Environmental Conservation (NYSDEC) recommended cleanup objective of 10 parts per million (ppm). Total CPAHs detected above the cleanup objective ranged from 10.16 ppm in L6-5 to 54.22 ppm in L6-3 (Table 1). Analytical results for polychlorinated biphenyls and metals, shown in Tables 2 and 3, respectively, were below Yard-specific cleanup levels recommended by the NYSDEC. At the request of Amtrak, Roux Associates, Inc. (Roux Associates) has prepared this work plan to further delineate the extent of CPAHs within the confines of Lead Track No. 6 above the cleanup objective.

1.1 Objective

The objective of this investigation is to delineate, insitu, the vertical and horizontal extent of CPAHs above the 10 ppm cleanup level for removal and disposal purposes, prior to excavation. Amtrak plans to excavate to a depth of approximately one foot below land surface (bls) (i.e., to the bottom of the existing ballast layer) along the Lead Track No. 6 work area to remove existing rails, ties, and ballast. This material will be stockpiled and sampled for disposal in accordance with all applicable local, state and federal regulations. Therefore, for this scope of work, sample collection will begin from the bottom of the existing ballast interval.

2.0 SCOPE OF WORK

The scope of work will consist of the drilling and sampling of 11 soil borings (L6-1 through L6-11) along Lead Track No. 6 at the locations shown in Figure 2 and includes the following tasks:

- Task 1 - Soil Boring Sampling and Analysis Program; and
- Task 2 - Report Preparation.

2.1 Task 1 - Soil Boring Sampling and Analysis Program

To ensure that the soil borings would not disrupt any unmapped underground utilities, Amtrak has requested that the first three feet of all soil borings be advanced by hand. Further advancement of soil borings to depths greater than three feet bls will be accomplished using either a posthole digger, hand auger, and/or split-spoon sampler.

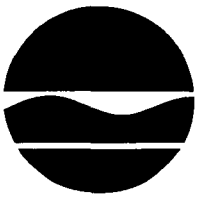
A total of 11 soil borings will be completed at the proposed locations shown in Figure 2. Soil samples from three consecutive 1-foot depth intervals beginning at the bottom of ballast will be collected and analyzed successively until the concentration of CPAHs detected is less than 10 ppm or the last depth interval is analyzed. If the concentration of CPAHs detected in the deepest interval (i.e., the 2 to 3 feet below bottom of ballast) is above 10 ppm, a plan to further delineate the area will be developed at that time.

By removing soil to a predetermined depth interval where analytical results indicate concentrations of CPAHs are less than 10 ppm, the need for post-excavation bottom confirmatory sampling is precluded. However, in accordance with a soil Interim Remedial Measure (IRM) plan, post-excavation sidewall samples will be collected and analyzed to determine of contamination above the cleanup level extends laterally beyond the confines of Lead Track No. 6. If analytical results indicate that such contamination exists laterally into adjacent track areas, remedial efforts will be initiated at a time when track maintenance or modifications permit.

A description of the sampling procedures to be followed is included in the sampling and analysis plan (SAP) included as Appendix A. All field work will be performed in accordance with health and safety procedures contained in the Yard-specific Health and Safety Plan.

ROSALIE RUSINKO

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
(718) 482-4995, Fax (718) 482-4954



John P. Cahill
Acting Commissioner

June 18, 1997

Joseph Duminuco
Roux Associates
1377 Motor Parkway
Islandia, New York 11788

Dear Mr. Duminuco:

Re: Amtrak Sunnyside Yard, Site Code 241006
Lead Track No. 6

The Department has reviewed the Work Plan for the Delineation of Lead track No. 6, and finds it acceptable with the following understanding:

- The number and location of proposed borings is acceptable, provided the extent of proposed track work covers the same length as the foot-print of the HSTF Building.

- Vertically, if the contamination is found above the established clean up numbers in the 3 to 4 ft. interval, further delineation will be done down to the water table or until the contamination is less than the clean up numbers, which ever occurs first.

- If the contamination is present in the water table, boring(s) will be continued into the saturated zone.

- Horizontally, all contaminated soils above the site specific clean up numbers will be excavated between the known hot spot and next clean location.

- Samples from new borings should be analyzed for all contaminants of concern, and not just for PAHs.

If you have any questions, please contact me immediately at 718-482-4909.

Sincerely,

Hari O. Agrawal, P.E.
Environmental Engineer

cc:
Rich Gardineer/ file
Sal Ervolina, DER, Albany 7010
Steve Bates, NYSDOH, Albany
Rosalie Rusinko, DEE, Tarrytown

2.0 SCOPE OF WORK

The scope of work will consist of the drilling and sampling of 11 soil borings (L6-1 through L6-11) along Lead Track No. 6 at the locations shown in Figure 2 and includes the following tasks:

- Task 1 - Soil Boring Sampling and Analysis Program; and
- Task 2 - Report Preparation.

2.1 Task 1 - Soil Boring Sampling and Analysis Program

To ensure that the soil borings would not disrupt any unmapped underground utilities, Amtrak has requested that the first three feet of all soil borings be advanced by hand. Further advancement of soil borings to depths greater than three feet bls will be accomplished using either a posthole digger, hand auger, and/or split-spoon sampler.

A total of 11 soil borings will be completed at the proposed locations shown in Figure 2. Soil samples from three consecutive 1-foot depth intervals beginning at the bottom of ballast will be collected and analyzed successively until the concentration of CPAHs detected is less than 10 ppm or the last depth interval is analyzed. If the concentration of CPAHs detected in the deepest interval (i.e., the 2 to 3 feet below bottom of ballast) is above 10 ppm, a plan to further delineate the area will be developed at that time.

3 feet below soil level RATIONAL ?

By removing soil to a predetermined depth interval where analytical results indicate concentrations of CPAHs are less than 10 ppm, the need for post-excavation bottom confirmatory sampling is precluded. However, in accordance with a soil Interim Remedial Measure (IRM) plan, post-excavation sidewall samples will be collected and analyzed to determine of contamination above the cleanup level extends laterally beyond the confines of Lead Track No. 6. If analytical results indicate that such contamination exists laterally into adjacent track areas, remedial efforts will be initiated at a time when track maintenance or modifications permit.

NO

A description of the sampling procedures to be followed is included in the sampling and analysis plan (SAP) included as Appendix A. All field work will be performed in accordance with health and safety procedures contained in the Yard-specific Health and Safety Plan.

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES INC

ROUX

1377 MOTOR PARKWAY
ISLANDIA, NEW YORK 11788
TEL 516 232-2600 FAX 516 232-9898

FACSIMILE TRANSMITTAL SHEET

To: H. Agarwala

Fax No. (718) 482-6358

Phone No. _____

Project No. _____

Sent by: H Gregory

Date: 7/7/97 *Time:* 1115 am ~~pm~~

☐ *For your information*

☒ *For your action*

☐ *For your review and comment*

☐ *Please telephone upon receipt*

☐ *For your approval*

☐ *As you requested*

Message: Hari — Here are the preliminary analytical results from the Lead 6 sampling as we discussed

TOTAL NUMBER OF PAGES SENT INCLUDING TRANSMITTAL SHEET 14

IF ALL PAGES ARE NOT RECEIVED, PLEASE CALL US AS SOON AS POSSIBLE

PHONE: (516) 232-2600
FAX: (516) 232-9898

Soil

TABLE SV-1.0
7097-1560A
ROUX ASSOCIATES
MISCELLANEOUS BASE-NEUTRALS

All values are ug/Kg dry weight basis.

Client Sample I.D. Lab Sample I.D. Method Blank I.D. Quant. Factor	Method Blank SBLKYI SBLKYI 1.00	L6-10(0-1) 971560A-01 SBLKYI 1.03	L6-5(0-1) 971560A-04 SBLKYI 1.05	Quant. Limits with no Dilution
Naphthalene	U	U	U	330
2-Methylnaphthalene	U	U	U	330
Acenaphthylene	U	U	U	330
Acenaphthene	U	U	U	330
Fluorene	U	U	U	330
Phenanthrene	U	U	120J	330
Anthracene	U	U	15J	330
Fluoranthene	U	37J	120J	330
Pyrene	U	37J	180J	330
Benzo(a)anthracene	U	25J	80J	330
Chrysene	U	36J	110J	330
Benzo(b)fluoranthene	U	25J	87J	330
Benzo(k)fluoranthene	U	43J	68J	330
Benzo(a)pyrene	U	U	56J	330
Indeno(1,2,3-cd)pyrene	U	U	50J	330
Dibenz(a,h)anthracene	U	U	U	330
Benzo(g,h,i)perylene	U	U	44J	330
Date Received		07/01/97	07/01/97	
Date Extracted	07/01/97	07/01/97	07/01/97	
Date Analyzed	07/02/97	07/02/97	07/02/97	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

Preliminary Release

Soil

TABLE SV-1.1
7097-1560A
ROUX ASSOCIATES
MISCELLANEOUS BASE-NEUTRALS

All values are ug/Kg dry weight basis.

Client Sample I.D.	L6-5(0-1)DUP	L6-11(0-1)	L6-7(0-1)	Quant. Limits with no Dilution
Lab Sample I.D.	971560A-05	971560A-08	971560A-12	
Method Blank I.D.	SBLKYI	SBLKYI	SBLKYI	
Quant. Factor	1.05	1.04	1.06	
Naphthalene	U	U	U	330
2-Methylnaphthalene	U	U	U	330
Acenaphthylene	U	U	U	330
Acenaphthene	U	U	U	330
Fluorene	U	U	U	330
Phenanthrene	U	U	64J	330
Anthracene	U	U	17J	330
Fluoranthene	48J	51J	190J	330
Pyrene	44J	48J	100J	330
Benzo(a)anthracene	28J	28J	58J	330
Chrysene	58J	52J	92J	330
Benzo(b)fluoranthene	72J	66J	120J	330
Benzo(k)fluoranthene	56J	59J	63J	330
Benzo(a)pyrene	36J	61J	45J	330
Indeno(1,2,3-cd)pyrene	47J	41J	79J	330
Dibenz(a,h)anthracene	U	U	U	330
Benzo(g,h,i)perylene	44J	U	62J	330
Date Received	07/01/97	07/01/97	07/01/97	
Date Extracted	07/01/97	07/01/97	07/01/97	
Date Analyzed	07/02/97	07/02/97	07/03/97	

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Soil

TABLE SV-1.2
7097-1560A
ROUX ASSOCIATES
MISCELLANEOUS BASE-NEUTRALS

All values are ug/Kg dry weight basis.

Client Sample I.D.	L6-6(0-1)	L6-1(0-1)	L6-2(0-1)	Quant. Limits with no Dilution
Lab Sample I.D.	971560A-15	971560A-17	971560A-20	
Method Blank I.D.	SBLKYI	SBLKYI	SBLKYI	
Quant. Factor	1.04	1.09	1.04	
Naphthalene	U	U	U	330
2-Methylnaphthalene	U	U	U	330
Acenaphthylene	U	28J	U	330
Acenaphthene	U	U	U	330
Fluorene	U	U	U	330
Phenanthrene	U	140J	35J	330
Anthracene	U	36J	U	330
Fluoranthene	U	300J	97J	330
Pyrene	U	280J	97J	330
Benzo(a)anthracene	U	180J	35J	330
Chrysene	U	260J	66J	330
Benzo(b)fluoranthene	U	230J	50J	330
Benzo(k)fluoranthene	U	280J	65J	330
Benzo(a)pyrene	U	160J	54J	330
Indeno(1,2,3-cd)pyrene	U	240J	45J	330
Dibenzo(a,h)anthracene	U	U	U	330
Benzo(g,h,i)perylene	U	140J	41J	330
Date Received	07/01/97	07/01/97	07/01/97	
Date Extracted	07/01/97	07/01/97	07/01/97	
Date Analyzed	07/02/97	07/03/97	07/03/97	

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Soil

TABLE SV-1.0
7097-1560B
ROUX ASSOCIATES
MISCELLANEOUS BASE-NEUTRALS

All values are ug/Kg dry weight basis.

Client Sample I.D.	Method Blank	L6-8(0-1)	L6-3(0-1)	Quant. Limits with no Dilution
Lab Sample I.D.	SBLKYI	971560B-03	971560B-06	
Method Blank I.D.	SBLKYI	SBLKYI	SBLKYI	
Quant. Factor	1.00	1.09	1.11	
Naphthalene	U	U	18J	330
2-Methylnaphthalene	U	U	U	330
Acenaphthylene	U	U	U	330
Acenaphthene	U	U	54J	330
Fluorene	U	U	35J	330
Phenanthrene	U	56J	520	330
Anthracene	U	14J	71J	330
Fluoranthene	U	98J	480	330
Pyrene	U	110J	500	330
Benzo(a)anthracene	U	70J	230J	330
Chrysene	U	100J	190J	330
Benzo(b)fluoranthene	U	110J	140J	330
Benzo(k)fluoranthene	U	97J	180J	330
Benzo(a)pyrene	U	69J	170J	330
Indeno(1,2,3-cd)pyrene	U	100J	140J	330
Dibenz(a,h)anthracene	U	U	U	330
Benzo(g,h,i)perylene	U	71J	130J	330
Date Received		07/01/97	07/01/97	
Date Extracted	07/01/97	07/01/97	07/01/97	
Date Analyzed	07/02/97	07/03/97	07/03/97	

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Preliminary Release

Soil

TABLE SV-1.1
7097-1560B
ROUX ASSOCIATES
MISCELLANEOUS BASE-NEUTRALS

All values are ug/Kg dry weight basis.

Client Sample I.D.	L6-9(0-1)	L6-4(0-1)		Quant. Limits with no Dilution
Lab Sample I.D.	971560B-09	971560B-12		
Method Blank I.D.	SBLKYI	SBLKYI		
Quant. Factor	1.04	1.08		
Naphthalene	U	26J		330
2-Methylnaphthalene	U	27J		330
Acenaphthylene	U	27J		330
Acenaphthene	U	U		330
Fluorene	U	U		330
Phenanthrene	U	270J		330
Anthracene	U	83J		330
Fluoranthene	U	340J		330
Pyrene	U	320J		330
Benzo(a)anthracene	U	290J		330
Chrysene	U	320J		330
Benzo(b)fluoranthene	U	320J		330
Benzo(k)fluoranthene	U	290J		330
Benzo(a)pyrene	U	230J		330
Indeno(1,2,3-cd)pyrene	U	45J		330
Dibenzo(a,h)anthracene	U	U		330
Benzo(g,h,i)perylene	U	190J		330
Date Received	07/01/97	07/01/97		
Date Extracted	07/01/97	07/01/97		
Date Analyzed	07/02/97	07/03/97		

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Preliminary Release

Soil

TABLE AS-1.0
7097-1560A
ROUX ASSOCIATES
MISCELLANEOUS ATOMIC SPECTROSCOPY

All values are mg/Kg dry weight basis.

Client Sample I.D.	L6-10(0-1)	L6-5(0-1)	L6-5(0-1)DUP	L6-11(0-1)
Lab Sample I.D.	971560A-01	971560A-04	971560A-05	971560A-08
Lead	6.6	9.8	12.3	10.2

See Appendix for qualifier definitions

PRELIMINARY
RELEASE

Soil

TABLE AS-1.1
7097-1560A
ROUX ASSOCIATES
MISCELLANEOUS ATOMIC SPECTROSCOPY

All values are mg/Kg dry weight basis.

Client Sample I.D.	L6-7(0-1)	L6-6(0-1)	L6-1(0-1)	L6-2(0-1)
Lab Sample I.D.	971560A-12	971560A-15	971560A-17	971560A-20
Lead	22.4	4.5	15.6	12.5

See Appendix for qualifier definitions

Soil

TABLE AS-1.0
7097-1560B
ROUX ASSOCIATES
MISCELLANEOUS ATOMIC SPECTROSCOPY

All values are mg/Kg dry weight basis.

Client Sample I.D.	L6-8(0-1)	L6-3(0-1)	L6-9(0-1)	L6-4(0-1)
Lab Sample I.D.	971560B-03	971560B-06	971560B-09	971560B-12
Lead	75.2	25.1	7.9	95.6

See Appendix for qualifier definitions

PRELIMINARY RELEASE

Soil

TABLE GC-1.0
7097-1560A
ROUX ASSOCIATES
POLYCHLORINATED BIPHENYLS (PCB's)

All values are ug/Kg dry weight basis.

Client Sample I.D. Lab Sample I.D. Method Blank I.D. Quant. Factor	Method Blank 070297-B02 PBLK09 1.00	L6-10(0-1) 971560A-01 PBLK09 1.03	L6-5(0-1) 971560A-04 PBLK09 1.05	Quant. Limits with no Dilution
Aroclor-1016	U	U	U	33
Aroclor-1221	U	U	U	67
Aroclor-1232	U	U	U	33
Aroclor-1242	U	U	U	33
Aroclor-1248	U	U	U	33
Aroclor-1254	U	6.7JP	7.1JP	33
Aroclor-1260	U	18.JP	33.J	33
Date Received		07/01/97	07/01/97	
Date Extracted	07/02/97	07/02/97	07/02/97	
Date Analyzed	07/03/97	07/03/97	07/03/97	

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PRELIMINARY RELEASE

Soil

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7097-1560B
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Client Sample I.D.	L6-9(0-1)	L6-4(0-1)		Quant. Limits with no Dilution
Lab Sample I.D.	971560B-09	971560B-12		
Method Blank I.D.	PBLK09	PBLK09		
Quant. Factor	1.04	1.08		
Aroclor-1016	U	U		33
Aroclor-1221	U	U		33
Aroclor-1232	U	U		33
Aroclor-1242	U	U		33
Aroclor-1248	U	U		33
Aroclor-1254	U	31JP		33
Aroclor-1260	8.2JP	380		33
Date Received	07/01/97	07/01/97		
Date Extracted	07/02/97	07/02/97		
Date Analyzed	07/04/97	07/04/97		

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Soil

TABLE GC-1.0
7097-1560B
ROUX ASSOCIATES
POLYCHLORINATED BIPHENYLS (PCB's)

All values are ug/Kg dry weight basis.

Client Sample I.D. Lab Sample I.D. Method Blank I.D. Quant. Factor	Method Blank 070297-B02 PBLK09 1.00	L6-8(0-1) 971560B-03 PBLK09 1.09	L6-3(0-1) 971560B-06 PBLK09 1.11	Quant. Limits with no Dilution
Aroclor-1016	U	U	U	33
Aroclor-1221	U	U	U	67
Aroclor-1232	U	U	U	33
Aroclor-1242	U	U	U	33
Aroclor-1248	U	U	U	33
Aroclor-1254	U	15.JP	14.JP	33
Aroclor-1260	U	170	19.J	33
Date Received Date Extracted Date Analyzed	 07/02/97 07/03/97	07/01/97 07/02/97 07/04/97	07/01/97 07/02/97 07/04/97	

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Note: Compound detection limit = quantitation limit x quantitation factor
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PRELIMINARY
RELEASE

Soil

TABLE GC-1.2
7097-1560A
ROUX ASSOCIATES
POLYCHLORINATED BIPHENYLS (PCB's)

All values are ug/Kg dry weight basis.

Client Sample I.D.	L6-6(0-1)	L6-1(0-1)	L6-2(0-1)	Quant. Limits with no Dilution
Lab Sample I.D.	971560A-15	971560A-17	971560A-20	
Method Blank I.D.	PBLK09	PBLK09	PBLK09	
Quant. Factor	1.04	1.09	1.04	
Aroclor-1016	U	U	U	33
Aroclor-1221	U	U	U	33
Aroclor-1232	U	U	U	33
Aroclor-1242	U	U	U	33
Aroclor-1248	U	U	U	33
Aroclor-1254	21 JP	35 P	U	33
Aroclor-1260	43.	150	U	33
Date Received	07/01/97	07/01/97	07/01/97	
Date Extracted	07/02/97	07/02/97	07/02/97	
Date Analyzed	07/04/97	07/04/97	07/04/97	

See Appendix for qualifier definitions
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PRELIMINARY
DATA

Soil

TABLE GC-1.1
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ROUX ASSOCIATES
POLYCHLORINATED BIPHENYLS (PCB's)

All values are ug/Kg dry weight basis.

Client Sample I.D.	L6-5(0-1)DUP	L6-11(0-1)	L6-7(0-1)	Quant. Limits with no Dilution
Lab Sample I.D.	971560A-05	971560A-08	971560A-12	
Method Blank I.D.	PBLK09	PBLK09	PBLK09	
Quant. Factor	1.05	1.04	1.06	
Aroclor-1016	U	U	U	33
Aroclor-1221	U	U	U	33
Aroclor-1232	U	U	U	33
Aroclor-1242	U	U	U	33
Aroclor-1248	U	U	U	33
Aroclor-1254	6.2JP	27.J	34.JP	33
Aroclor-1260	31.J	97.	75.	33
Date Received	07/01/97	07/01/97	07/01/97	
Date Extracted	07/02/97	07/02/97	07/02/97	
Date Analyzed	07/03/97	07/04/97	07/04/97	

See Appendix for qualifier definitions
Note: Compound detection limit = quantitation limit x quantitation factor
Quant. Factor = a numerical value which takes into account any variation in sample weight/volume, % moisture and sample dilution.

PRELIMINARY RELEASE

2.2 Report Preparation

Upon completion of the field investigation, Roux Associates will submit a report which presents the data and includes our findings and recommendations regarding the extent of CPAHs. This report will be used to support the development of the soil IRM Plan for Lead Track No. 6.

3.0 SCHEDULE

Assuming the NYSDEC approval of this work plan by June 9, 1997 and a timely review of the investigation report, the estimated schedule for completion of the work is as follows:

- completion of field work by June 16, 1997;
- investigation report submittal by June 30, 1997; and
- soil IRM Plan submittal by July 14, 1997.

TABLES

Table 1. Analytical Results for Polycyclic Aromatic Hydrocarbons in Soil Samples Collected for Track Modifications, Sunnyside Yard, Queens, New York.

Parameter (Concentrations in µg/kg)	NYSDEC Recommended Cleanup Level	Sample Designation: L5-1 Sample Depth: 0-2 Sample Date: 4/7/97	L6-1 0-2 4/7/97	L6-2 0-2 4/7/97	L6-3 0-2 4/7/97	L6-4 0-2 4/7/97	L6-5 0-2 4/7/97	TT-1 0-2 4/7/97
2-Methylnaphthalene		380 U	750 U	380 U	7,600 U	770 U	370 U	360 U
Acenaphthene		380 U	750 U	380 U	7,600 U	770 U	370 U	360 U
Acenaphthylene		380 U	750 U	380 U	7,600 U	120 J	410	360 U
Anthracene		180 J	690 J	380 U	7,600 U	770	590	360 U
Benzo(a)anthracene	CPAH	750	2,000	450	14,000	1,400	1,200	230 J
Benzo(a)pyrene	CPAH	680	1,900	460	8,500	1,400	1,100	190 J
Benzo(b)fluoranthene	CPAH	1,800	4,000	850	6,000 J	3,800	2,700	750
Benzo(g,h,i)perylene	CPAH	230 J	620 J	200 J	3,400 J	510 J	430	360 U
Benzo(k)fluoranthene	CPAH	1,100	2,900	450	7,600 U	3,200	1,600	18 J
Chrysene	CPAH	1,500	3,900	840	21,000	3,200	2,400	400
Dibenzo(a,h)anthracene	CPAH	68 J	230 J	38 J	410 J	770 U	180 J	360 U
Fluoranthene		1,000	3,600	430	13,000	3,000	2,100	160 J
Fluorene		380 U	750 U	380 U	7,600 U	770 U	370 U	360 U
Indeno(1,2,3-cd)pyrene	CPAH	210 J	700 J	100 J	910 J	350 J	550	56 J
Naphthalene		380 U	750 U	380 U	7,600 U	770 U	370 U	360 U
Phenanthrene		290 J	1,800	270 J	22,000	800	560	38 J
Pyrene		890	2,300	600	18,000	2,500	1,400	380
Total CPAH	10,000	6,338	16,250	3,388	54,220	14,630	10,160	1,644

µg/kg - Micrograms per kilogram (parts per billion)
U - Indicates that the compound was analyzed for but not detected
J - Estimated value
CPAH - Carcinogenic Polycyclic Aromatic Hydrocarbon

Table 2. Analytical Results for Lead in Soil Samples Collected for Track Modifications, Sunnyside Yard, Queens, New York.

Parameter (Concentrations in mg/kg)	NYSDEC Recommended Yard-Specific Cleanup Level	Sample Designation: L5-1 Sample Depth: 0-2 Sample Date: 4/7/97	L6-1 0-2 4/7/97	L6-2 0-2 4/7/97	L6-3 0-2 4/7/97	L6-4 0-2 4/7/97	L6-5 0-2 4/7/97	TT-1 0-2 4/7/97
Lead	1000	189	745	198	159	273	151	61.3

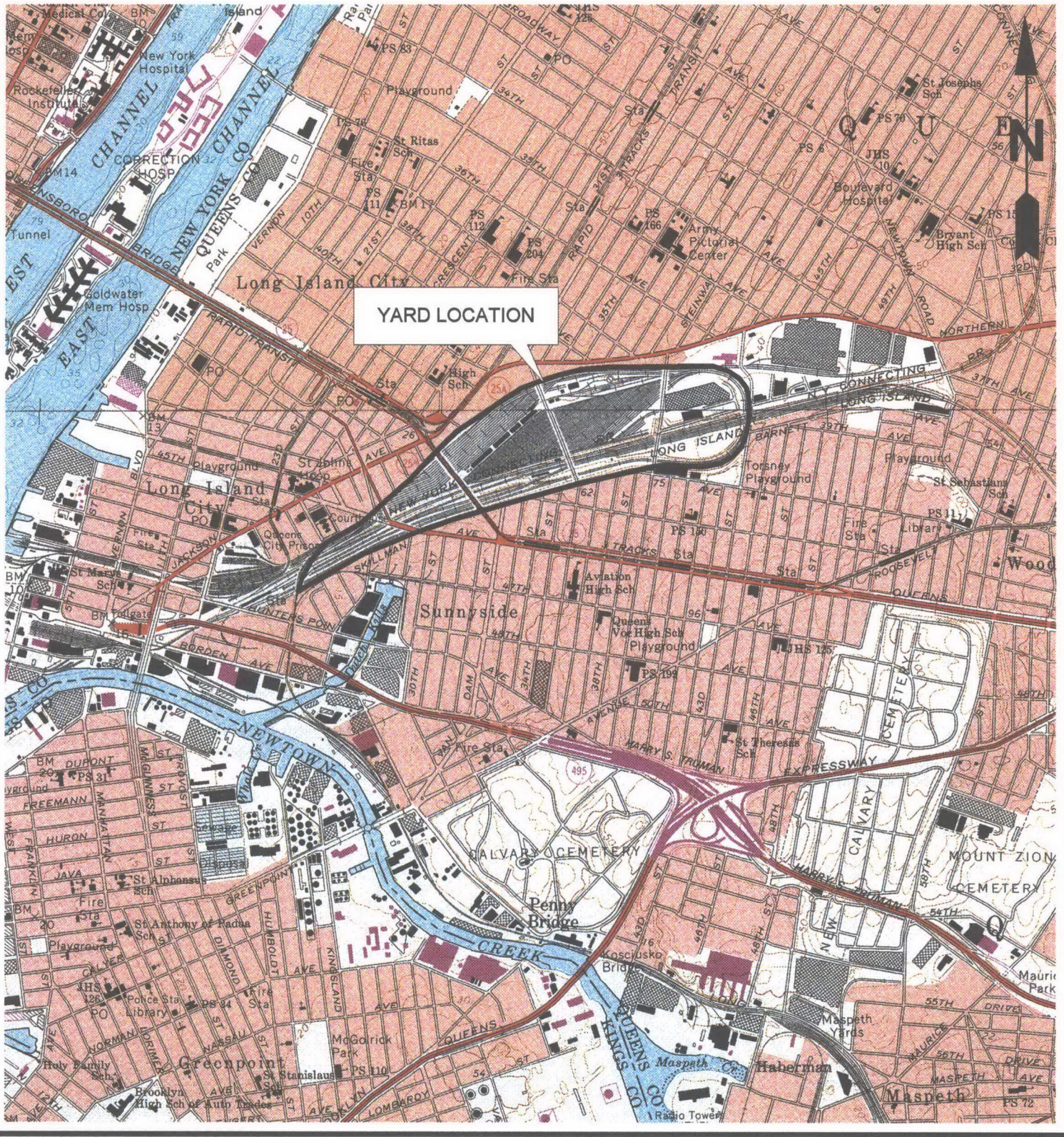
mg/kg - Milligrams per kilogram (parts per million)

Table 3. Analytical Results for Pesticides in Soil Samples Collected for Track Modifications, Sunnyside Yard, Queens, New York.

Parameter (Concentrations in µg/kg)	NYSDEC Recommended Yard-Specific Cleanup Level	Sample Designation: L5-1 Top of Interval: 0-2 Sample Date: 4/7/97	L6-1 0-2 4/7/97	L6-2 0-2 4/7/97	L6-3 0-2 4/7/97	L6-4 0-2 4/7/97	L6-5 0-2 4/7/97	TT-1 0-2 4/7/97
Aroclor-1016	--	750 U	1900 U	75 U	740 U	760 U	370 U	180 U
Aroclor-1221	--	1500 U	3900 U	150 U	1500 U	1500 U	740 U	360 U
Aroclor-1232	--	750 U	1900 U	75 U	740 U	760 U	370 U	180 U
Aroclor-1242	--	750 U	1900 U	75 U	740 U	760 U	370 U	180 U
Aroclor-1248	--	750 U	1900 U	75 U	740 U	760 U	370 U	180 U
Aroclor-1254	--	990	2600	67 J	690 J	1000	580	180 U
Aroclor-1260	--	2300	2800	290	1400	3300	1600	810
Total Aroclors	25,000	3290	5400	357	2090	4300	2180	810

µg/kg - Micrograms per kilogram (parts per billion)
U - Indicates that the compound was analyzed for but not detected
J - Estimated value

FIGURES



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

Title:

YARD LOCATION MAP

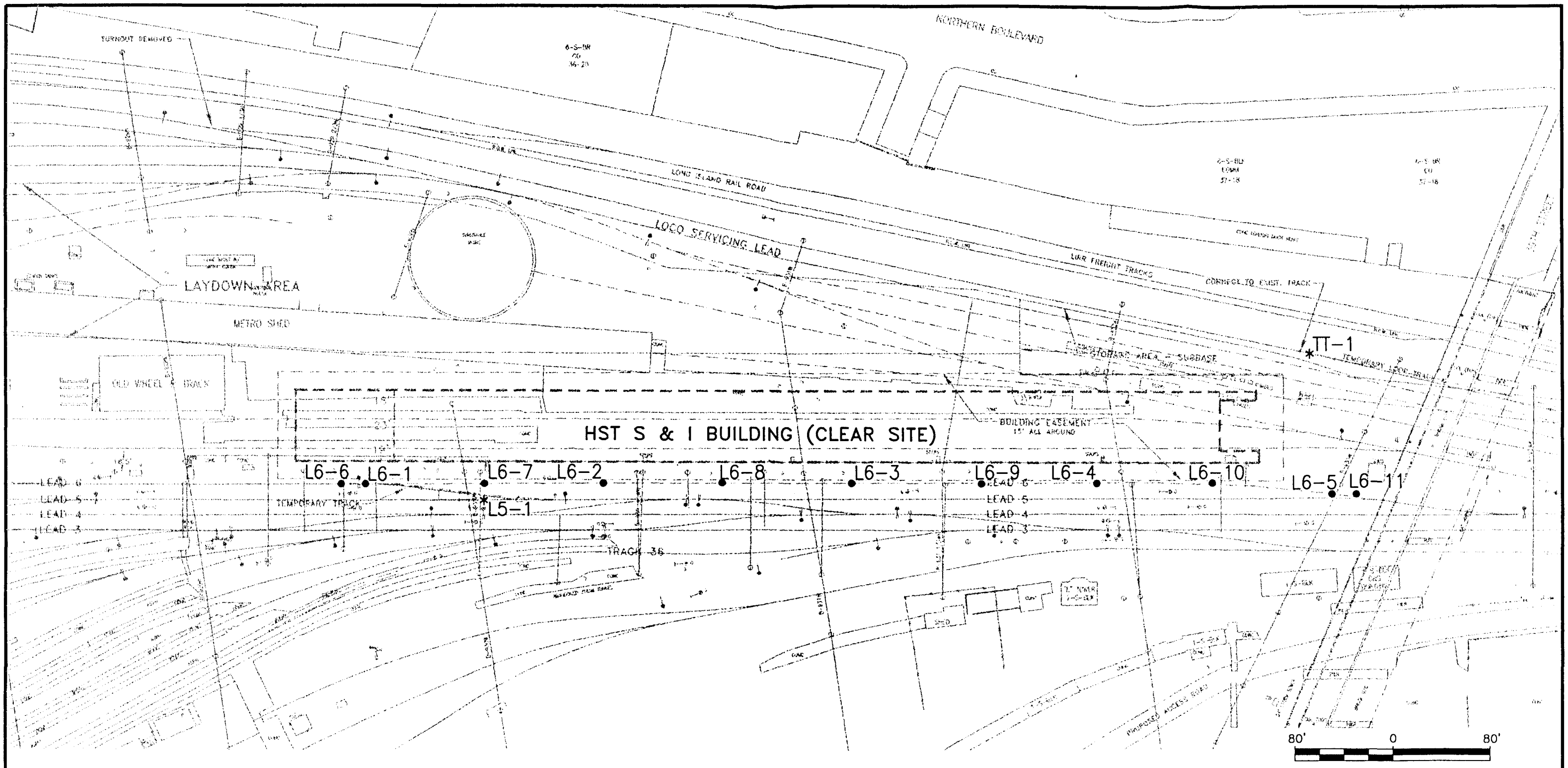
SUNNYSIDE YARD
39-29 HONEYWELL STREET
QUEENS, NEW YORK

Prepared For:

AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by:	J.D.	Date:	5/97	FIGURE
Prepared by:	R.R.	Scale:	1"=2,000'	1
Project Mgr:	J.D.	Status:	Final	
File No:	52129015	Project:	05552Y04	



LEGEND

L6-1 ● PROPOSED SOIL BORING LOCATION AND DESIGNATION

L5-1 * EXISTING SOIL BORING LOCATION AND DESIGNATION

DELINEATION SAMPLE LOCATION MAP

SUNNYSIDE YARD
QUEENS, NY

Prepared For:
AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: H.G.	Date: 5/97	FIGURE
Prepared by: R.K.	Scale: As Shown	2
Project Mgr: H.G.	Status: FINAL	
File No: 52129014	Project: 05552Y04	

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APPENDICES

APPENDIX A

APPENDIX A

Sampling and Analysis Plan

APPENDIX A

Sampling and Analysis Plan

1.0 OBJECTIVES

This sampling and analysis plan (SAP) describes the samples to be collected, the analysis proposed and the procedures to be followed during the additional delineation investigation activities for Lead Track No. 6 at the Sunnyside Yard, Queens, New York (Yard). Data generated by this SAP can then be used by AMTRAK to support the development of an Interim Remedial Measures plan for this area.

2.0 SAMPLING LOCATIONS

All proposed soil boring and sampling locations are identified in Figure 2 of the Work Plan.

3.0 SAMPLE CATALOGING

Soil samples collected from borings will be identified by the prefix L6 (Lead Track No. 6). The boring location number will follow the prefix. When more than one soil sample is collected from a single boring, the recorded sampling depth interval below ballast will distinguish each sample. An example is "L6-1 (0 to 1 foot)", which identifies a sample collected from soil boring number one at a depth interval of 0 to 1 foot below ballast.

This numbering system will be used by the contracted laboratory to identify samples collected for laboratory analysis during the sampling program. All chain-of-custody documentation will also adhere to this numbering system.

All samples collected will be prelabeled with the following information:

- borehole number and sampled interval;
- time and date of sample collection;
- type of analysis to be performed; and
- affiliation of person(s) collecting the sample.

All sampling information will be recorded into a project field book.

4.0 PROTOCOL FOR SOIL SAMPLING

This protocol outlines procedures and equipment for soil sampling at the Yard. Soil samples will be collected with hand tools (i.e., post hole digger, hand auger, hand-driven split-spoon sampler, etc.).

4.1 Sampling Tool Decontamination Procedures

Prior to commencing soil sampling at each location, all tools used for sample collection will be decontaminated in the following manner:

- remove all loose material and soil from tools;
- wash thoroughly with detergent and tap water, utilizing a scrub brush;
- rinse with tap water;
- rinse with distilled or deionized water;
- rinse with pesticide-grade methanol; and
- rinse with distilled or deionized water.

4.2 Soil Sampling Procedures

Soil samples will be collected in the following manner:

- samples will be collected using a standard post hole digger, hand auger, or split-spoon sampler;
- the excavated soil from each sampling depth interval will be placed on clean plastic sheeting and a representative composite of recovered material will be immediately placed in a proper sample container, sealed and labeled;
- any non-representative material (i.e., cinders, pieces of railroad ties, asphalt), when observed, will not be placed in the sample container;
- at all boring locations, soil samples will be collected from consecutive 1-foot intervals below ballast and each successive sample will be analyzed until the concentration of total carcinogenic polycyclic aromatic hydrocarbons detected is less than 10 parts per million (ppm) or the last depth interval is analyzed;

- equipment used for filling sample containers will be cleaned prior to each subsequent use as outlined in Section 4.1; and
- boreholes will be backfilled with cuttings.

If the concentration of CPAHs detected at any sample location is above the 10 ppm action level in the last depth interval analyzed (i.e., the 2 to 3 feet below bottom of ballast interval), a plan to further delineate the area will be developed at that time and submitted to the NYSDEC for approval.

4.3 Sample Containers

It will be the responsibility of the contracted laboratory to provide clean sampling containers for the requested analyses. The sampling containers will be filled according to laboratory specifications.

4.4 Sample Handling and Analysis

All soil samples intended for analysis will be placed on ice and protected from light immediately after collection and until delivered to the laboratory.

Samples will be analyzed for PAHs by I.E.A., Inc. of Monroe, Connecticut following NYSDEC Analytical Services Protocols. Data validation of the analyzed results may be performed and, therefore, a category and reporting package will be supplied.

4.5 Record Keeping

All field data will be recorded in a bound field notebook. These data will include: weather conditions, location of boring, depth interval of sample, the sequence in which the borings were completed and lithology. A chain of custody will be implemented during sample collection and all soil samples for laboratory analysis will be submitted to I.E.A. Laboratory, Monroe, Connecticut with chain of custody documentation.