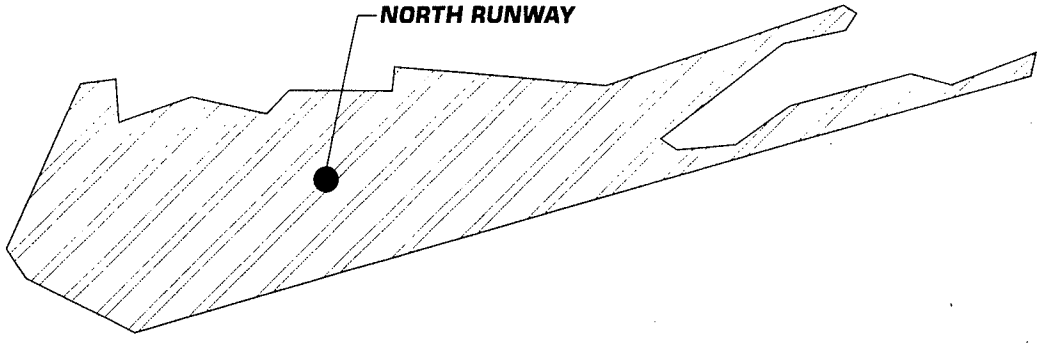
NORTHROP GRUMMAN



PHASE II SITE ASSESSMENT
NORTH RUNWAY - PARCEL L1

JANUARY 1997

D&B
ENVIRONMENTAL SERVICES INC.

D&E
ENVIRONMENTAL SERVICES INC.

January 20, 1997

John Ohlmann, P.E.
Consultant for
Northrop Grumman Corporation
Mail Stop: D08-001
Bethpage, NY 11714-3582

Re: Phase II Site Assessment
North Runway-Parcel L1
Bethpage, NY
D&BES No. 1383-110

Dear Mr. Ohlmann:

Enclosed please find six copies of the document entitled:

"Phase II Site Assessment
North Runway-Parcel L1
Bethpage, New York"

If you have any questions and/or comments regarding this matter, please do not hesitate to contact me at (516) 496-7712.

Very truly yours,

Richard M. Walka

Richard M. Walka
Vice President

RMW/ESK/mb
cc/encl.: A. Postyn (NGC)
♦1383-110\RMW97-02.LTR

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PHASE II SITE ASSESSMENT

NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
BETHPAGE, NEW YORK

PREPARED FOR

D&B ENVIRONMENTAL SERVICES, INC.
WOODBURY, NEW YORK

PREPARED BY

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
WOODBURY, NEW YORK

JANUARY 1997

PHASE II SITE ASSESSMENT
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
BETHPAGE, NEW YORK

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

List of Appendices

List of Figures

List of Tables

Section 1

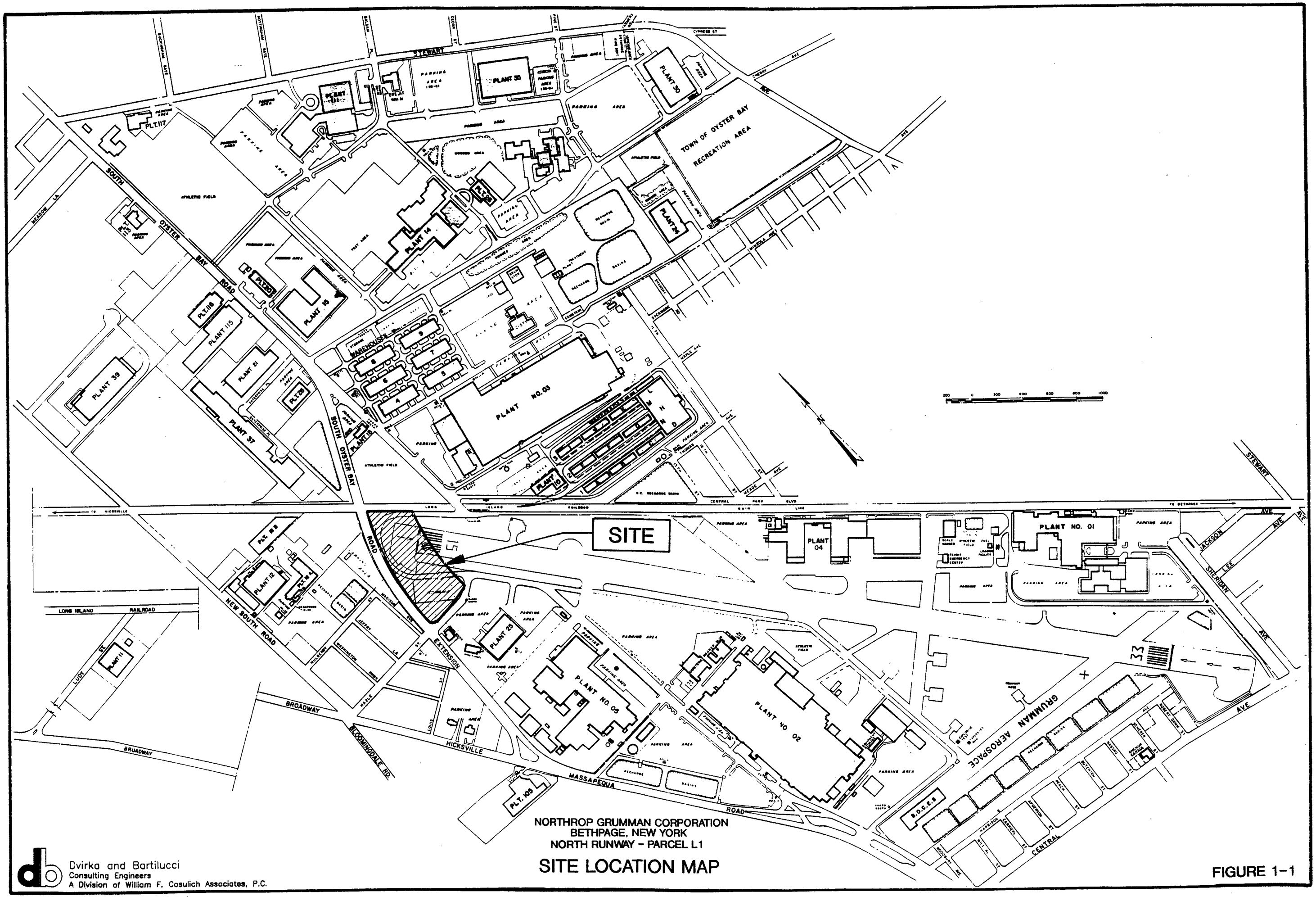
1.0 INTRODUCTION

This report presents the findings of a Phase II Site Assessment undertaken at the Northrop Grumman Corporation (NGC) property known as "North Runway - Parcel L1". The site is located to the east of the South Oyster Bay Road Extension, immediately south of the Long Island Railroad (LIRR) tracks in Bethpage, New York. A site location map is presented on Figure 1-1.

D&B Environmental Services, Inc. (D&BES) was retained by NGC to undertake a Phase II Site Assessment at the North Runway - Parcel L1 site in order to investigate the presence of any soil contamination and to delineate the extent of soil contamination, if present, for the purpose of remediation. Dvirka and Bartilucci Consulting Engineers of Woodbury, New York provided engineering services in connection with the field investigations, oversight of subcontractors and preparation of this report.

The objective of this report is to document and present the results of a Phase II Site Assessment which was comprised of a five-phase field program that included the investigation, confirmation and delineation of surficial and subsurface soil contamination, as well as a dry well remediation and endpoint soil/sediment sampling program. The presentation of the analytical results of soil and sediment samples, along with a comparison of these results to appropriate soil cleanup objectives and conclusions and recommendations are also provided.

A description of the site and other background information is presented in Section 2 of this report. The technical scope of work for each of the Phase II field programs and the dry well remediation and endpoint soil/sediment sampling program is described in Section 3. The procedures followed throughout the course of each Phase II field program, as well as the dry well remediation and endpoint soil/sediment sampling program are described Section 4. Section 5 presents the analytical results of the soil and sediment samples and the findings of the Phase II field programs and the dry well remediation and endpoint soil/sediment sampling program.



NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
NORTH RUNWAY – PARCEL L1

SITE LOCATION MAP

FIGURE 1-1

Dvirka and Bartilucci
Consulting Engineers
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Based on the findings of the investigation and remediation program, conclusions and recommendations regarding additional investigation activities and/or remedial actions are provided in Section 6.

Section 2

2.0 SITE DESCRIPTION/BACKGROUND

Site Description

A site plan of the North Runway - Parcel L1 site is presented on Figure 2-1. As shown on Figure 2-1, the site is located along the east side of the South Oyster Bay Road Extension, adjacent to the entrance to the NGC Bethpage Facility at Hazel Street, and immediately south of the Long Island Railroad (LIRR) tracks. The site is located within an area zoned Industrial H. Industrial and commercial properties are located to the north, east, south and west.

The North Runway - Parcel L1 property encompasses approximately 7.5 acres and, other than the presence of the former runway and associated support roadways and tarmac areas, is currently undeveloped. Historically, the site was utilized as a runway for aircraft designed, developed, manufactured and tested by NGC. The site was utilized as the northern end of a runway between approximately 1955 and 1990, at which time the runway was "closed." All aircraft maintenance and deicing procedures took place off-site further south in the vicinity of NGC Plant 4. The end of the runway included aircraft landing guidance and lighting systems, as well as thrust deflectors which were used to provide controlled deflection of jet exhaust. In addition to the site being used as a runway until its closure, the southwestern portion of the property was utilized for vehicle parking.

The North Runway - Parcel L1 site is currently inactive and the majority of the runway fixtures (i.e., thrust deflectors) have been removed. In addition, recently, the concrete portion of the runway was excavated and removed by NGC.

The North Runway - Parcel L1 property is generally level with topography gradually sloping away from the runway to facilitate storm water drainage. Ground elevation (grade) is approximately 120 feet above mean sea level. The depth to groundwater beneath the site is approximately 55 feet below grade. The major portion of the site was covered by asphalt,

FIGURE 2-1

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
NORTH RUNWAY – PARCEL L1

SITE PLAN

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

concrete or other impervious building material with most of the remaining portions of the property being covered by grassy areas, as well as sparsely wooded areas in the northwest and southwest corners of the site.

NGC Quadrangle maps of the North Runway - Parcel L1 site indicate that underground water supply, sanitary sewer, electrical and telephone lines are located beneath the site, as well as several dry wells with interconnecting piping for storm water conveyance and management.

Background

A Phase I Site Assessment for the North Runway - Parcel L1 property was conducted by Dvirka and Bartilucci Consulting Engineers in April 1996. Based on the findings of the Phase I Site Assessment, there were no on-site indicators of contamination noted. However, the locations of the former thrust deflectors were identified as potential areas of environmental concern. According to the Phase I Site Assessment report, thrust deflectors were previously located on the north, west and east sides of the end of the runway to provide for controlled deflection of jet exhaust. It was concluded that constituents of concern contained in the exhaust from the incomplete combustion of jet fuel may have accumulated over a 35-year period in the soil adjacent to the thrust deflectors. Therefore, the areas around the former thrust deflectors were identified as potential areas of environmental concern, and it was recommended that soil samples be collected for laboratory analysis in the vicinity of the former thrust deflectors.

The Phase I Site Assessment report also identified the North Runway - Parcel L1 site as being located downgradient of known sources of groundwater contamination. Previous investigations have documented groundwater contamination in the vicinity of and beneath the site. However, based on the findings of the Phase I Site Assessment report, there did not appear to be any on-site sources of groundwater contamination. Previous and ongoing investigations have documented the sources of groundwater contamination to be from off-site, upgradient locations. Therefore, due to the lack of any apparent evidence of on-site sources of groundwater

contamination, the Phase I Site Assessment report did not recommend further investigation and/or monitoring of groundwater.

The Phase I Site Assessment report also supplemented a prior assessment undertaken in support of a Delisting Petition, which included the North Runway - Parcel L1 property, that was prepared by Dvirka and Bartilucci Consulting Engineers in February 1993, entitled "New York State Site Registry Delisting Petition - Site 6 (Runway)." In response to the Delisting Petition, on September 30, 1994, the New York State Department of Environmental Conservation (NYSDEC) removed the North Runway - Parcel L1 property from the Registry of Inactive Hazardous Waste Disposal Sites in New York.

Subsequent to the preparation of the Phase I Site Assessment report, NGC determined that herbicides and rodenticides were used for vegetation (weed) control and vector control, respectively, along the north end of the runway. In addition, NGC determined that the thrust deflectors were constructed of treated wood which was routinely painted with a wood preservative and other pigmented coatings. Although herbicides that were more recently used on a limited basis included USEPA registered, commercially available products, herbicides used in past applications were believed to have included arsenic compounds. Arsenic compounds have a variety of uses. Arsenates and arsenites are commonly used as herbicides, insecticides, larvicides and pesticides, and arsenic is present in rodenticides. In addition, the thrust deflectors were reportedly constructed of "CCA" treated wood which contains arsenic.

Section 3

3.0 SCOPE OF WORK

This section provides an overview of the recommended technical scope of work for each of the Phase II field programs and dry well remediation and soil/sediment sampling program.

3.1 Phase II Field Programs

The Phase II Site Assessment included a five-phase field program which provided for the investigation, confirmation and delineation of surface and subsurface soil contamination at the site. The following subsections provide a brief description of the recommended technical scope of work for each field program.

3.1.1 Phase 1 Field Program

Based on the findings and conclusions of the Phase I Site Assessment, a detailed scope of work was developed to investigate the thrust deflectors as potential areas of environmental concern and determine whether soil in the vicinity of the former thrust deflectors had been impacted by the byproducts of incomplete combustion of jet fuel. The following is an outline of the scope of work for initial surface soil sampling activities conducted as part of the Phase 1 Field Program:

Former Thrust Deflectors

- Collect surface soil samples at three locations on the east, west and north sides of the end of the runway at the locations of the former thrust deflectors. One surface soil sample was obtained at each location. Each sample was collected at a depth of 0 to 3 inches below the vegetative surface.

- Laboratory analysis of the three surface soil samples for priority pollutant metals by USEPA Methods 6010 and 7470, fuel-related constituents by New York State Department of Health (NYSDOH) Method 310-13 and semivolatile organic compounds (SVOCs) by USEPA Method 8270.

3.1.2 Phase 2 Field Program

Based on the results of the Phase 1 Field Program, elevated levels of SVOCs and priority pollutant metals were detected in surface soil samples in the vicinity of the former thrust deflectors. As a result, a detailed scope of work for a Phase 2 Field Program was developed to further investigate and delineate additional areas of environmental concern. The following is an outline of the scope of work for the Phase 2 Field Program:

- Collection of surface soil samples from 15 boring locations along the north, east and west sides of the end of the runway in the vicinity of the former thrust deflectors. The sample locations were spaced at 100-foot intervals. Eight borings were located approximately 5 feet outward from the edge of the runway at the locations of the former thrust deflectors, and seven borings were staggered approximately 15 feet outward from the edge of the runway. Two soil samples were obtained at each location (total of 30 soil samples). One soil sample was collected at a depth of 4 to 6 inches from grade (below the vegetation or soil surface), and the other sample was obtained at a depth of 10 to 12 inches from grade.

- Collection of one surface soil sample at two separate locations approximately 75 feet north and east of the runway at a depth of 4 to 6 inches from grade (total of 2 samples).

- Laboratory analysis of the 32 surface soil samples for: volatile organic compounds (VOCs) and SVOCs listed in Table 2 of Appendix B in NYSDEC's Spill Technology and Remediation Series (STARS) Memo #1, Petroleum-Contaminated Soil Guidance Policy (STARS Table 2), glycols (glycol scan) by NYSDEC Method 89-9; and priority pollutant metals (Methods 6010 and 7470).

3.1.3 Phase 3 Field Program

Based on the results of Phase 2 Field Program, a Phase 3 Field Program was conducted to confirm the presence of soil contamination and further delineate the horizontal and vertical extent of contamination in the areas of environmental concern. The following is an outline of the scope of work for the Phase 3 Field Program:

Confirmatory Soil Sampling

- Advance borings immediately adjacent to four previous sample locations (NR2, NR3, NR11 and NR14) utilizing a stainless steel hand auger, and collect soil samples at depths of 4 to 6 inches and 10 to 12 inches from grade (below the vegetation or soil surface) at each location.

- All soil samples will be split and analyzed by two independent laboratories.

- Analyze each soil sample (total of 8 samples) for arsenic utilizing USEPA Method 7060-A (graphite furnace) and mercury using USEPA Method 7471-A.

Soil Characterization for Disposal

- Collect fifteen surface soil samples immediately adjacent to fifteen previous sample locations (NR1 through NR15) using polyethylene scoops. Submit all fifteen samples to the analytical laboratory for compositing into a single representative sample.

- Analyze single representative composite soil sample for eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) by Toxicity Characteristic Leaching Procedure (TCLP), total polychlorinated biphenyls (PCBs) by USEPA Method 8080 and total petroleum hydrocarbons (TPHC) by USEPA Method 418.1.

Delineation Borings and Soil Sampling at 5 to 15 Feet from Edge of Runway

- Advance borings immediately adjacent to eight previous sample locations between 5 to 15 feet from the edge of the runway (NR1, NR2, NR3, NR5, NR6, NR9, NR11 and NR14) using a drilling rig and collect split spoon soil samples at depths of 12 to 24 inches, 24 to 36 inches, 36 to 48 inches and 48 to 60 inches below grade at each location.

- Analyze each soil sample (total of 32 samples) for priority pollutant metals (Methods 6010/7470) and the SVOCs listed in STARS Table 2.

Delineation Borings and Soil Sampling at 30 Feet from Edge of Runway

- Advance borings at eight locations 30 feet from the edge of the runway using a drilling rig, and collect split spoon soil samples at depths of 0 to 12 inches, 12 to 24 inches, 24 to 36 inches and 36 to 48 inches below grade at each location.

- Analyze each soil sample (total of 32 samples) for priority pollutant metals (Methods 6010/7470) and the SVOCs listed in STARS Table 2.

3.1.4 Phase 4 Field Program

Based on the results of the Phase 2 and 3 Field Programs, a Phase 4 Field Program was conducted to further delineate the vertical extent of areas of soil contamination at the site. In addition, the Phase 4 Field Program was undertaken to investigate areas of potential environmental concern along the perimeter of the property and beneath the runway tarmac and former taxiway, as well as to determine the horizontal and vertical extent of contamination, if present, in these areas.

The following is an outline of the scope of work for the Phase 4 Field Program:

Delineation Borings and Soil Sampling at Select Previous Sample Locations

- Advance borings immediately adjacent to seven previous sample locations (NRSB1, NRSB2, NR11, NR19, NR21, NR22 and NR23) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-1.

- At locations NRSB1, NR11, NR19, NR21, NR22 and NR23, analyze each soil sample (total of 23 samples) for arsenic, mercury and zinc. The sample analyses are summarized on Table 3-1.

- At location NRSB2, analyze select soil samples (total of 3 samples) for the VOCs and SVOCs listed in STARS Table 2 and for priority pollutant metals in accordance with Table 3-1.

TABLE 3-1

PHASE 4 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NRSB1	6'	3	3	NRSB1 (0-2') NRSB1 (2'-4') NRSB1 (4'-6')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NRSB2	6'	3	3	NRSB2 (0-2') NRSB2 (2'-4') NRSB2 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR11	12'	6	4	NR11 (4'-6') NR11 (6'-8') NR11 (8'-10') NR11 (10'-12')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR19	10'	5	3	NR19 (4'-6') NR19 (6'-8') NR19 (8'-10')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR21	10'	5	3	NR21 (4'-6') NR21 (6'-8') NR21 (8'-10')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR22	14'	7	5	NR22 (4'-6') NR22 (6'-8') NR22 (8'-10') NR22 (10'-12') NR22 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR23	14'	7	5	NR23 (4'-6') NR23 (6'-8') NR23 (8'-10') NR23 (10'-12') NR23 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR24	14'	7	7	NR24 (0-2') NR24 (2'-4') NR24 (4'-6') NR24 (6'-8') NR24 (8'-10') NR24 (10'-12') NR24 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 3-1 (continued)

PHASE 4 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR25	16'	8	4	NR25 (0-2') NR25 (4'-6') NR25 (8'-10') NR25 (14'-16')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR26	16'	8	8	NR26 (0-2') NR26 (2'-4') NR26 (4'-6') NR26 (6'-8') NR26 (8'-10') NR26 (10'-12') NR26 (12'-14') NR26 (14'-16')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 14'-16'. PP Metals only on samples from 2'-4', 6'-8', 10'-12' and 12'-14'.
NR27	14'	7	7	NR27 (0-2') NR27 (2'-4') NR27 (4'-6') NR27 (6'-8') NR27 (8'-10') NR27 (10'-12') NR27 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR28	14'	7	7	NR28 (0-2') NR28 (2'-4') NR28 (4'-6') NR28 (6'-8') NR28 (8'-10') NR28 (10'-12') NR28 (12'-14')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Method 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 12'-14'. PP Metals only on samples from 2'-4', 6'-8' and 10'-12'.
NR29	12'	6	3	NR29 (0-2') NR29 (4'-6') NR29 (10'-12')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 3-1 (continued)

PHASE 4 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR30	6'	3	3	NR30 (0-2') NR30 (2'-4') NR30 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR31	6'	3	3	NR31 (0-2') NR31 (2'-4') NR31 (4'-6')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR32	10'	5	5	NR32 (0-2') NR32 (2'-4') NR32 (4'-6') NR32 (6'-8') NR32 (8'-10')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2', 4'-6' and 8'-10'. PP Metals only on samples from 2'-4' and 6'-8'.
NR33	6'	3	3	NR33 (0-2') NR33 (2'-4') NR33 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR34	6'	3	3	NR34 (0-2') NR34 (2'-4') NR34 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR35	14'	7	4	NR35 (0-2') NR35 (4'-6') NR35 (8'-10') NR35 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
CORE	0.5'	0	1	NR35 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR36	14'	7	4	NR36 (0-2') NR36 (4'-6') NR36 (8'-10') NR36 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 3-1 (continued)

PHASE 4 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR37	14'	7	7	NR37 (0-2') NR37 (2'-4') NR37 (4'-6') NR37 (6'-8') NR37 (8'-10') NR37 (10'-12') NR37 (12'-14')	STARS Table 2 VOCs/SVOCs, Priority Pollutant Metals (PP) (Methods 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 12'-14'. PP Metals only on samples from 2'-4', 6'-8' and 10'-12'.
CORE	0.5'	0	1	NR37 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR38	14'	7	4	NR38 (0-2') NR38 (4'-6') NR38 (8'-10') NR38 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR39	14'	7	4	NR39 (0-2') NR39 (4'-6') NR39 (8'-10') NR39 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR40	14'	7	4	NR40 (0-2') NR40 (4'-6') NR40 (8'-10') NR40 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
CORE	0.5'	0	1	NR40 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR41	14'	7	7	NR41 (0-2') NR41 (2'-4') NR41 (4'-6') NR41 (6'-8') NR41 (8'-10') NR41 (10'-12') NR41 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

Delineation Borings and Soil Sampling at Perimeter of Property

- Advance borings at eleven locations along the perimeter of the property (NR24 through NR34) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-1.

- At locations NR24, NR25, NR27, NR29 and NR31, analyze select soil samples (total of 24 samples) for arsenic, mercury and zinc. The sample analyses are summarized on Table 3-1.

- At locations NR26, NR28, NR30, NR32, NR33 and NR34, analyze select soil samples (total of 29 samples) for the VOCs and SVOCs listed in STARS Table 2, and for priority pollutant metals in accordance with Table 3-1.

Delineation Borings and Soil Sampling Beneath Runway

- Advance borings beneath runway tarmac and former taxiway at seven locations (NR35 through NR41) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-1.

- At locations NR35, NR36 and NR38 through NR41, analyze select soil samples (total of 27 samples) for arsenic, mercury and zinc. The sample analyses are summarized on Table 3-1.

- At location NR37, analyze select soil samples (total of 7 samples) for the VOCs and SVOCs listed in STARS Table 2, and for priority pollutant metals in accordance with Table 3-1.

Concrete Core Sampling

- Collect concrete core samples from the runway at three locations (NR35, NR37 and NR40).

- Analyze each concrete core sample (total of 3 samples) for Toxicity Characteristic Leaching Procedure (TCLP) metals, VOCs and SVOCs and pesticides/herbicides. The sample analyses are summarized on Table 3-1.

3.1.5 Phase 5 Field Program

Based on the results of the Phase 4 Field Program, a fifth phase was undertaken to further delineate the horizontal and vertical extent of soil contamination for the purposes of remediation. The Phase 5 Field Program consisted of soil sampling activities along the perimeter of the site, within the parking areas on the property and beneath the tarmac and former taxiway. In addition, a grid survey was conducted to establish the location of the soil borings and to delineate areas across the entire site by quadrants where soil remediation/excavation would be required.

The following is an outline of the scope of work for the Phase 5 Field Program:

Grid Survey and Location of Borings

- Survey a grid comprised of 50-foot by 50-foot and 100-foot by 100-foot quadrants.
- Survey locations of the soil borings.

Delineation Borings and Soil Sampling in Perimeter Area

- Advance borings at 24 new locations along the perimeter of the property (NR42 through NR65) and at two existing locations (NR32 and NR33) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-2.
- At new locations NR42 through NR65, analyze select soil samples (total of 80 samples) for priority pollutant metals. The sample analyses are summarized on Table 3-2.
- At new locations NR42, NR43, NR46, NR48, NR51, NR53, NR55, NR57, NR59, NR63 and NR65, also analyze select soil samples (total of 22 samples) for the SVOCs listed in STARS Table 2 in accordance with Table 3-2.
- At existing locations NR32 and NR33, analyze soil samples (total of 4 samples) for priority pollutant metals.

TABLE 3-2

PHASE 5 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR32	2'	1	2	NR32(0-1') NR32(1'-2')	Priority Pollutant (PP) Metals (Methods 6010/7470) on all samples.
NR33	2'	1	2	NR33(0-1') NR33 (1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR35	2'	1	2	NR35(0-1') NR35(1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR38	1'	1	2	NR38(0-1') NR38(1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR42	6'	3	4	NR42 (0-1') NR42 (1'-2') NR42 (2'-4') NR42 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR43	6'	3	4	NR43 (0-1') NR43 (1'-2') NR43 (2'-4') NR43 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR44	6'	3	4	NR44 (0-1') NR44 (1'-2') NR44 (2'-4') NR44 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR45	4'	2	3	NR45 (0-1') NR45 (1'-2') NR45 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR46	4'	2	3	NR46 (0-1') NR46 (1'-2') NR46 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR47	4'	2	3	NR47 (0-1') NR47 (1'-2') NR47 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR48	6'	3	4	NR48 (0-1') NR48 (1'-2') NR48 (2'-4') NR48 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR49	6'	3	4	NR49 (0-1') NR49 (1'-2') NR49 (2'-4') NR49 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR50	4'	2	3	NR50 (0-1') NR50 (1'-2') NR50 (2'-4')	PP Metals (Methods 6010/7470) on all samples.

TABLE 3-2 (continued)

PHASE 5 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR51	4'	2	3	NR51 (0-1') NR51 (1'-2') NR51 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR52	4'	2	3	NR52 (0-1') NR52 (1'-2') NR52 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR53	6'	3	4	NR53 (0-1') NR53 (1'-2') NR53 (2'-4') NR53 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR54	4'	2	3	NR54 (0-1') NR54 (1'-2') NR54 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR55	4'	2	3	NR55 (0-1') NR55 (1'-2') NR55 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR56	4'	2	3	NR56 (0-1') NR56 (1'-2') NR56 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR57	6'	3	4	NR57 (0-1') NR57 (1'-2') NR57 (2'-4') NR57 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR58	6'	3	4	NR58 (0-1') NR58 (1'-2') NR58 (2'-4') NR58 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR59	4'	2	3	NR59 (0-1') NR59 (1'-2') NR59 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR60	4'	2	3	NR60 (0-1') NR60 (1'-2') NR60 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR61	4'	2	3	NR61 (0-1') NR61 (1'-2') NR61 (2'-4')	PP Metals (Methods 6010/7470) on all samples.

TABLE 3-2 (continued)

PHASE 5 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR62	4'	2	3	NR62 (0-1') NR62 (1'-2') NR62 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR63	4'	2	3	NR63 (0-1') NR63 (1'-2') NR63 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR64	4'	2	3	NR64 (0-1') NR64 (1'-2') NR64 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR65	4'	2	3	NR65 (0-1') NR65 (1'-2') NR65 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR66	4'	2	3	NR66 (0-1') NR66 (1'-2') NR66 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR67	4'	2	3	NR67 (0-1') NR67 (1'-2') NR67 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR68	4'	2	3	NR68 (0-1') NR68 (1'-2') NR68 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR69	4'	2	3	NR69 (0-1') NR69 (1'-2') NR69 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR70	4'	2	3	NR70 (0-1') NR70 (1'-2') NR70 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR71	4'	2	3	NR71 (0-1') NR71 (1'-2') NR71 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR72	6'	3	4	NR72 (0-1') NR72 (1'-2') NR72 (2'-4') NR72 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.

TABLE 3-2 (continued)

PHASE 5 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR73	4'	2	3	NR73 (0-1') NR73 (1'-2') NR73 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR74	4'	2	3	NR74 (0-1') NR74 (1'-2') NR74 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR75	4'	2	3	NR75 (0-1') NR75 (1'-2') NR75 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR76	6'	3	4	NR76 (0-1') NR76 (1'-2') NR76 (2'-4') NR76 (4'-6')	PP Metals (Methods 6010/7470) and STARS Table 2 SVOCs on all samples.
NR77	6'	3	4	NR77 (0-1') NR77 (1'-2') NR77 (2'-4') NR77 (4'-6')	PP Metals (Methods 6010/7470) and STARS Table 2 SVOCs on all samples.
NR78	6'	3	4	NR78 (0-1') NR78 (1'-2') NR78 (2'-4') NR78 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR79	6'	3	4	NR79 (0-1') NR79 (1'-2') NR79 (2'-4') NR79 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR80	6'	3	4	NR80 (0-1') NR80 (1'-2') NR80 (2'-4') NR80 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR81	6'	3	4	NR81 (0-1') NR81 (1'-2') NR81 (2'-4') NR81 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR82	4'	2	3	NR82 (0-1') NR82 (1'-2') NR82 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR83	4'	2	3	NR83 (0-1') NR83 (1'-2') NR83 (2'-4')	PP Metals (Methods 6010/7470) on all samples

TABLE 3-2 (continued)

PHASE 5 FIELD PROGRAM
PROPOSED SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR84	4'	2	3	NR84 (0-1') NR84 (1'-2') NR84 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR85	4'	2	3	NR85 (0-1') NR85 (1'-2') NR85 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR86	4'	2	3	NR86 (0-1') NR86 (1'-2') NR86 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR87	4'	2	3	NR87 (0-1') NR87 (1'-2') NR87 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR88	4'	2	3	NR88 (0-1') NR88 (1'-2') NR88 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR89	4'	2	3	NR89 (0-1') NR89 (1'-2') NR89 (2'-4')	PP Metals (Methods 6010/7470) on all samples

Delineation Borings and Soil Sampling in Parking Area

- Advance borings at 13 new locations within the parking area on the property (NR66 through NR70 and NR82 through NR89) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-2.

- At new locations NR66 through NR70 and NR82 through NR89, analyze select soil samples (total of 39 samples) for priority pollutant metals. The sample analyses are summarized on Table 3-2.

- At new locations NR66, NR67 and NR69, analyze select soil samples (total of 6 samples) for the SVOCs listed in STARS Table 2 in accordance with Table 3-2.

Delineation Borings and Soil Sampling in Runway Area

- Advance borings beneath runway tarmac and former taxiway at 11 new locations (NR71 through NR81) and at two existing locations (NR35 and NR38) using a drilling rig, and collect split spoon soil samples for laboratory analysis at each location. The depths at which soil samples were collected for laboratory analysis at each location are summarized on Table 3-2.

- At all new locations NR71 through NR81, analyze select soil samples (total of 40 samples) for priority pollutant metals. The sample analyses are summarized on Table 3-2.

- At all new locations NR71 through NR81, analyze select soil samples (total of 26 samples) for the SVOCs listed in STARS Table 2 in accordance with Table 3-2.

- At existing locations NR35 and NR38, analyze soil samples (total of 4 samples) for priority pollutant metals.

3.2 Dry Well Remediation and Soil/Sediment Sampling Program

Prior to the commencement of the Phase 2 Field Program, it was recommended that three on-site dry wells be cleaned out and sampled. The remediation and endpoint soil/sediment sampling of three dry wells located in the vicinity of the runway was undertaken concurrently with the activities conducted during the Phase 2 Field Program. The following is an outline of the scope of work for the dry well remediation and endpoint sampling program:

Pump out and Disposal of Dry Well Liquid

- Pump out liquid present in each dry well.
- Transport and disposal of all dry well liquid at NGC's Industrial Wastewater Treatment Plant (IWTP).

Removal and Containment of Dry Well Sludge

- Vacuum/pump out sludge present at bottom of each dry well.
- Containment of dry well sludges in 55-gallon drums.

Removal and Containment of Dry Well Soil

- Excavation of approximately two feet of soil/sediment from bottom of each dry well.
- Containment of excavated soil in roll-off container(s) and/or 55-gallon drums.

Subsequent to the completion of the remediation efforts described above, the collection of soil/sediment endpoint samples were collected as follows:

Endpoint Soil/Sediment Sampling

- Collection of soil/sediment samples from the bottom of each dry well. Two soil/ sediment samples were obtained from each dry well (total of 6 samples). Soil/sediment samples were collected at depths of 0 to 2 feet and 2 to 4 feet from the bottom of each dry well.
- Laboratory analysis of the six soil/sediment samples for: VOCs and SVOCs listed in STARS Table 2, glycols (Method 89-9) and priority pollutant metals (Methods 6010/7470).

Section 4

4.0 FIELD ACTIVITIES

This section provides a brief description of the field activities conducted in support of the Phase II Site Assessment at the North Runway - Parcel L1 site. Daily field activity reports, which are available in the project file, provide documentation of each of the five Phase II field programs and the dry well remediation and soil/sediment endpoint sampling program.

4.1 Phase II Field Programs

As discussed in Section 3, a five-phased field program was conducted as part of the Phase II Site Assessment at the North Runway - Parcel L1 site. These field programs provided for the investigation, confirmation and delineation of surface and subsurface soil contamination at the site.

Figure 4-1 illustrates the approximate locations of the soil borings and dry wells and the soil samples collected as part of the Phase II Site Assessment.

4.1.1 Phase 1 Field Program

Based upon the recommended scope of work for the Phase 1 Field Program, three surface soil samples, identified on Figure 4-1 as NRSSE, NRSSN and NRSSW, were collected along the north, east and west sides of the end of the runway at locations of the former thrust deflectors. Each surface soil sample was collected utilizing disposable polyethylene scoops.

Surface soil samples were collected at a depth of 0 to 3 inches below the ground surface (or beneath surface vegetation, if present) and analyzed for priority pollutant metals (Methods 6010 and 7470), fuel-related constituents (Method 310-13) and semivolatile organic compounds (Method 8270).

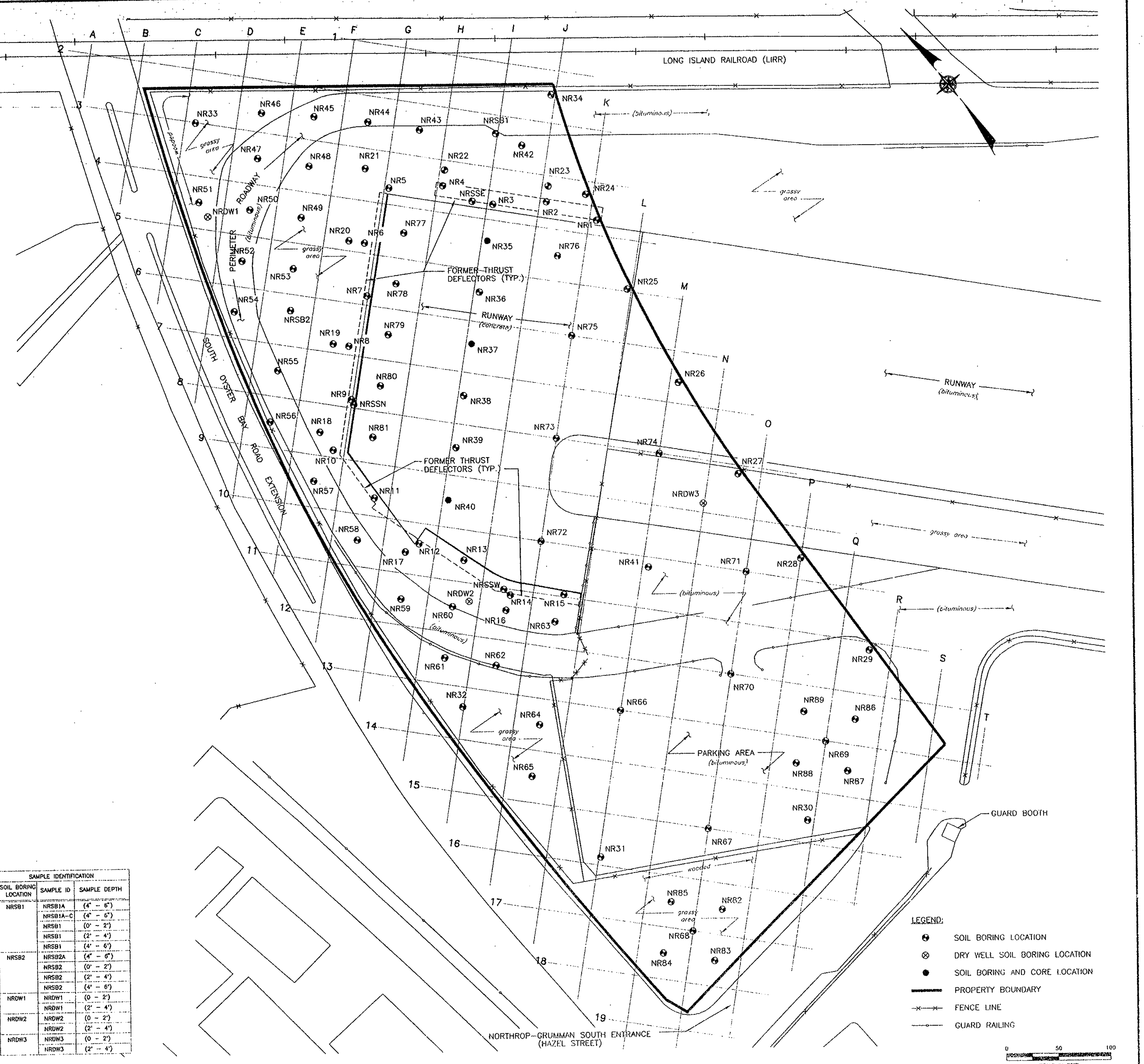
SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NRSSE	NRSSE	(0 – 3")
NRSSN	NRSSN	(0 – 3")
NRSSW	NRSSW	(0 – 3")
NR1	NR1A	(4" – 6")
	NR1B	(10" – 12")
	2NR1A	(1' – 2')
	2NR1B	(2' – 3')
	2NR1C	(3' – 4')
	2NR1D	(4' – 5')
NR2	NR2A	(4" – 6")
	NR2B	(10" – 12")
	CNR2A	(4" – 6")
	CNR2B	(10" – 12")
	2NR2A	(1' – 2')
	2NR2B	(2' – 3')
	2NR2C	(3' – 4')
	2NR2D	(4' – 5')
NR3	NR3A	(4" – 6")
	NR3B	(10" – 12")
	CNR3A	(4" – 6")
	CNR3B	(10" – 12")
	2NR3A	(1' – 2')
	2NR3B	(2' – 3')
	2NR3C	(3' – 4')
	2NR3D	(4' – 5')
NR4	NR4A	(4" – 6")
	NR4B	(10" – 12")
NR5	NR5A	(4" – 6")
	NR5B	(10" – 12")
	2NR5A	(1' – 2')
	2NR5B	(2' – 3')
	2NR5C	(3' – 4')
	2NR5D	(4' – 5')
NR6	NR6A	(4" – 6")
	NR6B	(10" – 12")
	2NR6A	(1' – 2')
	2NR6B	(2' – 3')
	2NR6C	(3' – 4')
	2NR6D	(4' – 5')
NR7	NR7A	(4" – 6")
	NR7B	(10" – 12")
NR8	NR8A	(4" – 6")
	NR8B	(10" – 12")
NR9	NR9A	(4" – 6")
	NR9B	(10" – 12")
	2NR9A	(1' – 2')
	2NR9B	(2' – 3')
	2NR9C	(3' – 4')
	2NR9D	(4' – 5')
NR10	NR10A	(4" – 6")
	NR10B	(10" – 12")
NR11	NR11A	(4" – 6")
	NR11A-C	(4" – 6")
	NR11B	(10" – 12")
	CNR11A	(4" – 6")
	CNR11B	(10" – 12")
	2NR11A	(1' – 2')
	2NR11B	(2' – 3')
	2NR11C	(3' – 4')
	2NR11D	(4' – 5')
	NR11	(4' – 6')
	NR11	(6' – 8')
	NR11	(8' – 10')
	NR11	(10' – 12')
NR12	NR12A	(4" – 6")
	NR12B	(10" – 12")
NR13	NR13A	(4" – 6")
	NR13B	(10" – 12")
NR14	NR14A	(4" – 6")
	NR14B	(10" – 12")
	CNR14A	(4" – 6")
	CNR14B	(10" – 12")
	2NR14A	(1' – 2')
	2NR14B	(2' – 3')
	2NR14C	(3' – 4')
	2NR14D	(4' – 5')
NR15	NR15A	(4" – 6")
	NR15B	(10" – 12")
NR16	NR16A	(0 – 1')
	NR16B	(1' – 2')
	NR16C	(2' – 3')
	NR16D	(3' – 4')
NR17	NR17A	(0 – 1')
	NR17B	(1' – 2')
	NR17C	(2' – 3')
	NR17D	(3' – 4')
NR18	NR18A	(0 – 1')
	NR18B	(1' – 2')
	NR18C	(2' – 3')
	NR18D	(3' – 4')
NR19	NR19A	(0 – 1')
	NR19B	(1' – 2')
	NR19C	(2' – 3')
	NR19D	(3' – 4')
	NR19	(4' – 6')
	NR19	(6' – 8')
	NR19	(8' – 10')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR20	NR20A	(0 – 1')
	NR20B	(1' – 2')
	NR20C	(2' – 3')
	NR20D	(3' – 4')
NR21	NR21A	(0 – 1')
	NR21B	(1' – 2')
	NR21C	(2' – 3')
	NR21D	(3' – 4')
	NR21	(4' – 6')
	NR21	(7' – 9')
	NR21	(9' – 11')
NR22	NR22A	(0 – 1')
	NR22B	(1' – 2')
	NR22C	(2' – 3')
	NR22D	(3' – 4')
	NR22	(4' – 6')
	NR22	(6' – 8')
	NR22	(10' – 12')
	NR22	(12' – 14')
NR23	NR23A	(0 – 1')
	NR23B	(1' – 2')
	NR23C	(2' – 3')
	NR23D	(3' – 4')
	NR23	(4' – 6')
	NR23	(6' – 8')
	NR23	(10' – 12')
NR24	NR24	(0 – 2')
	NR24	(2' – 4')
	NR24	(4' – 6')
	NR24	(6' – 8')
	NR24	(8' – 10')
	NR24	(10' – 12')
	NR24	(12' – 14')
	NR24	(14' – 16')
NR25	NR25	(0 – 2')
	NR25	(4' – 6')
	NR25	(8' – 10')
	NR25	(14' – 16')
NR26	NR26	(0 – 2')
	NR26	(2' – 4')
	NR26	(4' – 6')
	NR26	(6' – 8')
	NR26	(8' – 10')
	NR26	(10' – 12')
	NR26	(12' – 14')
	NR26	(14' – 16')
NR27	NR27	(0 – 2')
	NR27	(2' – 4')
	NR27	(4' – 6')
	NR27	(6' – 8')
	NR27	(8' – 10')
	NR27	(10' – 12')
	NR27	(12' – 14')
NR28	NR28	(0 – 2')
	NR28	(2' – 4')
	NR28	(4' – 6')
	NR28	(6' – 8')
	NR28	(8' – 10')
	NR28	(10' – 12')
	NR28	(12' – 14')
NR29	NR29	(0 – 2')
	NR29	(4' – 6')
	NR29	(10' – 12')
NR30	NR30	(0 – 2')
	NR30	(2' – 4')
	NR30	(4' – 6')
NR31	NR31	(0 – 2')
	NR31	(2' – 4')
	NR31	(4' – 6')
NR32	NR32	(0 – 1')
	NR32	(1' – 2')
	NR32	(0 – 2')
	NR32	(2' – 4')
	NR32	(4' – 6')
	NR32	(6' – 8')
	NR32	(8' – 10')
NR33	NR33	(0 – 1')
	NR33	(1' – 2')
	NR33	(0 – 2')
	NR33	(2' – 4')
	NR33	(4' – 6')
NR34	NR34	(0 – 2')
	NR34	(2' – 4')
	NR34	(4' – 6')
NR35	NR35	CORE
	NR35	(0 – 1')
	NR35	(1' – 2')
	NR35	(0 – 2')
	NR35	(4' – 6')
	NR35	(8' – 10')
	NR35	(12' – 14')
NR36	NR36	(0 – 2')
	NR36	(4' – 6')
	NR36	(8' – 10')
	NR36	(12' – 14')
NR37	NR37	CORE
	NR37	(0 – 2')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR37	NR37	(2' – 4')
	NR37	(4' – 6')
	NR37	(6' – 8')
	NR37	(8' – 10')
	NR37	(10' – 12')
	NR37	(12' – 14')
NR38	NR38	(0 – 1')
	NR38	(1' – 2')
	NR38	(0 – 2')
	NR38	(4' – 6')
	NR38	(8' – 10')
	NR38	(12' – 14')
NR39	NR39	(0 – 2')
	NR39	(4' – 6')
	NR39	(8' – 10')
	NR39	(12' – 14')
NR40	NR40	CORE
	NR40	(0 – 2')
	NR40	(4' – 6')
	NR40	(8' – 10')
	NR40	(12' – 14')
NR41	NR41	(0 – 2')
	NR41	(2' – 4')
	NR41	(4' – 6')
	NR41	(6' – 8')
	NR41	(8' – 10')
	NR41	(10' – 12')
	NR41	(12' – 14')
NR42	NR42	(0 – 1')
	NR42	(1' – 2')
	NR42	(2' – 4')
	NR42	(4' – 6')
NR43	NR43	(0 – 1')
	NR43	(1' – 2')
	NR43	(2' – 4')
	NR43	(4' – 6')
NR44	NR44	(0 – 1')
	NR44	(1' – 2')
	NR44	(2' – 4')
	NR44	(4' – 6')
NR45	NR45	(0 – 1')
	NR45	(1' – 2')
	NR45	(2' – 4')
NR46	NR46	(0 – 1')
	NR46	(1' – 2')
	NR46	(2' – 4')
NR47	NR47	(0 – 1')
	NR47	(1' – 2')
	NR47	(2' – 4')
NR48	NR48	(0 – 1')
	NR48	(1' – 2')
	NR48	(2' – 4')
	NR48	(4' – 6')
NR49	NR49	(0 – 1')
	NR49	(1' – 2')
	NR49	(2' – 4')
	NR49	(4' – 6')
NR50	NR50	(0 – 1')
	NR50	(1' – 2')
	NR50	(2' – 4')
NR51	NR51	(0 – 1')
	NR51	(1' – 2')
	NR51	(2' – 4')
NR52	NR52	(0 – 1')
	NR52	(1' – 2')
	NR52	(2' – 4')
NR53	NR53	(0 – 1')
	NR53	(1' – 2')
	NR53	(2' – 4')
	NR53	(4' – 6')
NR54	NR54	(0 – 1')
	NR54	(1' – 2')
	NR54	(2' – 4')
NR55	NR55	(0 – 1')
	NR55	(1' – 2')
	NR55	(2' – 4')
NR56	NR56	(0 – 1')
	NR56	(1' – 2')
	NR56	(2' – 4')
NR57	NR57	(0 – 1')
	NR57	(1' – 2')
	NR57	(2' – 4')
	NR57	(4' – 6')
NR58	NR58	(0 – 1')
	NR58	(1' – 2')
	NR58	(2' – 4')
	NR58	(4' – 6')
NR59	NR59	(0 – 1')
	NR59	(1' – 2')
	NR59	(2' – 4')
NR60	NR60	(0 – 1')
	NR60	(1' – 2')
	NR60	(2' – 4')
NR61	NR61	(0 – 1')
	NR61	(1' – 2')
	NR61	(2' – 4')
NR62	NR62	(0 – 1')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR62	NR62	(1' – 2')
	NR62	(2' – 4')
NR63	NR63	(0 – 1')
	NR63	(1' – 2')
	NR63	(2' – 4')
NR64	NR64	(0 – 1')
	NR64	(1' – 2')
	NR64	(2' – 4')
NR65	NR65	(0 – 1')
	NR65	(1' – 2')
	NR65	(2' – 4')
NR66	NR66	(0 – 1')
	NR66	(1' – 2')
	NR66	(2' – 4')
NR67	NR67	(0 – 1')
	NR67	(1' – 2')
	NR67	(2' – 4')
NR68	NR68	(0 – 1')
	NR68	(1' – 2')
	NR68	(2' – 4')
NR69	NR69	(0 – 1')
	NR69	(1' – 2')
	NR69	(2' – 4')
NR70	NR70	(0 – 1')
	NR70	(1' – 2')
	NR70	(2' – 4')
NR71	NR71	(0 – 1')
	NR71	(1' – 2')
	NR71	(2' – 4')
NR72	NR72	(0 – 1')
	NR72	(1' – 2')
	NR72	(2' – 4')
	NR72	(4' – 6')
NR73	NR73	(0 – 1')
	NR73	(1' – 2')
	NR73	(2' – 4')
NR74	NR74	(0 – 1')
	NR74	(1' – 2')
	NR74	(2' – 4')
NR75	NR75	(0 – 1')
	NR75	(1' – 2')
	NR75	(2' – 4')
NR76	NR76	(0 – 1')
	NR76	(1' – 2')
	NR76	(2' – 4')
	NR76	(4' – 6')
NR77	NR77	(0 – 1')
	NR77	(1' – 2')
	NR77	(2' – 4')
	NR77	(4' – 6')
NR78	NR78	(0 – 1')
	NR78	(1' – 2')
	NR78	(2' – 4')
	NR78	(4' – 6')
NR79	NR79	(0 – 1')
	NR79	(1' – 2')
	NR79	(2' – 4')
	NR79	(4' – 6')
NR80	NR80	(0 – 1')
	NR80	(1' – 2')
	NR80	(2' – 4')
	NR80	(4' – 6')
NR81	NR81	(0 – 1')
	NR81	(1' – 2')
	NR81	(2' – 4')
	NR81	(4' – 6')
NR82	NR82	(0 – 1')
	NR82	(1' – 2')
	NR82	(2' – 4')
NR83	NR83	(0 – 1')
	NR83	(1' – 2')
	NR83	(2' – 4')
NR84	NR84	(0 – 1')
	NR84	(1' – 2')
	NR84	(2' – 4')
NR85	NR85	(0 – 1')
	NR85	(1' – 2')
	NR85	(2' – 4')
NR86	NR86	(0 – 1')
	NR86	(1' – 2')
	NR86	(2' – 4')
NR87	NR87	(0 – 1')
	NR87	(1' – 2')
	NR87	(2' – 4')
NR88	NR88	(0 – 1')
	NR88	(1' – 2')
	NR88	(2' – 4')
NR89	NR89	(0 – 1')
	NR89	(1' – 2')
	NR89	(2' – 4')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NRSB1	NRSB1A	(4" – 6")
	NRSB1A-C	(4" – 6")
	NRSB1	(0' – 2')
	NRSB1	(2' – 4')
	NRSB1	(4' – 6')
NRSB2	NRSB2A	(4" – 6")
	NRSB2	(0' – 2')
	NRSB2	(2' – 4')
	NRSB2	(4' – 6')
NRDW1	NRDW1	(0 – 2')
	NRDW1	(2' – 4')
NRDW2	NRDW2	(0 – 2')
	NRDW2	(2' – 4')
NRDW3	NRDW3	(0 – 2')
	NRDW3	(2' – 4')



DIRECTORY 1383
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DATE 01/02/97

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PROJECT ENGINEER: E.K. DRAWN BY: R.S.
DESIGNED BY: E.K./M.R. CHECKED BY: M.P.

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

NORTH RUNWAY – PARCEL L1
SOIL BORING LOCATION MAP

PROJECT NO. 1383-110
DATE DEC. 1996
SCALE 1"=50'
FIGURE 4-1

4.1.2 Phase 2 Field Program

Based upon the recommended scope of work for the Phase 2 Field Program, surface soil samples were collected at 100-foot intervals at locations NR1 through NR15, along the north, east and west sides of the end of the runway in the vicinity of the former thrust deflectors. A 3-1/4 inch diameter stainless steel hand auger was utilized to collect each soil sample. Of the 15 soil sampling locations, eight were located approximately 5 feet outward from the edge of the runway at locations of the former thrust deflectors. These are identified on Figure 4-1 as NR1, NR3, NR5, NR7, NR9, NR11, NR13 and NR15. The remaining seven sampling locations were located at staggered intervals approximately 15 feet outward from the edge of the runway. These sampling locations are identified on Figure 4-1 as NR2, NR4, NR6, NR8, NR10, NR12 and NR14.

Two soil samples were collected at each sampling location. The first sample was collected at a depth of 4 to 6 inches below grade (beneath the vegetation or ground surface) and designated by the letter "A". The second sample was collected at a depth of 10 to 12 inches below grade and designated by the letter "B". A total of 30 soil samples (i.e., two samples per location) were collected and analyzed for the volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) listed in Table 2 of Appendix B in NYSDEC's Spill Technology and Remediation Series (STARS) Memo #1, Petroleum-Contaminated Soil Guidance Policy (STARS Table 2), glycols (Method 89-9) and priority pollutant metals (Methods 6010 and 7470).

Surface soil samples were also collected at locations NRSB1 and NRSB2 approximately 75 feet north and east of the runway, respectively. One soil sample was collected at each location at a depth of 4 to 6 inches below grade (beneath the vegetation or ground surface) utilizing a 3-1/4 inch diameter hand auger. These soil samples were analyzed for the VOCs and SVOCs listed in STARS Table 2, glycols (Method 89-9) and priority pollutant metals (Methods 6010 and 7470).

The stainless steel hand auger utilized for the collection of all soil samples was decontaminated between sample collection and sample locations. Decontamination procedures consisted of an external alconox wash, a tap water rinse followed by a distilled/deionized water rinse. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

4.1.3 Phase 3 Field Program

Based upon the recommended scope of work for the Phase 3 Field Program, surface soil sampling, soil boring sampling and soil characterization sampling activities were conducted at the site. A description of each of these activities is provided below.

4.1.3.1 - Surface Soil Sampling

Confirmatory surface soil samples were collected immediately adjacent to soil boring locations NR2, NR3, NR11 and NR14. The confirmatory surface soil samples were identified as CNR2, CNR3, CNR11 and CNR14. A 3-1/4 inch diameter stainless steel hand auger was utilized for the collection of these soil samples. Two soil samples were collected at each location. The first sample was collected at a depth of 4 to 6 inches below grade (beneath the vegetation or ground surface) and designated by the letter "A". The second sample was collected at a depth of 10 to 12 inches below grade and designated by the letter "B". A total of eight soil samples (i.e., two samples per location) were collected, split and analyzed by two independent laboratories for arsenic (Method 7060-A), mercury (Method 7471-A) and zinc (Method 7951).

The stainless steel hand auger utilized for the collection of all soil samples was decontaminated between sample collection and sample locations. Decontamination procedures consisted of an external alconox wash, followed by a tap water rinse and final distilled/deionized water rinse. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

4.1.3.2 - Soil Boring Sampling

A soil boring sampling program was conducted utilizing a 4-1/4 inch hollow stem auger and 2 inch diameter split spoon sampler. Eight soil borings were advanced immediately adjacent to eight previous soil borings and identified as 2NR1, 2NR2, 2NR3, 2NR5, 2NR6, 2NR9, 2NR11 and 2NR14. Split spoon sampling was conducted at each location from 1 to 2 feet, 2 to 3 feet, 3 to 4 feet and 4 to 5 feet below grade, and each sample was identified by the letter "A", "B", "C" or "D", respectively. A total of 32 soil samples were collected (i.e., four samples per location) and analyzed for priority pollutant metals (Methods 6010 and 7470) and the SVOCs listed in STARS Table 2.

Also, eight additional soil borings were advanced 30 feet from the edge of the runway. These are identified on Figure 4-1 as NR16, NR17, NR18, NR19, NR20, NR21, NR22 and NR23. Split spoon sampling was conducted at each location from 0 to 1 foot, 1 to 2 feet, 2 to 3 feet and 3 to 4 feet below grade, and each sample was identified by the letter "A", "B", "C" or "D", respectively. A total of 32 soil samples were collected (i.e., four samples per location) and analyzed for priority pollutant metals (Methods 6010 and 7470) and the SVOCs listed in STARS Table 2.

Upon retrieval of each soil sample, the sample was screened for volatile organic compounds utilizing a photoionization detector (PID). Sample screening results are presented on the boring logs included in Appendix A. In addition, each soil sample was physically and visually characterized and inspected for the presence of staining or discoloration. This information is also included on the boring logs.

All soil boring and sampling equipment, including the 4-1/4 inch hollow stem auger(s) and 2 inch diameter split spoon sampler(s), was decontaminated between sample collection and sample locations by using a high pressure steam cleaner. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

4.1.3.3 - Soil Characterization Sampling

For waste characterization and disposal purposes, fifteen surface soil samples were collected immediately adjacent to the surface soil samples collected during the Phase 2 Field Program. The samples were collected utilizing a disposable polyethylene scoop at a depth of 0 to 6 inches below grade (beneath the vegetation or ground surface). All fifteen surface soil samples were submitted to the analytical laboratory for compositing into a single representative sample and subsequently analyzed for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) by Toxicity Characteristic Leaching Procedure (TCLP), total polychlorinated biphenyls (PCBs) by Method 8080 and total petroleum hydrocarbons (TPHCs) by Method 418.1.

4.1.4 Phase 4 Field Program

Based upon the recommended scope of work for the Phase 4 Field Program, soil boring sampling activities were conducted at select previous sample locations, along the perimeter of the site and beneath the runway tarmac and former taxiway. Concrete core samples were also collected from the runway. A description of each activity is provided below.

4.1.4.1 - Soil Boring Sampling

Seven soil borings were advanced immediately adjacent to previous sample locations NRSB1, NRSB2, NR11, NR19, NR21, NR2 and NR23 utilizing a 4-1/4 inch hollow stem auger. Soil samples were collected at each location utilizing a 2 inch diameter split spoon sampler. Table 4-1 presents a summary of the Phase 4 Field Program soil boring sampling activities.

Soil boring sampling activities were also conducted along the perimeter of the site. Eleven soil borings, identified on Figure 4-1 as NR24 through NR34, were advanced utilizing a 4-1/4 inch hollow stem auger. Soil samples were collected at each location utilizing a 2 inch diameter split spoon sampler.

TABLE 4-1

PHASE 4 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NRSB1	6'	3	3	NRSB1 (0-2') NRSB1 (2'-4') NRSB1 (4'-6')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NRSB2	6'	3	3	NRSB2 (0-2') NRSB2 (2'-4') NRSB2 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR11	12'	6	4	NR11 (4'-6') NR11 (6'-8') NR11 (8'-10') NR11 (10'-12')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR19	10'	5	3	NR19 (4'-6') NR19 (6'-8') NR19 (8'-10')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR21	11'	5	3	NR21 (4'-6') NR21 (7'-9') NR21 (9'-11')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR22	14'	7	5	NR22 (4'-6') NR22 (6'-8') NR22 (8'-10') NR22 (10'-12') NR22 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR23	12'	6	4	NR23 (4'-6') NR23 (6'-8') NR23 (8'-10') NR23 (10'-12')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR24	16'	8	8	NR24 (0-2') NR24 (2'-4') NR24 (4'-6') NR24 (6'-8') NR24 (8'-10') NR24 (10'-12') NR24 (12'-14') NR24 (14'-16')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 4-1 (continued)

PHASE 4 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR25	16'	8	4	NR25 (0-2') NR25 (4'-6') NR25 (8'-10') NR25 (14'-16')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR26	16'	8	8	NR26 (0-2') NR26 (2'-4') NR26 (4'-6') NR26 (6'-8') NR26 (8'-10') NR26 (10'-12') NR26 (12'-14') NR26 (14'-16')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 14'-16'. PP Metals only on samples from 2'-4', 6'-8', 10'-12' and 12'-14'.
NR27	14'	7	7	NR27 (0-2') NR27 (2'-4') NR27 (4'-6') NR27 (6'-8') NR27 (8'-10') NR27 (10'-12') NR27 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR28	14'	7	7	NR28 (0-2') NR28 (2'-4') NR28 (4'-6') NR28 (6'-8') NR28 (8'-10') NR28 (10'-12') NR28 (12'-14')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 12'-14'. PP Metals only on samples from 2'-4', 6'-8' and 10'-12'.
NR29	12'	6	3	NR29 (0-2') NR29 (4'-6') NR29 (10'-12')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 4-1 (continued)

PHASE 4 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR30	6'	3	3	NR30 (0-2') NR30 (2'-4') NR30 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR31	6'	3	3	NR31 (0-2') NR31 (2'-4') NR31 (4'-6')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR32	10'	5	5	NR32 (0-2') NR32 (2'-4') NR32 (4'-6') NR32 (6'-8') NR32 (8'-10')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2', 4'-6' and 8'-10'. PP Metals only on samples from 2'-4' and 6'-8'.
NR33	6'	3	3	NR33 (0-2') NR33 (2'-4') NR33 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR34	6'	3	3	NR34 (0-2') NR34 (2'-4') NR34 (4'-6')	STARS Table 2 VOCs/SVOCs, Priority Pollutant (PP) Metals (Methods 6010/7470) on samples from 0-2' and 4'-6'. PP Metals only on sample from 2'-4'.
NR35	14'	7	4	NR35 (0-2') NR35 (4'-6') NR35 (8'-10') NR35 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
CORE	0.5'	0	1	NR35 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR36	14'	7	4	NR36 (0-2') NR36 (4'-6') NR36 (8'-10') NR36 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

TABLE 4-1 (continued)

PHASE 4 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR37	14'	7	7	NR37 (0-2') NR37 (2'-4') NR37 (4'-6') NR37 (6'-8') NR37 (8'-10') NR37 (10'-12') NR37 (12'-14')	STARS Table 2 VOCs/SVOCs, Priority Pollutant Metals (PP) (Methods 6010/7470) on samples from 0-2', 4'-6', 8'-10' and 12'-14'. PP Metals only on samples from 2'-4', 6'-8' and 10'-12'.
CORE	0.5'	0	1	NR37 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR38	14'	7	4	NR38 (0-2') NR38 (4'-6') NR38 (8'-10') NR38 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR39	14'	7	4	NR39 (0-2') NR39 (4'-6') NR39 (8'-10') NR39 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
NR40	14'	7	4	NR40 (0-2') NR40 (4'-6') NR40 (8'-10') NR40 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)
CORE	0.5'	0	1	NR40 CORE	TCLP VOCs, SVOCs, Metals, Pesticides/Herbicides
NR41	14'	7	7	NR41 (0-2') NR41 (2'-4') NR41 (4'-6') NR41 (6'-8') NR41 (8'-10') NR41 (10'-12') NR41 (12'-14')	Arsenic (Method 6010) Mercury (Method 7470) Zinc (Method 6010)

In addition, seven soil borings, identified on Figure 4-1 as NR35 through NR41, were advanced beneath the runway tarmac and former taxiway. Soil samples were collected at each location utilizing a 2 inch diameter split spoon sampler.

Upon retrieval of each soil sample, the sample was screened for volatile organic compounds utilizing a photoionization detector (PID). Sample screening results are presented on the boring logs included in Appendix A. In addition, each soil sample was physically and visually characterized and inspected for the presence of staining or discoloration. This information is also included on the boring logs.

All soil boring and sampling equipment, including the 4-1/4 inch hollow stem auger(s) and 2 inch diameter split spoon sampler(s), was decontaminated between sample collection and sample locations utilizing a high pressure steam cleaner. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

4.1.4.2 - Concrete Core Sampling

Three concrete core samples, identified on Figure 4-1 as NR35 (Core), NR37 (Core) and NR40 (Core), were collected from the runway and analyzed for the eight RCRA metals, VOCs, SVOCs and pesticides/herbicides by TCLP. Table 4-1 presents a summary of the concrete core sampling activities.

4.1.5 Phase 5 Field Program

Based upon the recommended scope of work for the Phase 5 Field Program, soil boring sampling activities were conducted along the perimeter of the property, within the parking areas on the property and beneath the runway tarmac and former taxiway. In addition, a grid survey was performed across the entire site. A description of each activity is provided below.

4.1.5.1 - Grid Survey and Location of Borings

A survey was conducted to establish 50-foot by 50-foot and 100-foot by 100-foot quadrants across the entire North Runway - Parcel L1 property. In addition, the soil borings advanced during each field program were located with respect to this grid.

4.1.5.2 - Soil Boring Sampling

Twenty-four soil borings, identified on Figure 4-1 as NR42 through NR65, were advanced along the perimeter area of the site utilizing a 4-1/4 inch hollow stem auger. In addition, two soil borings were advanced immediately adjacent to two previous sampling locations (NR32 and NR33). Soil samples were collected at each location utilizing a 2 inch diameter split spoon sampler. Table 4-2 presents a summary of the soil boring sampling activities.

Soil boring sampling activities were also conducted within the parking area on the property and in a grassy area at the southwest corner of the site, near the Hazel Street entrance to the NGC Bethpage Facility. Thirteen soil borings, identified on Figure 4-1 as NR66 through NR70 and NR82 through NR89, were advanced utilizing a 4-1/4 diameter inch hollow stem auger. Soil samples were collected at each location utilizing a 2 inch diameter split spoon sampler.

Soil boring sampling activities were also conducted beneath the runway tarmac and former taxiway. Eleven soil borings, identified on Figure 4-1 as NR71 through NR81, were advanced utilizing a 4-1/4 inch diameter hollow stem auger. In addition, two soil borings were advanced immediately adjacent to two previous sampling locations (NR35 and NR38). Soil samples were collected utilizing a 2 inch diameter split spoon sampler.

TABLE 4-2

PHASE 5 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR32	2'	1	2	NR32(0-1') NR32(1'-2')	Priority Pollutant (PP) Metals (Methods 6010/7470) on all samples.
NR33	2'	1	2	NR33(0-1') NR33 (1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR35	2'	1	2	NR35(0-1') NR35(1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR38	1'	1	2	NR38(0-1') NR38(1'-2')	PP Metals (Methods 6010/7470) on all samples.
NR42	6'	3	4	NR42 (0-1') NR42 (1'-2') NR42 (2'-4') NR42 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR43	6'	3	4	NR43 (0-1') NR43 (1'-2') NR43 (2'-4') NR43 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR44	6'	3	4	NR44 (0-1') NR44 (1'-2') NR44 (2'-4') NR44 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR45	4'	2	3	NR45 (0-1') NR45 (1'-2') NR45 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR46	4'	2	3	NR46 (0-1') NR46 (1'-2') NR46 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR47	4'	2	3	NR47 (0-1') NR47 (1'-2') NR47 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR48	6'	3	4	NR48 (0-1') NR48 (1'-2') NR48 (2'-4') NR48 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR49	6'	3	4	NR49 (0-1') NR49 (1'-2') NR49 (2'-4') NR49 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR50	4'	2	3	NR50 (0-1') NR50 (1'-2') NR50 (2'-4')	PP Metals (Methods 6010/7470) on all samples.

TABLE 4-2 (continued)

PHASE 5 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR51	4'	2	3	NR51 (0-1') NR51 (1'-2') NR51 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR52	4'	2	3	NR52 (0-1') NR52 (1'-2') NR52 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR53	6'	3	4	NR53 (0-1') NR53 (1'-2') NR53 (2'-4') NR53 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR54	4'	2	3	NR54 (0-1') NR54 (1'-2') NR54 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR55	4'	2	3	NR55 (0-1') NR55 (1'-2') NR55 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR56	4'	2	3	NR56 (0-1') NR56 (1'-2') NR56 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR57	6'	3	4	NR57 (0-1') NR57 (1'-2') NR57 (2'-4') NR57 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR58	6'	3	4	NR58 (0-1') NR58 (1'-2') NR58 (2'-4') NR58 (4'-6')	PP Metals (Methods 6010/7470) on all samples.
NR59	4'	2	3	NR59 (0-1') NR59 (1'-2') NR59 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR60	4'	2	3	NR60 (0-1') NR60 (1'-2') NR60 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR61	4'	2	3	NR61 (0-1') NR61 (1'-2') NR61 (2'-4')	PP Metals (Methods 6010/7470) on all samples.

TABLE 4-2 (continued)

PHASE 5 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR62	4'	2	3	NR62 (0-1') NR62 (1'-2') NR62 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR63	4'	2	3	NR63 (0-1') NR63 (1'-2') NR63 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR64	4'	2	3	NR64 (0-1') NR64 (1'-2') NR64 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR65	4'	2	3	NR65 (0-1') NR65 (1'-2') NR65 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR66	4'	2	3	NR66 (0-1') NR66 (1'-2') NR66 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR67	4'	2	3	NR67 (0-1') NR67 (1'-2') NR67 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR68	4'	2	3	NR68 (0-1') NR68 (1'-2') NR68 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR69	4'	2	3	NR69 (0-1') NR69 (1'-2') NR69 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR70	4'	2	3	NR70 (0-1') NR70 (1'-2') NR70 (2'-4')	PP Metals (Methods 6010/7470) on all samples.
NR71	4'	2	3	NR71 (0-1') NR71 (1'-2') NR71 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR72	6'	3	4	NR72 (0-1') NR72 (1'-2') NR72 (2'-4') NR72 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.

TABLE 4-2 (continued)

PHASE 5 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR73	4'	2	3	NR73 (0-1') NR73 (1'-2') NR73 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR74	4'	2	3	NR74 (0-1') NR74 (1'-2') NR74 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR75	4'	2	3	NR75 (0-1') NR75 (1'-2') NR75 (2'-4')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR76	6'	3	4	NR76 (0-1') NR76 (1'-2') NR76 (2'-4') NR76 (4'-6')	PP Metals (Methods 6010/7470) and STARS Table 2 SVOCs on all samples.
NR77	6'	3	4	NR77 (0-1') NR77 (1'-2') NR77 (2'-4') NR77 (4'-6')	PP Metals (Methods 6010/7470) and STARS Table 2 SVOCs on all samples.
NR78	6'	3	4	NR78 (0-1') NR78 (1'-2') NR78 (2'-4') NR78 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR79	6'	3	4	NR79 (0-1') NR79 (1'-2') NR79 (2'-4') NR79 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR80	6'	3	4	NR80 (0-1') NR80 (1'-2') NR80 (2'-4') NR80 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR81	6'	3	4	NR81 (0-1') NR81 (1'-2') NR81 (2'-4') NR81 (4'-6')	PP Metals (Methods 6010/7470) on all samples. Also, STARS Table 2 SVOCs on 0-1' and 1'-2' samples.
NR82	4'	2	3	NR82 (0-1') NR82 (1'-2') NR82 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR83	4'	2	3	NR83 (0-1') NR83 (1'-2') NR83 (2'-4')	PP Metals (Methods 6010/7470) on all samples

TABLE 4-2 (continued)

PHASE 5 FIELD PROGRAM
SUMMARY OF SOIL BORING AND SAMPLING PROGRAM

Boring	Depth of Boring	No. of Split Spoon Samples	No. of Samples for Analysis	Sample Identification	Parameters for Analysis
NR84	4'	2	3	NR84 (0-1') NR84 (1'-2') NR84 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR85	4'	2	3	NR85 (0-1') NR85 (1'-2') NR85 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR86	4'	2	3	NR86 (0-1') NR86 (1'-2') NR86 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR87	4'	2	3	NR87 (0-1') NR87 (1'-2') NR87 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR88	4'	2	3	NR88 (0-1') NR88 (1'-2') NR88 (2'-4')	PP Metals (Methods 6010/7470) on all samples
NR89	4'	2	3	NR89 (0-1') NR89 (1'-2') NR89 (2'-4')	PP Metals (Methods 6010/7470) on all samples

Upon retrieval of each soil sample, the sample was screened for volatile organic compounds utilizing a photoionization detector (PID). Sample screening results are presented on the boring logs included in Appendix A. In addition, each soil sample was physically and visually characterized and inspected for the presence of staining or discoloration. This information is also included on the boring logs.

All soil boring and sampling equipment, including the 4-1/4 inch hollow stem auger(s) and 2 inch diameter split spoon sampler(s), was decontaminated between sample collection and sample locations utilizing a high pressure steam cleaner. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

4.1.6 Air Monitoring Activities

During the advancement of the soil borings, monitoring for volatile organic vapors was conducted in the workers' breathing zone and at the boring holes utilizing a photoionization detector (PID). Air monitoring results are documented in the project log book. Prior to use, the PID, a Photovac Microtip, was calibrated utilizing a 100 ppm concentration of isobutylene gas. The PID was also utilized to screen the soil samples that were collected. The soil sample screening results are documented on boring logs, which are presented in Appendix A. Other sample information records are available in the project log book for the North Runway - Parcel L1 site.

4.2 Dry Well Remediation and Soil/Sediment Sampling Program

Three dry wells, identified on Figure 4-1 as NRDW1, NRDW2 and NRDW3, are located in the vicinity of the runway. These dry wells were utilized to collect storm water runoff from the runway, taxiway, perimeter roadway and adjacent areas on the site. Specific remediation efforts for each dry well included the removal/pump out of liquid utilizing a high pressure vacuum truck. The liquids removed from each dry well were transported and disposed of at the NGC Industrial Wastewater Treatment Plant (IWTP). Sludges that were present at the bottom of

each dry well were also removed using a high pressure vacuum truck and containerized in 55-gallon drums for proper disposal by NGC. Following the removal of sludge, approximately two feet of soil material was removed from the bottom of each dry well utilizing a "clam shell" excavator and containerized in 55-gallon drums for proper disposal by NGC.

Subsequent to the removal of approximately 2 feet of soil from the bottom of each dry well, endpoint soil/sediment samples were collected utilizing a 4-1/4 inch diameter hollow stem auger and 2 inch diameter split spoon sampler. Two soil/sediment samples were collected at depths of 0 to 2 feet and 2 to 4 feet from the bottom of each dry well. A total of six soil/sediment samples were collected and analyzed for the VOCs and SVOCs listed in STARS Table 2, glycols (Method 89-9) and priority pollutant metals (Methods 6010 and 7470).

Upon retrieving each soil/sediment sample, the sample was screened for volatile organic compounds utilizing a photoionization detector (PID). Sample screening results are documented on boring logs presented in Appendix A. In addition, each soil sample was physically and visually characterized and inspected for the presence of staining or discoloration. This information, if pertinent, is also included on the boring logs.

All soil/sediment sampling equipment, including the 4-1/4 inch diameter hollow stem auger(s) and 2-inch diameter split spoon sampler(s), was decontaminated between sample collection and sample locations utilizing a high pressure steam cleaner. All decontamination water was contained in 55-gallon drums for proper disposal by NGC.

Section 5

5.0 FINDINGS

This section presents the findings of the Phase II Site Assessment including a summary of the analytical results of the soil samples obtained during each of the five Phase II field programs, as well as the dry well remediation and soil/sediment sampling program. Soil sample results are compared to the criteria included in Appendix A of the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) No. 4046 (referred to in this document as "NYSDEC TAGM criteria"), as well as the typical Eastern USA background soil contaminant concentration ranges included in the TAGM (referred to in this document as "Eastern USA background levels").

5.1 Surface and Subsurface Soil Sampling

As previously discussed in Section 4.1, five field programs were conducted in a phased approach as part of the Phase II Site Assessment for the North Runway-Parcel L1 site. Surface and subsurface soil samples were collected during these field programs. The analytical results of these samples are presented on Tables B-1 through B-8 in Appendix B.

5.1.1 Volatile Organic Compounds

The results of the surface and subsurface soil samples analyzed for volatile organic compounds (VOCs) listed in NYSDEC STARS Table 2 are presented on Table B-1 in Appendix B. A total of 56 soil samples were analyzed for STARS Table 2 VOCs. As indicated in Table B-1, several VOCs were detected in soil samples NR33 (0-2'), NR33 (4'-6'), NR34 (0-2'), NR37 (0-2') and NR37 (12'-14'). However, the concentrations detected were below the NYSDEC TAGM criteria.

5.1.2 Semivolatile Organic Compounds

The results of the surface soil samples analyzed for semivolatile organic compounds (SVOCs) by USEPA Method 8270 and the surface and subsurface soil samples analyzed for the SVOCs listed in STARS Table 2 are presented on Tables B-2 and B-3 in Appendix B, respectively. As Tables B-2 and B-3 indicate, three surface soil samples were analyzed for SVOCs by USEPA Method 8270 and 174 surface and subsurface soil samples were analyzed for STARS Table 2 SVOCs. Numerous SVOCs were detected in these soil samples; however, many of the SVOCs were detected at concentrations that were below the NYSDEC TAGM criteria. The SVOCs detected were the polycyclic aromatic hydrocarbons (PAHs) including several carcinogenic PAHs (CaPAHs).

As shown in Tables B-2 and B-3, only four of the samples, NRSSE (0-3"), NRSSN (0-3"), NR3A (4-6") and NR5A (4-6"), contained concentrations of total PAHs in excess of the NYSDEC TAGM criterion for total PAHs of 100,000 ug/kg. The concentrations of total PAHs ranged from 115,300 ug/kg in NRSSN (0-3") to 286,900 ug/kg in NRSSE (0-3"). In addition, Tables B-2 and B-3 indicate that 17 samples contained concentrations of total CaPAHs in excess of the criterion of 10,000 ug/kg. The concentrations of total CaPAHs ranged from 10,250 ug/kg in sample NR11A (4-6") to 117,000 ug/kg in sample NRSSE (0-3"). Table 5-1 presents a summary of individual SVOCs and total PAHs and CaPAHs which exceeded the NYSDEC TAGM criteria.

5.1.3 Fuel-Related Constituents

The results of the surface soil samples analyzed for fuel-related constituents are presented on Table B-4 in Appendix B. Three surface soil samples were analyzed for fuel-related constituents. As indicated on Table B-4, it appears that petroleum hydrocarbons as 10W40 oil were detected in all three samples at concentrations ranging from 67 mg/kg to 400 mg/kg.

Table 5-1

SVOCs EXCEEDING NYSDEC TAGM 4046 CRITERIA

Soil Sample (Depth)	SVOCs Exceeding NYSDEC TAGM 4046 Criteria	
	Individual SVOCs	Total PAHs and/or CaPAHs
NRSSE (0 - 3")	fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and indeno(1,2,3-cd)pyrene.	PAHs and CaPAHs.
NRSSN (0 - 3")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and indeno(1,2,3-cd)pyrene.	PAHs and CaPAHs.
NRSSW (0 - 3")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
NR1A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene	CaPAHs.
NR1B (10" - 12")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
2NR1A (1' - 2')	benzo(a)pyrene.	----
2NR1B (2' - 3')	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
2NR1D (4' - 5')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene.	CaPAHs.
2NR1D DL (4' - 5')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene.	CaPAHs.
NR2A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	----
NR2B (10" - 12")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
2NR2B (2' - 3')	benzo(a)pyrene.	----
NR3A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene.	PAHs and CaPAHs.
NR3B (10" - 12")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
2NR3A (1' - 2')	benzo(a)pyrene.	----
2NR3B (2' - 3')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	CaPAHs.
2NR3C (3' - 4')	benzo(a)pyrene.	----

Table 5-1 (continued)

SVOCs EXCEEDING NYSDEC TAGM 4046 CRITERIA

Soil Sample (Depth)	SVOCs Exceeding NYSDEC TAGM 4046 Criteria	
	Individual SVOCs	Total PAHs and/or CaPAHs
2NR3D (4' - 5')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR4A (4" - 6")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NR4B (10" - 12")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NR5A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene.	PAHs and CaPAHs.
NR5B (10" - 12")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
2NR5A (1' - 2')	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
2NR5B (2' - 3')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
2NR5D (4' - 5')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR6A (4" - 6")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NR6B (10" - 12")	benzo(a)pyrene.	----
2NR6B (2' - 3')	benzo(a)pyrene.	----
2NR6D (4' - 5')	benzo(a)pyrene.	----
NR7A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
NR7B (10" - 12")	benzo(a)pyrene.	----
NR8A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
NR8B (10" - 12")	benzo(a)anthracene and benzo(a)pyrene.	----
NR9A (4" - 6")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NR9B (10" - 12")	benzo(a)pyrene.	----
2NR9A (1' - 2')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR10A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	----
NR10B (10" - 12")	benzo(a)pyrene.	----
NR11A (4" - 6")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	CaPAHs.

Table 5-1 (continued)

SVOCs EXCEEDING NYSDEC TAGM 4046 CRITERIA

Soil Sample (Depth)	SVOCs Exceeding NYSDEC TAGM 4046 Criteria	
	Individual SVOCs	Total PAHs and/or CaPAHs
NR11B (10" - 12")	benzo(a)anthracene, chrysene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
2NR11B (2' - 3')	benzo(a)pyrene.	----
NR12A (4" - 6")	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR12B (10" -12")	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR13A (4" - 6")	benzo(a)pyrene.	----
NR13B (10" - 12")	benzo(a)pyrene.	----
NR14A (4" - 6")	benzo(a)pyrene.	----
NR14B (10" - 12")	benzo(a)pyrene.	----
2NR14A (1' - 2')	benzo(a)pyrene.	----
NR15A (4" - 6")	benzo(a)pyrene.	----
NR15B (10" - 12")	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.	CaPAHs.
NR16A (0 - 1')	benzo(a)pyrene.	----
NR16B (1' - 2')	benzo(a)pyrene.	----
NR17A (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR17B (1' - 2')	benzo(a)pyrene.	----
NR17D (3' - 4')	benzo(a)pyrene.	----
NR18A (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR18B (1' - 2')	benzo(a)pyrene.	----
NR18C (2' - 3')	benzo(a)pyrene.	----
NR19A (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h) anthracene	----
NR20A (0 - 1')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR20C (2' - 3')	benzo(a)pyrene.	----
NR20D (3' - 4')	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR21A (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR21C (2' - 3')	benzo(a)pyrene.	----
NR22A (0 - 1')	benzo(a)anthracene and benzo(a)pyrene.	----

Table 5-1 (continued)

SVOCs EXCEEDING NYSDEC TAGM 4046 CRITERIA

Soil Sample (Depth)	SVOCs Exceeding NYSDEC TAGM 4046 Criteria	
	Individual SVOCs	Total PAHs and/or CaPAHs
NR22B (1' - 2')	benzo(a)pyrene.	----
NR22D (3' - 4')	benzo(a)pyrene.	----
NR23A (0 - 1')	benzo(a)anthracene and benzo(a)pyrene.	----
NR30 (0 - 2')	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR33 (0 - 2')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR37 (0 - 2')	benzo(a)pyrene.	----
NR37 (4' - 6')	benzo(a)pyrene.	----
NR42 (0 - 1')	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NR43 (0 - 1')	benzo(a)pyrene.	----
NR46 (0 - 1')	benzo(a)pyrene.	----
NR48 (0 - 1')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR48 (1' - 2')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR51 (0 - 1')	benzo(a)pyrene and dibenzo (a,h) anthracene.	----
NR53 (0 - 1')	benzo(a)pyrene.	----
NR55 (0 - 1')	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR55 (1' - 2')	benzo(a)pyrene.	----
NR57 (1' - 2')	benzo(a)pyrene.	----
NR63 (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR65 (0 - 1')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR66 (0 - 1')	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR66 (1' - 2')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR67 (0 - 1')	benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR67 (1' - 2')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR69 (0 - 1')	benzo(a)pyrene.	----
NR72 (0 - 1')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	CaPAHs.
NR74 (0 - 1')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene and benzo(a)pyrene.	----
NR74 (1' - 2')	benzo(a)pyrene.	----

Table 5-1 (continued)

SVOCs EXCEEDING NYSDEC TAGM 4046 CRITERIA

Soil Sample (Depth)	SVOCs Exceeding NYSDEC TAGM 4046 Criteria	
	Individual SVOCs	Total PAHs and/or CaPAHs
NR77 (0 - 1')	dibenzo(a,h)anthracene.	----
NR77 (1' - 2')	dibenzo(a,h)anthracene.	----
NR78 (0 - 1')	dibenzo(a,h)anthracene.	----
NR78 (1' - 2')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR80 (0 - 1')	benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR80 (1' - 2')	benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NR81 (0 - 1')	benzo(a)pyrene.	----
NR81 (1' - 2')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene.	----
NRSB1A (4" - 6")	benzo(a)anthracene, chrysene and benzo(a)pyrene.	----
NRSB2A (4" - 6")	benzo(a)anthracene and benzo(a)pyrene.	----

5.1.4 Glycols

The results of the surface soil samples analyzed for glycols are presented on Table B-5 in Appendix B. A total of 32 surface soil samples were analyzed for glycols. As indicated on Table B-5, glycols were detected at concentrations ranging from <0.57 mg/kg to 6.48 mg/kg. Although there is no NYSDEC TAGM criteria for glycols (i.e. ethylene glycol and propylene glycol), recent discussions with NYSDEC representatives indicate that a level of 50 mg/kg has been utilized.

5.1.5 Priority Pollutant Metals

The results of the surface and subsurface soil samples analyzed for priority pollutant metals are presented on Table B-6 in Appendix B. A total of 395 soil samples were analyzed for priority pollutant metals. As Table B-6 indicates, priority pollutant metals were detected in all of the 395 soil samples collected.

Several priority pollutant metals were detected in the soil samples at concentrations that exceeded Eastern USA background levels. Table 5-2 presents a summary of the individual metals that were detected at concentrations above the Eastern USA background levels. Additionally, as noted, values for cadmium and chromium were compared to the proposed revised criteria listed in Appendix A of NYSDEC TAGM 4046. As indicated in Table B-6 and Table 5-2, arsenic was detected at concentrations in excess of the Eastern USA background level of 12 mg/kg in 105 of the samples; mercury was detected at concentrations exceeding the Eastern USA background level of 0.2 mg/kg in 50 of the samples; and zinc was found at concentrations in excess of the Eastern USA background level of 50 mg/kg in 45 of the samples. Other metals found less frequently in excess of Eastern USA background levels were chromium (in five samples), copper (in eight samples), lead (in one sample), nickel (in one sample) and selenium (in one sample).

Table 5-2

METALS EXCEEDING EASTERN BACKGROUND CONCENTRATIONS

Soil Sample (Depth)	Individual Metals Exceeding Eastern Background Concentrations*
NRSSE (0 - 3")	arsenic, chromium, copper, mercury and zinc.
NRSSN (0 - 3")	arsenic, mercury and zinc.
NRSSW (0 - 3")	arsenic, mercury and zinc.
NR1A (4" - 6")	arsenic and mercury.
NR1B (10" - 12")	arsenic.
2NR1D (4' - 5')	arsenic.
NR2A (4" - 6")	arsenic and mercury.
CNR2A (4" - 6")	arsenic and mercury.
NR2B (10" - 12")	arsenic and mercury.
CNR2B (10" - 12")	arsenic.
2NR2A (1' - 2')	arsenic.
2NR2B (2' - 3')	arsenic.
NR3A (4" - 6")	arsenic.
CNR3A (4" - 6")	arsenic.
NR3B (10" - 12")	arsenic and mercury.
CNR3B (10" - 12")	arsenic.
2NR3A (1' - 2')	arsenic.
NR4A (4" - 6")	arsenic and mercury.
NR5A (4" - 6")	mercury.
NR6A (4" - 6")	arsenic and mercury.
NR6B (10" - 12")	arsenic and mercury.
2NR6D (4' - 5')	arsenic and mercury.
NR7A (4" - 6")	arsenic, mercury and zinc.
NR7B (10" - 12")	arsenic and mercury.
NR8A (4" - 6")	arsenic, mercury and zinc.
NR8B (10" - 12")	arsenic and mercury.
NR9A (4" - 6")	arsenic and mercury.
NR9B (10" - 12")	arsenic and mercury.
NR10A (4" - 6")	arsenic and zinc.
NR10B (10" - 12")	arsenic and mercury.
NR11A (4" - 6")	arsenic, mercury and zinc.
NR11A-C (4" - 6")	arsenic.
CNR11A (4" - 6")	arsenic and zinc.
NR11B (10" - 12")	arsenic and zinc.

Table 5-2 (continued)

METALS EXCEEDING EASTERN BACKGROUND CONCENTRATIONS

Soil Sample (Depth)	Individual Metals Exceeding Eastern Background Concentrations*
CNR11B (10" - 12")	arsenic and zinc.
2NR11A (1' - 2')	arsenic.
2NR11B (2' - 3')	arsenic.
2NR11D (4' - 5')	mercury.
NR12A (4" - 6")	arsenic and zinc.
NR12B (10" - 12")	arsenic and zinc.
NR13A (4" - 6")	arsenic and mercury.
NR13B (10" - 12")	arsenic.
NR14A (4" - 6")	arsenic and mercury.
CNR14A (4" - 6")	arsenic and mercury.
NR14B (10" - 12")	arsenic and mercury.
CNR14B (10" - 12")	arsenic.
NR15A (4" - 6")	arsenic and mercury.
NR15B (10" - 12")	arsenic.
NR17A (0 - 1')	arsenic and zinc.
NR17B (1' - 2')	zinc.
NR18A (0 - 1')	mercury and zinc.
NR18B (1' - 2')	arsenic and mercury.
NR19A (0 - 1')	arsenic.
NR19B (1' - 2')	arsenic and mercury.
NR20A (0 - 1')	arsenic and mercury.
NR20D (3' - 4')	arsenic and mercury.
NR21A (0 - 1')	arsenic and mercury.
NR21B (1' - 2')	arsenic and mercury.
NR22A (0 - 1')	arsenic and mercury.
NR22B (1' - 2')	arsenic and mercury.
NR22C (2' - 3')	arsenic and mercury.
NR22D (3' - 4')	arsenic and mercury.
NR22 (6' - 8')	arsenic.
NR23C (2' - 3')	arsenic.
NR23D (3' - 4')	arsenic and mercury.
NR24 (2' - 4')	arsenic and mercury.
NR26 (4' - 6')	zinc.
NR27 (8' - 10')	arsenic.

Table 5-2 (continued)

METALS EXCEEDING EASTERN BACKGROUND CONCENTRATIONS

Soil Sample (Depth)	Individual Metals Exceeding Eastern Background Concentrations*
NR30 (0 - 2')	chromium.
NR32 (0 - 2')	arsenic and mercury.
NR33 (0 - 2')	arsenic.
NR33 (0 - 1')	lead, mercury and zinc.
NR34 (0 - 2')	zinc.
NR35 (0 - 2')	arsenic.
NR35 (12' - 14')	nickel and zinc.
NR38 (0 - 2')	arsenic.
NR40 (4' - 6')	arsenic and zinc.
NR42 (0 - 1')	arsenic and mercury.
NR42 (1' - 2')	arsenic and mercury.
NR42 (2' - 4')	arsenic.
NR43 (0 - 1')	arsenic.
NR43 (2' - 4')	arsenic.
NR46 (0 - 1')	arsenic.
NR46 (1' - 2')	arsenic.
NR47 (1' - 2')	arsenic.
NR48 (0 - 1')	arsenic.
NR49 (0 - 1')	arsenic.
NR49 (1' - 2')	arsenic and mercury.
NR50 (1' - 2')	arsenic.
NR51 (0 - 1')	arsenic.
NR51 (1' - 2')	arsenic.
NR53 (0 - 1')	arsenic and mercury.
NR53 (1' - 2')	arsenic.
NR56 (0 - 1')	arsenic and selenium.
NR60 (0 - 1')	arsenic and mercury.
NR60 (1' - 2')	arsenic.
NR60 (2' - 4')	arsenic.
NR61 (0 - 1')	arsenic.
NR62 (0 - 1')	arsenic and zinc.
NR62 (1' - 2')	zinc.
NR62 (2' - 4')	arsenic.
NR63 (0 - 1')	arsenic and zinc.

Table 5-2 (continued)

METALS EXCEEDING EASTERN BACKGROUND CONCENTRATIONS

Soil Sample (Depth)	Individual Metals Exceeding Eastern Background Concentrations*
NR64 (0 - 1')	arsenic and zinc.
NR64 (1' - 2')	arsenic.
NR64 (2' - 4')	arsenic.
NR65 (0 - 1')	arsenic and zinc.
NR65 (1' - 2')	arsenic.
NR66 (0 - 1')	zinc.
NR66 (1' - 2')	copper and zinc.
NR66 (2' - 4')	copper and zinc.
NR67 (1' - 2')	chromium.
NR68 (0 - 1')	arsenic, mercury and zinc.
NR70 (0 - 1')	copper.
NR70 (1' - 2')	copper and zinc.
NR70 (2' - 4')	copper and zinc.
NR74 (0 - 1')	mercury.
NR82 (0 - 1')	arsenic, mercury and zinc.
NR82 (1' - 2')	arsenic and zinc.
NR83 (0 - 1')	arsenic, mercury and zinc.
NR83 (1' - 2')	zinc.
NR84 (0 - 1')	zinc.
NR84 (1' - 2')	zinc.
NR85 (0 - 1')	arsenic, mercury and zinc.
NR86 (0 - 1')	zinc.
NR86 (1' - 2')	zinc.
NR87 (1' - 2')	chromium.
NR88 (0 - 1')	chromium.
NR89 (1' - 2')	copper and zinc.
NR89 (2' - 4')	copper and zinc.
NRSB1A (4" - 6")	arsenic and zinc.
NRSB1A-C (4" - 6")	arsenic.
NRSB2A (4" - 6")	arsenic.
NRSB1 (2' - 4')	mercury and zinc.
NRSB1 (4' - 6')	zinc.

*Values for cadmium and chromium were compared to the proposed revised criteria listed in TAGM 4046.

5.2 Concrete Core Sampling

As previously discussed in Section 4.1.4.2, three concrete core samples were collected from the runway and analyzed for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver), VOCs, SVOCs and pesticides/herbicides by the Toxicity Characteristic Leaching Procedure (TCLP). The analytical results of these concrete core samples are presented on Table B-7 in Appendix B.

As indicated on Table B-7, barium and chromium were detected at concentrations well below the regulatory level in all three concrete core samples. Benzene was detected in concrete core sample NR37 and pyridine and gamma-BHC (Lindane) were detected in concrete core sample NR40 at estimated concentrations that were well below regulatory levels. No other TCLP metal, VOC, SVOC and/or pesticide/herbicide was detected.

Therefore, based on the analyses, the concrete portion of the runway is not considered to be hazardous and could be removed from the site as a nonhazardous material.

5.3 Soil Characterization Sampling

As discussed in Section 4.1.3.3, fifteen surface soil samples were collected around the perimeter of the runway for waste characterization purposes during the Phase 3 Field Program. All fifteen surface soil samples were submitted to the analytical laboratory and composited into a single representative sample and subsequently analyzed for the eight RCRA metals including arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver by TCLP, total PCBs and total petroleum hydrocarbons. Table B-8 in Appendix B presents the results of the soil characterization sample.

As Table B-8 indicates, based on the results of the analyses, the soil is not considered to be hazardous, and can be removed from the site as nonhazardous material.

5.4 Dry Well Soil/Sediment Sampling

As previously discussed in Section 4.2, liquids, sludge and approximately 2 feet of soil/sediment was removed from dry wells NRDW1, NRDW2 and NRDW3 during the Phase II Site Assessment field activities. Liquids were removed from the dry wells and disposed of at the NGC IWTP. Sludge and soil/sediment were contained in 55-gallon drums for proper disposal by NGC. Subsequent to the removal of approximately 2 feet of soil from the bottom of each dry well, two endpoint soil/sediment samples were collected at depths of 0 to 2 feet and 2 feet to 4 feet from the bottom of each dry well. A total of six soil/sediment samples were collected and analyzed for the VOCs and SVOCs listed in STARS Table 2, glycols and priority pollutant metals. The analytical results are presented on Tables B-9 through B-12 in Appendix B.

5.4.1 Volatile Organic Compounds

The results of the dry well endpoint soil/sediment samples analyzed for STARS Table 2 VOCs are presented on Table B-9. Six soil/sediment samples were analyzed for STARS Table 2 VOCs. As indicated in Table B-9, three VOCs were detected in soil sample NRDW1 (0-2'). However, the estimated concentrations detected were well below the NYSDEC TAGM criteria.

5.4.2 Semivolatile Organic Compounds

The results of the dry well endpoint soil/sediment samples analyzed for STARS Table 2 SVOCs are presented on Table B-10. Six sediment/soil samples were collected and analyzed for STARS Table 2 SVOCs. As indicated on Table B-10, several SVOCs were detected in soil/sediment samples NRDW1 (0-2'), NRDW1 (2'-4'), NRDW2 (0-2') and NRDW2 (2'-4'). However, many of the SVOCs were detected at concentrations that were below the NYSDEC TAGM criteria.

The following SVOCs were detected at levels that exceeded the individual NYSDEC TAGM criteria:

Soil Samples	SVOCs
NRDW1 (0'-2')	benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene.
NRDW1 (2'-4')	benzo(a)anthracene, chrysene and benzo(a)pyrene.
NRDW2 (0'-2')	benzo(a)pyrene.

However, it should be noted that the total concentrations of PAHs and CaPAHs in the samples did not exceed the NYSDEC TAGM criteria for total PAHs and total CaPAHs.

5.4.3 Glycols

The results of the dry well endpoint soil/sediment samples analyzed for glycols are presented on Table B-11. Six soil/sediment samples were analyzed for glycols. As indicated on Table B-11, glycols were detected at concentrations ranging from <0.61 mg/kg to 2.59 mg/kg. Although there is no NYSDEC TAGM criteria for glycols (i.e. ethylene glycol and propylene glycol), recent discussions with NYSDEC representatives indicate that a level of 50 mg/kg has been utilized.

5.4.4 Priority Pollutant Metals

The results of the dry well endpoint soil/sediment samples analyzed for priority pollutant metals are presented on Table B-12. Six soil/sediment samples were analyzed for priority pollutant metals. As Table B-12 indicates, priority pollutant metals were detected in all six dry well soil/sediment samples. However, none of the priority pollutant metals were detected in samples at concentrations in excess of the Eastern USA background levels, with the exception of sample NRDW1 (0'-2').

Six priority pollutant metals, including arsenic, cadmium, chromium, lead, mercury and zinc were detected in soil/sediment sample NRDW1 (0'-2') at concentrations that exceeded

Eastern USA background levels. However, cadmium and chromium were not detected at concentrations in excess of the proposed revised criteria in NYSDEC TAGM 4046.

5.5 Data Validation

Environmental samples were collected from the North Runway - Parcel L1 site during several field investigations conducted from May 1996 through October 1996. The samples were analyzed for a variety of parameters depending upon sample location. The parameters included (VOCs), (SVOCs), priority pollutant metals, glycols, total petroleum hydrocarbons, fuel-related constituents, PCBs and Toxicity Characteristic Leaching Procedure (TCLP) metals, VOCs, SVOCs and pesticides/herbicides. Analyses were performed by three laboratories: IEA, Inc. - New Jersey; IEA, Inc., - Connecticut; and Nytest Environmental, Inc. (NEI), all subcontractors to D&B Environmental Services, Inc. (D&BES).

Validation was performed on 20 percent of the sample data and all quality control data (i.e., standards, calibrations, etc.) yielding a "20% validation." The validation process was in accordance with NYSDEC quality assurance/quality control (QA/QC) requirements. Sample analysis was performed in accordance with USEPA SW846 methodologies while adhering to NYSDEC Analytical Services Protocol (ASP) QA/QC requirements. Matrix spike and matrix spike duplicates were analyzed at the appropriate frequency.

Sample analysis was performed in accordance with the specified method and within the required holding times.

Instrument calibrations (initial and continuing) were analyzed at the appropriate frequency and met QC requirements.

All data is deemed valid and usable for environmental assessment.

Section 6

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the findings of the Phase II Site Assessment field programs discussed in Section 5.0, conclusions are presented in this section, and recommendations are provided regarding remedial actions at the North Runway - Parcel L1 site.

In support of providing conclusions and technical recommendations with regard to the level and degree to which remediation of the property is required, we have relied on the revised Technical and Administrative Guidance Memorandum (TAGM) No. 4046 - Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994 published by the New York State Department of Environmental Conservation (NYSDEC).

As discussed in the introduction of the TAGM, the document is designed to provide a technical basis for NYSDEC Project Managers at "... individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites..." to determine soil cleanup levels. The TAGM provides a number of methods to determine the degree to which these properties are cleaned up including published recommended soil cleanup objectives (NYSDEC TAGM criteria) and Eastern USA background concentrations.

The North Runway - Parcel L1 property is not a Federal Superfund or State Superfund site nor is it an RP or 1986 EQBA Title 3 property. In addition, the Phase I Site Assessment did not identify any industrial or process operations being conducted at the property in the past that would have required permitted or unpermitted discharges.

Accordingly, we believe it is reasonable to establish the Eastern USA background levels for metals as presented in the TAGM for the purpose of initial comparison, and as the cleanup levels for the principal metals of concern (i.e. arsenic and mercury) across the site. In addition, for evaluating chromium (as well as other metals that were not the principal metals of concern) for the purpose of potential remediation, the soil screening levels published by the United States

Environmental Protection Agency (USEPA) were utilized for both species of chromium (III and VI), as well as for total chromium.

In the absence of published Eastern USA background levels, such as is the case for volatile organic compounds and semivolatile organic compounds, we have elected to utilize the NYSDEC TAGM criteria for these compounds for the purposes of comparison and potential remediation at the site.

6.1 Surface and Subsurface Soil Sampling

Conclusions

As discussed in Section 5.1, a five-phased field program was conducted as part of the Phase II Site Assessment. Surface and subsurface soil samples were collected and analyzed for volatile organic compounds, semivolatile organic compounds, fuel-related constituents, glycols and priority pollutant metals. The analytical results of the surface and subsurface soil samples indicated that none of the samples contained VOCs at levels exceeding the NYSDEC TAGM criteria. However, several SVOCs were detected at concentrations that exceeded the NYSDEC TAGM criteria, and TPHCs were found to be associated with fuel-related constituents identified as 10W40 motor oil. Glycols were also detected in surface soil samples; however, the levels of glycols detected were not in excess of the acceptable limit utilized by NYSDEC. Most importantly, several priority pollutant metals were detected at concentrations that exceeded Eastern USA background levels.

The SVOCs detected in the surface and subsurface soil samples at concentrations exceeding the NYSDEC TAGM criteria were polycyclic aromatic hydrocarbons (PAHs) and carcinogenic PAHs (CaPAHs). The CaPAHs include benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene. The priority pollutant metals detected in the surface and subsurface soil samples at

concentrations exceeding the Eastern USA background levels or proposed revised TAGM criteria included arsenic, chromium, copper, lead, mercury, nickel, selenium and zinc.

In order to understand the horizontal and vertical extent of impacted soil across the site, Table 6-1 presents a matrix of exceedances, by sample location, including the depth at which each sample was collected and the groups of constituents of concern including total PAHs, total CaPAHs and priority pollutant metals that were detected at concentrations that exceeded the NYSDEC TAGM criteria for PAHs and CaPAHs, Eastern USA background levels for priority pollutant metals and proposed revised NYSDEC TAGM criteria for cadmium and chromium.

As Table 6-1 indicates, total PAHs were detected above the NYSDEC TAGM criteria in soil samples NRSSE (0-3"), NRSSN (0-3"), NR3 (4"-6") and NR5 (4"-6"). In addition, total CaPAHs were detected above the NYSDEC TAGM criteria in soil samples NRSSE (0-3"), NRSSN (0-3") and NRSSW (0-3"), NR1 (4"-6", 10"-12" and 4'-5'), NR3 (4"-6", 10"-12" and 2'-3'), NR5 (4"-6" and 10"-12"), NR7 (4"-6"), NR8 (4"-6"), NR11 (4"-6"), NR15 (10"-12") and NR72 (0-1').

The priority pollutant metals detected at concentrations exceeding Eastern USA background levels include arsenic, chromium, copper, lead, mercury, nickel, selenium and zinc. As Table 6-1 indicates, arsenic, mercury and zinc appear to be the most common contaminants of concern found at the site at concentrations exceeding Eastern USA background levels. Whereas, the presence and exceedances for chromium, copper, lead, nickel and selenium appear to be isolated and are not uniform or continuous in nature. Accordingly, arsenic, mercury and/or zinc were detected at concentrations exceeding Eastern USA background levels at the following depths and corresponding sample locations:

Sample Depth	Sample Location
0 to 3"	NRSSE, NRSSN and NRSSW.
4" to 6"	NR1 through NR15, NRSB1 and NRSB2.
10" to 12"	NR1, NR2, NR3 and NR6 through NR15.

Table 6-1

MATRIX OF EXCEEDANCES

Sample Location	Sample Depth	Total PAHs	Total CaPAHs	As	Cr	Cu	Pb	Hg	Ni	Se	Zn
NRSSE	0-3"	■	■	■	■	■	--	■	--	--	■
NRSSN	0-3"	■	■	■	--	--	--	■	--	--	■
NRSSW	0-3"	--	■	■	--	--	--	■	--	--	■
NR1	4"-6"	--	■	■	--	--	--	■	--	--	--
	10"-12"	--	■	■	--	--	--	--	--	--	--
	4'-5'	--	■	■	--	--	--	--	--	--	--
NR2	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	--	■	--	--	--	■	--	--	--
	1'-2"	--	--	■	--	--	--	--	--	--	--
	2'-3'	--	--	■	--	--	--	--	--	--	--
NR3	4"-6"	■	■	■	--	--	--	--	--	--	--
	10"-12"	--	■	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	--	--	--	--
	2'-3'	--	■	--	--	--	--	--	--	--	--
NR4	4"-6"	--	--	■	--	--	--	■	--	--	--
NR5	4"-6"	■	■	--	--	--	--	■	--	--	--
	10"-12"	--	■	--	--	--	--	--	--	--	--
NR6	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	--	■	--	--	--	■	--	--	--
	4'-5'	--	--	■	--	--	--	■	--	--	--
NR7	4"-6"	--	■	■	--	--	--	■	--	--	■
	10"-12"	--	--	■	--	--	--	■	--	--	--
NR8	4"-6"	--	■	■	--	--	--	■	--	--	■
	10"-12"	--	--	■	--	--	--	■	--	--	--
NR9	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	--	■	--	--	--	■	--	--	--
NR10	4"-6"	--	--	■	--	--	--	--	--	--	■
	10"-12"	--	--	■	--	--	--	■	--	--	--
NR11	4"-6"	--	■	■	--	--	--	■	--	--	■
	10"-12"	--	--	■	--	--	--	--	--	--	■
	1'-2'	--	--	■	--	--	--	--	--	--	--
	2'-3'	--	--	■	--	--	--	--	--	--	--
	4'-5'	--	--	--	--	--	--	■	--	--	--
NR12	4"-6"	--	--	■	--	--	--	--	--	--	■
	10"-12"	--	--	■	--	--	--	--	--	--	■
NR13	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	--	■	--	--	--	--	--	--	--
NR14	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	--	■	--	--	--	■	--	--	--
NR15	4"-6"	--	--	■	--	--	--	■	--	--	--
	10"-12"	--	■	■	--	--	--	--	--	--	--
NR17	0-1'	--	--	■	--	--	--	--	--	--	■
	1'-2'	--	--	--	--	--	--	--	--	--	■

Table 6-1 (continued)

MATRIX OF EXCEEDANCES

Sample Location	Sample Depth	Total PAHs	Total CaPAHs	As	Cr	Cu	Pb	Hg	Ni	Se	Zn
NR18	0-1'	--	--	--	--	--	--	■	--	--	■
	1'-2'	--	--	■	--	--	--	■	--	--	--
NR19	0-1'	--	--	■	--	--	--	--	--	--	--
	1'-2'	--	--	■	--	--	--	■	--	--	--
NR20	0-1'	--	--	■	--	--	--	■	--	--	--
	3'-4'	--	--	■	--	--	--	■	--	--	--
NR21	0-1'	--	--	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	■	--	--	--
NR22	0-1'	--	--	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	■	--	--	--
	2'-3'	--	--	■	--	--	--	■	--	--	--
	3'-4'	--	--	■	--	--	--	■	--	--	--
	6'-8'	--	--	■	--	--	--	--	--	--	--
NR23	2'-3'	--	--	■	--	--	--	--	--	--	--
	3'-4'	--	--	■	--	--	--	■	--	--	--
NR24	2'-4'	--	--	■	--	--	--	■	--	--	--
NR26	4'-6'	--	--	--	--	--	--	--	--	--	■
NR27	8'-10'	--	--	■	--	--	--	--	--	--	--
NR30	0-2'	--	--	--	■	--	--	--	--	--	--
NR32	0-2'	--	--	■	--	--	--	■	--	--	--
NR33	0-1'	--	--	--	--	--	■	■	--	--	■
	0-2'	--	--	■	--	--	--	--	--	--	--
NR34	0-2'	--	--	--	--	--	--	--	--	--	■
NR35	0-2'	--	--	■	--	--	--	--	--	--	--
	12'-14'	--	--	--	--	--	--	--	■	--	■
NR38	0-2'	--	--	■	--	--	--	--	--	--	--
NR40	4'-6'	--	--	■	--	--	--	--	--	--	■
NR42	0-1'	--	--	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	■	--	--	--
	2'-4'	--	--	■	--	--	--	--	--	--	--
NR43	0-1'	--	--	■	--	--	--	--	--	--	--
	1'-2'	--	--	■	--	--	--	--	--	--	--
NR46	0-1'	--	--	■	--	--	--	--	--	--	--
	2'-4'	--	--	■	--	--	--	--	--	--	--
NR47	1'-2'	--	--	■	--	--	--	--	--	--	--
NR48	0-1'	--	--	■	--	--	--	--	--	--	--
NR49	0-1'	--	--	■	--	--	--	--	--	--	--
	1'-2'	--	--	■	--	--	--	■	--	--	--
NR50	1'-2'	--	--	■	--	--	--	--	--	--	--
NR51	0-1'	--	--	■	--	--	--	--	--	--	--
	1'-2'	--	--	■	--	--	--	--	--	--	--
NR53	0-1'	--	--	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	--	--	--	--
NR56	0-1'	--	--	■	--	--	--	--	--	■	--

Table 6-1 (continued)

MATRIX OF EXCEEDANCES

Sample Location	Sample Depth	Total PAHs	Total CaPAHs	As	Cr	Cu	Pb	Hg	Ni	Se	Zn
NR60	0-1'	--	--	■	--	--	--	■	--	--	--
	1'-2'	--	--	■	--	--	--	--	--	--	--
	2'-4'	--	--	■	--	--	--	--	--	--	--
NR61	0-1'	--	--	■	--	--	--	--	--	--	--
NR62	0-1'	--	--	■	--	--	--	--	--	--	■
	1'-2'	--	--	--	--	--	--	--	--	--	■
	2'-4'	--	--	■	--	--	--	--	--	--	--
NR63	0-1'	--	--	■	--	--	--	--	--	--	■
NR64	0-1'	--	--	■	--	--	--	--	--	--	■
	1'-2'	--	--	■	--	--	--	--	--	--	--
	2'-4'	--	--	■	--	--	--	--	--	--	--
NR65	0-1'	--	--	■	--	--	--	--	--	--	■
	1'-2'	--	--	■	--	--	--	--	--	--	--
NR66	0-1'	--	--	--	--	--	--	--	--	--	■
	1'-2'	--	--	--	--	■	--	--	--	--	■
	2'-4'	--	--	--	--	■	--	--	--	--	■
NR67	1'-2'	--	--	--	■	--	--	--	--	--	--
NR68	0-1'	--	--	■	--	--	--	■	--	--	■
NR70	0-1'	--	--	--	--	■	--	--	--	--	--
	1'-2'	--	--	--	--	■	--	--	--	--	■
	2'-4'	--	--	--	--	■	--	--	--	--	■
NR72	0-1'	--	■	--	--	--	--	--	--	--	--
NR74	0-1'	--	--	--	--	--	--	■	--	--	--
NR82	0-1'	--	--	■	--	--	--	■	--	--	■
	1'-2'	--	--	■	--	--	--	--	--	--	■
NR83	0-1'	--	--	■	--	--	--	■	--	--	■
	1'-2'	--	--	--	--	--	--	--	--	--	■
NR84	0-1'	--	--	--	--	--	--	--	--	--	■
	1'-2'	--	--	--	--	--	--	--	--	--	■
NR85	0-1'	--	--	■	--	--	--	■	--	--	■
NR86	0-1'	--	--	--	--	--	--	--	--	--	■
	1'-2'	--	--	--	--	--	--	--	--	--	■
NR87	1'-2'	--	--	--	■	--	--	--	--	--	--
NR88	0-1'	--	--	--	■	--	--	--	--	--	--
NR89	1'-2'	--	--	--	--	■	--	--	--	--	■
	2'-4'	--	--	--	--	■	--	--	--	--	■
NRSB1	4"-6"	--	--	■	--	--	--	--	--	--	■
	2'-4'	--	--	--	--	--	--	■	--	--	■
	4'-6'	--	--	--	--	--	--	--	--	--	■
NRSB2	4"-6"	--	--	■	--	--	--	--	--	--	--

Sample Depth	Sample Location
0 to 1 ft.	NR17 through NR22, NR33, NR42, NR43, NR46, NR48, NR49, NR51, NR53, NR56, NR60 through NR66, NR68, NR74, NR82 through NR86 and NR88.
1 ft. to 2 ft.	NR2, NR3, NR11, NR17, NR18, NR19, NR21, NR22, NR42, NR46, NR47, NR49, NR50, NR51, NR53, NR60, NR62, NR64, NR65, NR66, NR70, NR82, NR83, NR84, NR86 and NR89.
0 to 2 ft.	NR32 through NR35 and NR38.
2 ft. to 3 ft.	NR2, NR11, NR22 and NR23.
3 ft. to 4 ft.	NR20, NR22 and NR23.
2 ft. to 4 ft.	NR24, NR42, NR43, NR60, NR62, NR64, NR66, NR70, NR89 and NRSB1.
4 ft. to 5 ft.	NR1, NR6 and NR11.
4 ft. to 6 ft.	NR26, NR40 and NRSB1.
6 ft. to 8 ft.	NR22
8 ft. to 10 ft.	NR27
12 ft. to 14 ft.	NR35

As indicated above, a majority of the arsenic, mercury and/or zinc exceedances were observed in the soil samples collected from 0 to 4 feet below grade. However, arsenic, mercury and/or zinc exceedances were also detected in soil samples collected greater than 4 feet below grade at sample locations NR1, NR6, NR11, NR22, NR26, NR27, NR35, NR40 and NRSB1. Accordingly, arsenic exceedances were detected in samples NR1 (4'-5'), NR6 (4'-5'), NR22 (6'-8'), NR27 (8'-10') and NR40 (4'-6'); mercury exceedances in samples NR6 (4'-5') and NR11 (4'-5'); and zinc exceedances in samples NR26 (4'-6'), NR35 (12'-14'), NR40 (4'-6') and NRSB1 (4'-6').

However, the exceedances for arsenic, mercury and zinc at depths greater than 4 feet all appear to be isolated. The exceedances for arsenic in samples NR1 (4'-5'), NR6 (4'-5') and

NR27 (8'-10'), and mercury in samples NR6 (4'-5') and NR11 (4'-5') appear to be isolated since the soil samples from at least three sample intervals directly above these samples did not contain levels of arsenic or mercury in excess of the Eastern USA background level for these metals. Also, the exceedance for arsenic in sample NR22 (6'-8') appears to be isolated since the soil sample from the interval directly above this sample did not contain arsenic at a concentration in excess of the Eastern USA background level and the concentration found at 6'-8' was only slightly above this background level. In addition, the exceedance for arsenic in sample NR40 (4'-6') also appears to be isolated since the sample intervals directly above and below 4'-6' did not contain levels of arsenic in excess of the Eastern USA background level. The exceedance for zinc in sample NR26 (4'-6') appears to be isolated since the soil samples from the two sample intervals above 4'-6' and the five intervals below 4'-6' do not contain zinc at concentrations exceeding the Eastern USA background level for this metal. For sample NR35 (12'-14'), zinc is not present at concentrations exceeding the Eastern USA background level in the four sample intervals above 12'-14'. For NR40 (4'-6'), zinc is not detected at a concentration in excess of the Eastern USA background level in the sample intervals directly above and below 4'-6'. Furthermore, it is important to note that zinc is not listed as a hazardous constituent in Appendix 23 of 6NYCRR Part 371.

Recommendations

Based upon the analytical results of the surface and subsurface soil samples collected during the Phase II Site Assessment field programs, it has been determined that CaPAHs, PAHs and arsenic and mercury (and zinc to a limited extent) are the primary contaminants of concern found at the site. Therefore, soil remediation is recommended at the North Runway - Parcel L1 site.

Figure 6-1 presents the areas where soil remediation is recommended across the entire site by utilizing 50 foot by 50 foot quadrants. A 50 foot by 50 foot grid was developed in order to provide a reasonable and conservative approach to delineating areas where soil remediation would be necessary and facilitating complete coverage of the site.

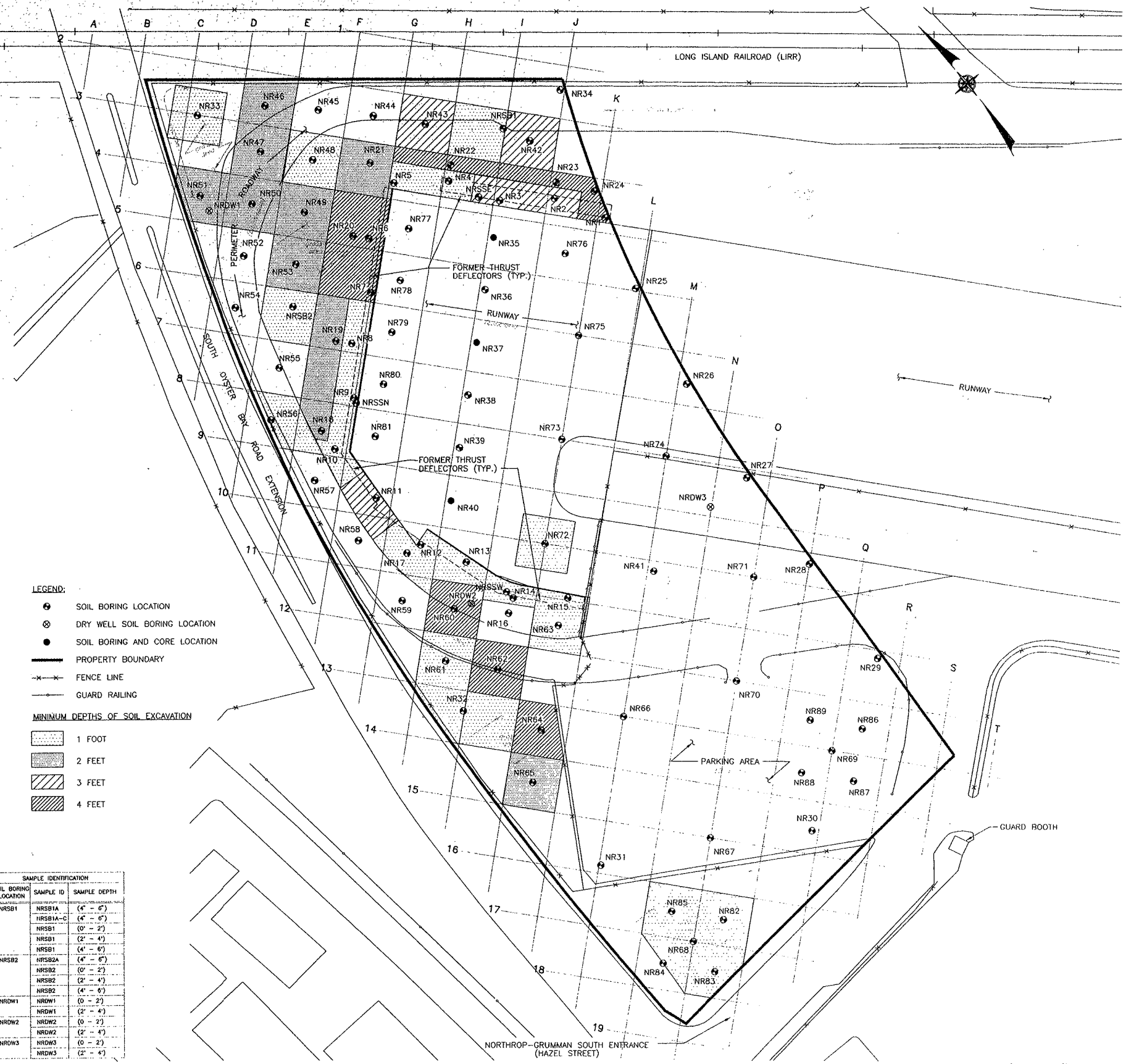
SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NRSSE	NRSSE	(0 – 3')
NRSSN	NRSSN	(0 – 3')
NRSSW	NRSSW	(0 – 3')
NR1	NR1A	(4' – 6')
	NR1B	(10' – 12')
	2NR1A	(1' – 2')
	2NR1B	(2' – 3')
	2NR1C	(3' – 4')
	2NR1D	(4' – 5')
NR2	NR2A	(4' – 6')
	NR2B	(10' – 12')
	CNR2A	(4' – 6')
	CNR2B	(10' – 12')
	2NR2A	(1' – 2')
	2NR2B	(2' – 3')
	2NR2C	(3' – 4')
	2NR2D	(4' – 5')
NR3	NR3A	(4' – 6')
	NR3B	(10' – 12')
	CNR3A	(4' – 6')
	CNR3B	(10' – 12')
	2NR3A	(1' – 2')
	2NR3B	(2' – 3')
	2NR3C	(3' – 4')
	2NR3D	(4' – 5')
NR4	NR4A	(4' – 6')
	NR4B	(10' – 12')
NR5	NR5A	(4' – 6')
	NR5B	(10' – 12')
	2NR5A	(1' – 2')
	2NR5B	(2' – 3')
	2NR5C	(3' – 4')
	2NR5D	(4' – 5')
NR6	NR6A	(4' – 6')
	NR6B	(10' – 12')
	2NR6A	(1' – 2')
	2NR6B	(2' – 3')
	2NR6C	(3' – 4')
	2NR6D	(4' – 5')
NR7	NR7A	(4' – 6')
	NR7B	(10' – 12')
NR8	NR8A	(4' – 6')
	NR8B	(10' – 12')
NR9	NR9A	(4' – 6')
	NR9B	(10' – 12')
	2NR9A	(1' – 2')
	2NR9B	(2' – 3')
	2NR9C	(3' – 4')
	2NR9D	(4' – 5')
NR10	NR10A	(4' – 6')
	NR10B	(10' – 12')
NR11	NR11A	(4' – 6')
	NR11A–C	(4' – 6')
	NR11B	(10' – 12')
	CNR11A	(4' – 6')
	CNR11B	(10' – 12')
	2NR11A	(1' – 2')
	2NR11B	(2' – 3')
	2NR11C	(3' – 4')
	2NR11D	(4' – 5')
	NR11	(4' – 6')
	NR11	(6' – 8')
	NR11	(8' – 10')
	NR11	(10' – 12')
NR12	NR12A	(4' – 6')
	NR12B	(10' – 12')
NR13	NR13A	(4' – 6')
	NR13B	(10' – 12')
NR14	NR14A	(4' – 6')
	NR14B	(10' – 12')
	CNR14A	(4' – 6')
	CNR14B	(10' – 12')
	2NR14A	(1' – 2')
	2NR14B	(2' – 3')
	2NR14C	(3' – 4')
	2NR14D	(4' – 5')
NR15	NR15A	(4' – 6')
	NR15B	(10' – 12')
NR16	NR16A	(0 – 1')
	NR16B	(1' – 2')
	NR16C	(2' – 3')
	NR16D	(3' – 4')
NR17	NR17A	(0 – 1')
	NR17B	(1' – 2')
	NR17C	(2' – 3')
	NR17D	(3' – 4')
NR18	NR18A	(0 – 1')
	NR18B	(1' – 2')
	NR18C	(2' – 3')
	NR18D	(3' – 4')
NR19	NR19A	(0 – 1')
	NR19B	(1' – 2')
	NR19C	(2' – 3')
	NR19D	(3' – 4')
	NR19	(4' – 6')
	NR19	(6' – 8')
	NR19	(8' – 10')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR20	NR20A	(0 – 1')
	NR20B	(1' – 2')
	NR20C	(2' – 3')
	NR20D	(3' – 4')
NR21	NR21A	(0 – 1')
	NR21B	(1' – 2')
	NR21C	(2' – 3')
	NR21D	(3' – 4')
	NR21	(4' – 6')
	NR21	(7' – 9')
	NR21	(9' – 11')
NR22	NR22A	(0 – 1')
	NR22B	(1' – 2')
	NR22C	(2' – 3')
	NR22D	(3' – 4')
	NR22	(4' – 6')
	NR22	(6' – 8')
	NR22	(10' – 12')
	NR22	(12' – 14')
NR23	NR23A	(0' – 1')
	NR23B	(1' – 2')
	NR23C	(2' – 3')
	NR23D	(3' – 4')
	NR23	(4' – 6')
	NR23	(6' – 8')
	NR23	(10' – 12')
NR24	NR24	(0 – 2')
	NR24	(2' – 4')
	NR24	(4' – 6')
	NR24	(6' – 8')
	NR24	(8' – 10')
	NR24	(10' – 12')
	NR24	(12' – 14')
	NR24	(14' – 16')
NR25	NR25	(0 – 2')
	NR25	(4' – 6')
	NR25	(8' – 10')
	NR25	(14' – 16')
NR26	NR26	(0 – 2')
	NR26	(2' – 4')
	NR26	(4' – 6')
	NR26	(6' – 8')
	NR26	(8' – 10')
	NR26	(10' – 12')
	NR26	(12' – 14')
	NR26	(14' – 16')
NR27	NR27	(0 – 2')
	NR27	(2' – 4')
	NR27	(4' – 6')
	NR27	(6' – 8')
	NR27	(8' – 10')
	NR27	(10' – 12')
	NR27	(12' – 14')
NR28	NR28	(0 – 2')
	NR28	(2' – 4')
	NR28	(4' – 6')
	NR28	(6' – 8')
	NR28	(8' – 10')
	NR28	(10' – 12')
	NR28	(12' – 14')
NR29	NR29	(0 – 2')
	NR29	(4' – 6')
	NR29	(10' – 12')
NR30	NR30	(0 – 2')
	NR30	(2' – 4')
	NR30	(4' – 6')
NR31	NR31	(0 – 2')
	NR31	(2' – 4')
	NR31	(4' – 6')
NR32	NR32	(0 – 1')
	NR32	(1' – 2')
	NR32	(0 – 2')
	NR32	(2' – 4')
	NR32	(4' – 6')
	NR32	(6' – 8')
	NR32	(8' – 10')
NR33	NR33	(0 – 1')
	NR33	(1' – 2')
	NR33	(0 – 2')
	NR33	(2' – 4')
	NR33	(4' – 6')
NR34	NR34	(0 – 2')
	NR34	(2' – 4')
	NR34	(4' – 6')
NR35	NR35	CORE
	NR35	(0 – 1')
	NR35	(1' – 2')
	NR35	(0 – 2')
	NR35	(4' – 6')
	NR35	(8' – 10')
	NR35	(12' – 14')
NR36	NR36	(0 – 2')
	NR36	(4' – 6')
	NR36	(8' – 10')
	NR36	(12' – 14')
NR37	NR37	CORE
	NR37	(0 – 2')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR37	NR37	(2' – 4')
	NR37	(4' – 6')
	NR37	(6' – 8')
	NR37	(8' – 10')
	NR37	(10' – 12')
	NR37	(12' – 14')
NR38	NR38	(0 – 1')
	NR38	(1' – 2')
	NR38	(0 – 2')
	NR38	(4' – 6')
	NR38	(8' – 10')
	NR38	(12' – 14')
NR39	NR39	(0 – 2')
	NR39	(4' – 6')
	NR39	(8' – 10')
	NR39	(12' – 14')
NR40	NR40	CORE
	NR40	(0 – 2')
	NR40	(4' – 6')
	NR40	(8' – 10')
	NR40	(12' – 14')
NR41	NR41	(0 – 2')
	NR41	(2' – 4')
	NR41	(4' – 6')
	NR41	(6' – 8')
	NR41	(8' – 10')
	NR41	(10' – 12')
	NR41	(12' – 14')
NR42	NR42	(0 – 1')
	NR42	(1' – 2')
	NR42	(2' – 4')
	NR42	(4' – 6')
NR43	NR43	(0 – 1')
	NR43	(1' – 2')
	NR43	(2' – 4')
	NR43	(4' – 6')
NR44	NR44	(0 – 1')
	NR44	(1' – 2')
	NR44	(2' – 4')
	NR44	(4' – 6')
NR45	NR45	(0 – 1')
	NR45	(1' – 2')
	NR45	(2' – 4')
NR46	NR46	(0 – 1')
	NR46	(1' – 2')
	NR46	(2' – 4')
NR47	NR47	(0 – 1')
	NR47	(1' – 2')
	NR47	(2' – 4')
NR48	NR48	(0 – 1')
	NR48	(1' – 2')
	NR48	(2' – 4')
	NR48	(4' – 6')
NR49	NR49	(0 – 1')
	NR49	(1' – 2')
	NR49	(2' – 4')
	NR49	(4' – 6')
NR50	NR50	(0 – 1')
	NR50	(1' – 2')
	NR50	(2' – 4')
NR51	NR51	(0 – 1')
	NR51	(1' – 2')
	NR51	(2' – 4')
NR52	NR52	(0 – 1')
	NR52	(1' – 2')
	NR52	(2' – 4')
NR53	NR53	(0 – 1')
	NR53	(1' – 2')
	NR53	(2' – 4')
	NR53	(4' – 6')
NR54	NR54	(0 – 1')
	NR54	(1' – 2')
	NR54	(2' – 4')
NR55	NR55	(0 – 1')
	NR55	(1' – 2')
	NR55	(2' – 4')
NR56	NR56	(0 – 1')
	NR56	(1' – 2')
	NR56	(2' – 4')
NR57	NR57	(0 – 1')
	NR57	(1' – 2')
	NR57	(2' – 4')
	NR57	(4' – 8')
NR58	NR58	(0 – 1')
	NR58	(1' – 2')
	NR58	(2' – 4')
	NR58	(4' – 8')
NR59	NR59	(0 – 1')
	NR59	(1' – 2')
	NR59	(2' – 4')
NR60	NR60	(0 – 1')
	NR60	(1' – 2')
	NR60	(2' – 4')
NR61	NR61	(0 – 1')
	NR61	(1' – 2')
	NR61	(2' – 4')
NR62	NR62	(0 – 1')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NR62	NR62	(1' – 2')
	NR62	(2' – 4')
NR63	NR63	(0 – 1')
	NR63	(1' – 2')
	NR63	(2' – 4')
NR64	NR64	(0 – 1')
	NR64	(1' – 2')
	NR64	(2' – 4')
NR65	NR65	(0 – 1')
	NR65	(1' – 2')
	NR65	(2' – 4')
NR66	NR66	(0 – 1')
	NR66	(1' – 2')
	NR66	(2' – 4')
NR67	NR67	(0 – 1')
	NR67	(1' – 2')
	NR67	(2' – 4')
NR68	NR68	(0 – 1')
	NR68	(1' – 2')
	NR68	(2' – 4')
NR69	NR69	(0 – 1')
	NR69	(1' – 2')
	NR69	(2' – 4')
NR70	NR70	(0 – 1')
	NR70	(1' – 2')
	NR70	(2' – 4')
NR71	NR71	(0 – 1')
	NR71	(1' – 2')
	NR71	(2' – 4')
NR72	NR72	(0 – 1')
	NR72	(1' – 2')
	NR72	(2' – 4')
	NR72	(4' – 6')
NR73	NR73	(0 – 1')
	NR73	(1' – 2')
	NR73	(2' – 4')
NR74	NR74	(0 – 1')
	NR74	(1' – 2')
	NR74	(2' – 4')
NR75	NR75	(0 – 1')
	NR75	(1' – 2')
	NR75	(2' – 4')
NR76	NR76	(0 – 1')
	NR76	(1' – 2')
	NR76	(2' – 4')
	NR76	(4' – 6')
NR77	NR77	(0 – 1')
	NR77	(1' – 2')
	NR77	(2' – 4')
	NR77	(4' – 6')
NR78	NR78	(0 – 1')
	NR78	(1' – 2')
	NR78	(2' – 4')
	NR78	(4' – 6')
NR79	NR79	(0 – 1')
	NR79	(1' – 2')
	NR79	(2' – 4')
	NR79	(4' – 6')
NR80	NR80	(0 – 1')
	NR80	(1' – 2')
	NR80	(2' – 4')
	NR80	(4' – 6')
NR81	NR81	(0 – 1')
	NR81	(1' – 2')
	NR81	(2' – 4')
	NR81	(4' – 6')
NR82	NR82	(0 – 1')
	NR82	(1' – 2')
	NR82	(2' – 4')
NR83	NR83	(0 – 1')
	NR83	(1' – 2')
	NR83	(2' – 4')
NR84	NR84	(0 – 1')
	NR84	(1' – 2')
	NR84	(2' – 4')
NR85	NR85	(0 – 1')
	NR85	(1' – 2')
	NR85	(2' – 4')
NR86	NR86	(0 – 1')
	NR86	(1' – 2')
	NR86	(2' – 4')
NR87	NR87	(0 – 1')
	NR87	(1' – 2')
	NR87	(2' – 4')
NR88	NR88	(0 – 1')
	NR88	(1' – 2')
	NR88	(2' – 4')
NR89	NR89	(0 – 1')
	NR89	(1' – 2')
	NR89	(2' – 4')

SAMPLE IDENTIFICATION		
SOIL BORING LOCATION	SAMPLE ID	SAMPLE DEPTH
NRSB1	NRSB1A	(4' – 6')
	NRSB1A–C	(4' – 6')
	NRSB1	(0' – 2')
	NRSB1	(2' – 4')
	NRSB1	(4' – 6')
NRSB2	NRSB2A	(4' – 6')
	NRSB2	(0' – 2')
	NRSB2	(2' – 4')
	NRSB2	(4' – 6')
NRDW1	NRDW1	(0 – 2')
	NRDW1	(2' – 4')
NRDW2	NRDW2	(0 – 2')
	NRDW2	(2' – 4')
NRDW3	NRDW3	(0 – 2')
	NRDW3	(2' – 4')



LEGEND:

- SOIL BORING LOCATION
- DRY WELL SOIL BORING LOCATION
- SOIL BORING AND CORE LOCATION
- PROPERTY BOUNDARY
- FENCE LINE
- GUARD RAILING

MINIMUM DEPTHS OF SOIL EXCAVATION

- 1 FOOT
- 2 FEETS
- 3 FEETS
- 4 FEETS

SCALE IN FEET: 0 50 100

DIRECTORY: 1383
FILE NAME: 1383-06
DATE: RDS-01/15/97

NO.	DATE	REMARK	INT.

PROJECT ENGINEER:	DRAWN BY:
E.K.	R.S.
DESIGNED BY:	CHECKED BY:
EK/M.R.	M.R.

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK

NORTH RUNWAY – PARCEL L1
AREAS OF SOIL REMEDIATION

JOB NO.	1383-110
DATE	JAN. 1997
SCALE	1" = 50'

FIGURE 6-1

Accordingly, as shown on Figure 6-1, it is recommended that soils in the vicinity of sample locations NR1, NR6, NR7, NR20, NR22, NR23, NR24, NR60, NR62 and NR64 be excavated to a minimum depth of 4 feet below grade for remediation. A minimum depth of 4 feet was selected based upon the detection of constituents of concern including PAHs, CaPAHs and metals to a depth of 4 feet at concentrations that exceeded NYSDEC TAGM criteria and Eastern USA background levels. These exceedances included CaPAHs, arsenic and mercury at NR1 and NR7; arsenic and mercury at NR6, NR20, NR22, NR23, NR24 and NR60; and arsenic at NR62 and NR64.

In addition, as shown on Figure 6-1, it is recommended that soils in the vicinity of sample locations NRSSE, NR2, NR3, NR11, NR42 and NR43 be excavated to a minimum depth of 3 feet below grade for remediation. A minimum depth of 3 feet was chosen based upon the detection of constituents of concern including PAHs, CaPAHs and metals to a depth of 3 feet at concentrations that exceeded NYSDEC TAGM criteria and Eastern USA background levels. These exceedances included PAHs, CaPAHs, arsenic and mercury at NRSSE and NR3; arsenic and mercury at NR2 and NR42; CaPAHs, arsenic and mercury at NR11; and arsenic at NR43.

Figure 6-1 also indicates that it is recommended that the soil in the vicinity of sample locations NR18, NR19, NR21, NR46, NR47, NR49, NR50, NR51, NR53 and NR65 be excavated to a minimum depth of 2 feet below grade for remediation. This depth is based upon the detection of constituents of concern including metals to a depth of 2 feet at concentrations that exceeded Eastern USA background levels. These exceedances included arsenic and mercury at sample locations NR18, NR19, NR21, NR49 and NR53; and arsenic in the samples collected at sample locations NR46, NR47, NR50, NR51 and NR65.

In addition, Figure 6-1 indicates that it is recommended that the soil in the vicinity of sample locations NRSSN, NRSSW, NR4, NR5, NR8, NR9, NR10, NR12, NR13, NR14, NR15, NR17, NR32, NR33, NR48, NR56, NR61, NR63, NR68, NR72, NRSB1, NRSB2, NR82, NR83 and NR85 be excavated to a minimum depth of 1 foot below grade for remediation. This depth is based upon the detection of constituents of concern including PAHs, CaPAHs and metals to a

depth of 1 foot at concentrations that exceeded the NYSDEC TAGM criteria and Eastern USA background levels. These exceedances included: PAHs, CaPAHs and arsenic and mercury at NRSSN; CaPAHs, arsenic and mercury at NRSSW, NR8 and NR15; PAHs, CaPAHs and mercury at NR5; CaPAHs at NR72; arsenic and mercury at NR4, NR9, NR10, NR13, NR14, NR32, NR33, NR68, NR82, NR83 and NR85; and arsenic at NR12, NR17, NR48, NR56, NR61, NR63, NRSB1 and NRSB2.

Based on the analytical data, there were no exceedances observed in the soil samples collected at sample locations NR16, NR25, NR28, NR29, NR31, NR36, NR37, NR39, NR41, NR44, NR45, NR52, NR54, NR55, NR57, NR58, NR59, NR69, NR71, NR73 and NR75 through NR81. Therefore, as Figure 6-1 indicates, soil remediation activities are not warranted in these areas.

In addition, the exceedances of arsenic, chromium, copper or zinc observed in the soil samples collected at sample locations NR26, NR27, NR30, NR34, NR35, NR38, NR66, NR67, NR70 and NR86 through NR89 appear isolated and not uniform or continuous in nature. Therefore, as Figure 6-1 indicates, no soil remediation activities are recommended in these areas.

As was stated in Sections 1 and 2 of this report, the overall goal of the investigation program, which would ultimately translate to the remediation component of the project, was to identify constituents of concern in "higher probability" areas of concern across the site with the intent to at least initially compare analytical results to published Eastern USA background levels. "Higher probability" areas of concern were basically defined as locations beneath and immediately adjacent to the thrust deflectors, the perimeter of the concrete runway, and storm water dry wells at the site.

Having completed that, a remedial excavation program has been designed to remove the principal constituents of concern via excavation. These principal constituents of concern included primarily arsenic, mercury, zinc (to a limited extent) and certain semivolatile organic compounds.

The analytical results of the principal constituents identified indicate a seemingly understandable trend of low level contaminants at areas generally located at the perimeter of the runway and adjacent to the thrust deflectors. Virtually all these areas were addressed by excavation. Two exceptions to this are as follows.

First, there are a number of areas where soil samples either isolated at depth or from specific points across the site detected low level contamination. Since these samples were not located in the typical "higher probability" areas of concern which were identified across the site, nor were they associated with any industrial process operations, chemical storage areas, tank systems and/or known chemical spills, we have characterized these "isolated" areas with limited horizontal or vertical extent as not requiring excavation.

Secondly, there were a number of sampling points which were identified as containing total chromium at concentrations ranging from 51.9 mg/kg to 100 mg/kg. These sample locations include NR67 at a depth of 1-2 feet, NR30 at a depth of 0-2 feet, NR88 at a depth of 0-1 feet and NR87 at a depth of 1-2 feet. Since chromium was not originally within the suite of compounds identified as "of concern", and since the location of the samples in the southeastern portion of the site in the asphalt parking area appeared to be somewhat isolated, the following analysis was made to evaluate the impact of these findings at the site.

As was mentioned above, while there were no process operations, tanks or known chemical spills that could have resulted in chromium as an environmental contaminant, it was detected in four samples from the southeastern portion of the property. In evaluating chromium as a newly identified chemical species, we relied on the soil screening levels recently published by the United States Environmental Protection Agency (USEPA) in 1996. The merits of utilizing this guidance is important since, for the first time, it identifies and evaluates each of the two species of chromium, as well as total chromium, with regard to environmental impact due to ingestion. The USEPA document basically establishes a level of 390 mg/kg for chromium (total) and chromium (VI) and a level of 78,000 mg/kg for chromium (III). This is an important

departure from the values provided in the NYSDEC TAGM as either soil cleanup objectives or Eastern USA background levels. The important differentiation is that the most recent work published by the USEPA identifies not only total chromium, which the TAGM addresses, but also each of the two species of chromium that can exist (in theory) in the environment and assigns a specific, calculated soil screening level based on its risk model. The TAGM does not address chromium in this specific manner and is therefore overly conservative with respect to the risk it assigns to chromium as total, as elaborated on below.

While the chromium results which are reported for the southeastern portion of the property are chromium (total), the following is noteworthy. Chromium (VI) is the most toxic species of chromium and is the reason that USEPA assigned a soil screening level of 390 mg/kg. Standard contract laboratory protocol imposes a maximum 24-hour holding time on any sample being analyzed for chromium (VI). The reason for this very stringent holding time, as opposed to 6 months for either chromium (total) or chromium (III) is quite simple. Chromium (VI) is a species of chromium which exists in an "excited" ionic state and is therefore relatively unstable and increasingly reactive. Therefore, the chromium (VI) species will either react with other compatible species in the environment or possibly transform to chromium (III). As a result, the general thinking is that it is likely that the dominant species found in the environment, particularly if it has had the benefit of being present in the environment over a longer period of time, is chromium (III). This fact is generally recognized by the scientific community and the laboratory industry.

That being the case, the following findings/conclusions are presented.

- The samples collected and analyzed from the southeast portion of the site detected total chromium ranging from 51.9 mg/kg to 100 mg/kg.
- While the NYSDEC TAGM criteria and Eastern USA background levels were utilized for comparison with regard to the "principal constituents of concern" (arsenic, mercury, zinc [to a limited extent] and certain semivolatile compounds), we have utilized USEPA's recently published Soil Screening Levels (SSLs) in lieu of Eastern USA background levels in an effort to evaluate the impact of chromium results on the site.

- The reason that USEPA's SSL are unique from a risk assessment perspective is that for the first time each of the two species of chromium (III and VI), as well as total chromium, have a separate and distinct calculated threshold level for risk management decision making. We believe intuitively that this methodology of identifying individual species and calculating a separate risk assessment for each provides for a more sound and accurate measure of the impact of chromium to environmental receptors.
- While the results reported for chromium detected in the southeast portion of the site were *total* chromium, we believe that it is likely that the major species present in the sample would likely have been chromium (III) for reasons stated above.
- In any case, all of the chromium values detected in soil samples obtained from the southeastern portion of the site are below the most stringent published USEPA soil screening level values for chromium.

With regard to the inorganic constituents copper and zinc, which were detected in soil samples at certain locations across the site, we offer the following. First and foremost, neither copper nor zinc are classified as RCRA metals, that is, metals which in elevated concentrations could classify a waste material as a hazardous waste. In addition, neither elemental copper nor zinc are identified as hazardous constituents in Appendix 23 of the NYSDEC's regulations found at 6 NYCRR Part 371. This being the case, we do not believe that these constituents warrant further investigation.

Furthermore, by way of reference to USEPA's recently published soil screening levels, we believe it is worthy to note that the action level for zinc is 23,000 mg/kg, while copper is not even included on the list of inorganic constituents as a metal of concern.

The remediation technique selected for the North Runway - Parcel L1 site includes excavation of nonhazardous, contaminated soil with off-site transportation and disposal by recycling as a component in the production of asphalt.

Inherent in virtually all excavation programs is the fact that, short of completing a topographic survey of each grid before and after excavation, the horizontal and vertical extent of the excavation can only be approximate. The ability to remove soil, in either the horizontal or vertical direction, in exact accordance with the dimensions identified in this report (as shown on

Figure 6-1) is further limited due to the type and typically large size of the mechanical excavation equipment that will be utilized in the field. To address this concern, more specifically to ensure that, at a minimum, the specified volume of material will be excavated, and to compensate for any questions that might arise regarding the accuracy of the excavation program, in all cases the excavation contractor will be instructed to advance the vertical and horizontal components of the excavation of each grid area deeper and wider than that which is denoted on the excavation plan shown on Figure 6-1.

In addition to the general field procedure addressing "over excavation" discussed above, personnel from Dvirka and Bartilucci Consulting Engineers will be present at all times throughout the excavation program. Among other responsibilities, these field representatives will provide continuous oversight to assure that the excavation program proceeds in accordance with the recommendations of this report. In addition, field personnel will be provided with the authority from NGC to require additional excavation, for either the vertical or horizontal component of any grid in the event that there is any visible evidence of an anomalous soil horizon with respect to color, texture, grain size, odor, etc.

6.2 Concrete Core Sampling

Conclusions

As discussed in Section 5.2, three concrete core samples were collected from the runway and analyzed for the eight RCRA metals, volatile organic compounds, semivolatile organic compounds and pesticides/herbicides by Toxicity Characteristic Leaching Procedure (TCLP). The analytical results of the concrete core samples indicated that barium and chromium were detected well below regulatory levels. In addition, benzene was detected in the concrete core sample collected at location NR37 and pyridine and gamma-BHC were detected in the concrete core sample collected at location NR40 in concentrations well below regulatory levels. No other TCLP metals, VOCs, SVOCs and/or pesticides/herbicides were detected in the concrete core

samples collected from the runway. Therefore, the concrete portion of the runway is not considered to be hazardous and could be removed from the site as nonhazardous material.

Subsequent to the collection of concrete core samples from the runway and receiving the analytical results of these samples, the concrete portion of the runway on the North Runway - Parcel L1 site was removed and properly disposed of by NGC.

Recommendations

Based on the analytical results of the concrete core samples and the subsequent removal of the concrete portion of the runway on the North Runway - Parcel L1 site described above, no further investigation and/or remediation activities are warranted.

6.3 Soil Characterization Sampling

Conclusions

As discussed in Section 5.3, 15 surface soil samples were collected around the perimeter of the runway for waste characterization purposes. All 15 samples were submitted to the analytical laboratory and composited into a single representative sample and analyzed for the eight RCRA metals by TCLP, total PCBs and total petroleum hydrocarbons. The analytical results of the composite sample indicated that the soil is not considered to be hazardous.

Recommendations

Based upon the analytical results of the composite soil sample, the soil is not considered to be hazardous, and can be removed from the site and disposed of properly as a nonhazardous material.

6.4 Dry Well Soil/Sediment Sampling

Conclusions

As discussed in Section 5.4, liquids, sludge and approximately 2 feet of soil/sediment was removed from the bottom of three on-site dry wells during the Phase II Site Assessment field activities and properly disposed of by NGC. Two endpoint soil/sediment samples were collected from the bottom of each dry well at depths from 0 to 2 feet and 2 feet to 4 feet and analyzed for the VOCs and SVOCs listed in STARS Table 2, glycols and priority pollutant metals.

The analytical results of the dry well soil/sediment samples indicated that several VOCs were detected in the shallow (0-2') soil/sediment sample collected at dry well NRDW1 at estimated concentrations that were below the NYSDEC TAGM criteria. However, SVOCs were detected in the shallow (0-2') and deeper (2'-4') soil/sediment samples at concentrations exceeding the individual NYSDEC TAGM criteria for several PAHs including benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and chrysene. It should be noted that the NYSDEC TAGM criteria for total PAHs and total CaPAHs were not exceeded. Several priority pollutant metals, including arsenic, cadmium, chromium, lead, mercury and zinc were detected in the shallow (0-2') soil/sediment sample collected at dry well NRDW1 at concentrations exceeding Eastern USA background levels; however, cadmium and chromium were not detected at concentrations in excess of the proposed revised criteria in NYSDEC TAGM 4046.

Recommendations

Based on the presence of SVOCs and priority pollutant metals at levels exceeding the NSYDEC TAGM criteria and Eastern USA background levels in the soil/sediment samples collected at dry well NRDW1, it is recommended that additional remedial actions be conducted at this dry well. Therefore, it is recommended that the following remedial activities be undertaken at dry well NRDW1: removal of the concrete dry well cover for access to its interior;

removal and proper disposal of liquids present in the dry well; excavation, transportation and proper disposal of additional (minimum of 2 feet) soil/sediment material from the bottom of the dry well to expose clean native sand, if possible; collection of composite samples of the excavated material and laboratory analysis for VOCs, TCLP metals, total petroleum hydrocarbons and flash point for waste characterization and disposal purposes; and backfilling of the dry well to grade with clean sand.

Appendix A

APPENDIX A

BORING LOGS

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1167-PP
Project Name: GAC Bethpage North Runway

Well/Boring No.: NRDW1
Sheet 1 of 1
By: MV Date: 7/29/96
Chk'd: _____ Date: _____

Drilling Contractor: Empire Env. / Clear Water
Driller: D. Maliotta Geologist: M. Volz
Drill Rig: CME 75 Drilling Method: HSA - 4 1/4"
Sample Spoon I.D.: 2" Drive Hammer Wt.: 140 lb.
Date Started: 7/29/96 Date Completed: 7/29/96

Borehole Completion Depth: 4'
Borehole Diameter: 6.5"
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-						
-1-	NRDW (0'-2')	(0'-2')	1.5'	—	Back 0.6ppm Read 4.1 ppm	Dark brown - black, saturated soil
-2-						
-3-	NRDW (2'-4')	(2'-4')	1.5'	—	Back 0.6 ppm Read 4.5 ppm	Dark brown - black, saturated soil
-4-						End of boring at 4'
-5-						
-6-						
-7-						
-8-						
-9-						
-10						

Remarks: MicroTip utilized for headspace measurement

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1167-PP
Project Name: GAC Bethpage North Parkway

Well/Boring No.: NRDW2
Sheet 1 of 1
By: MV Date: 7/29/96
Chk'd: _____ Date: _____

Drilling Contractor: Empire Env. / Clear Water
Driller: D. Vigliotta J. Geologist: M. Volz
Drill Rig: CME 75 Drilling Method: HSA - 4 1/4"
Sample Spoon I.D.: 2" Drive Hammer Wt.: 140 lb.
Date Started: 7/29/96 Date Completed: 7/29/96

Borehole Completion Depth: 4'
Borehole Diameter: 6.5"
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-						
-1-	NRDW2	(0'-2')	1.5'	—	Back 0.6 ppm Read 3.9 ppm	Medium brown moist soil
-2-						
-3-	NRDW2	(2'-4')	1.5'	—	Back 0.6 ppm Read 4.1 ppm	Medium brown moist soil
-4-						End of boring at 4'
-5-						
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:
MicroTip utilized for headspace measurement

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1167-PP
Project Name: GAE Bethpage North Runway

Well/Boring No.: NRDW3
Sheet 1 of 1
By: MV Date: 7/29/96
Chk'd: _____ Date: _____

Drilling Contractor: Emflgton Env. / Clear Water
Driller: D. Valiotta Geologist: M. Velz
Drill Rig: CME 75 Drilling Method: HSA - 4 1/4"
Sample Spoon I.D.: 2" Drive Hammer Wt.: 140 lb.
Date Started: 7/29/96 Date Completed: 7/29/96

Borehole Completion Depth: 4'
Borehole Diameter: 6.5"
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-						
-1-	NRDW3	(0'-2')	0.75'	—	Back 0.6ppm Read 3.3 ppm	Light brown, damp soil
-2-						
-3-	NRDW3	(2'-4')	0.75'	—	Back 0.6ppm Read 2.0ppm	Light brown, damp soil
-4-						End of boring at 4'
-5-						
-6-						
-7-						
-8-						
-9-						
-10						

Remarks: MicroTip utilized for headspace measurement

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN Northrunway

Well/Boring No.: 2NR1
Sheet 1 of 1
By: EJS Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emmington
Driller: Wally
Drill Rig: CME 75
Sample Spoon I.D.: 2 inch
Date Started: 8/23/96

Geologist: Keith Robins
Drilling Method: Split spoon
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2 inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						
-1-	1	1-2	12"	10,10	0.0	0-12" Dark Brown Soil, trace roots, 12"-24" Dark Brown course to medium gtz Sand, little gravel, dry
-2-	2	2-3	12"	12,15	0.0	Brown medium to coarse gtz Sand, crushed rock, dry
-3-						
-4-	3	3-4	12"	22,23	0.0	Brown medium to coarse gtz Sand, some fine to medium gravel, trace iron ore, gtz rock fragment.
-5-	4	4-5	12"	27,26	0.0	Dark Brown coarse to medium gtz Sand grading down to Light Brown coarse Sand and gravel, dry
-6-						
-7-						
-8-						END OF Boring AT 5 FT
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN North Runway

Well/Boring No.: 2NR2
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: Splitspoon
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2 inch
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	1-2	12"	42,40	0.0	0-12" Dark Sand, roots
-1-						12"-24" Dark Sand, f-m gravel, trace silt, compacted.
-2-	2	2-3	12"	35,37	0.0	Black-Brown fine-medium Sand, fine gravel, little black silt, wet. (discoloration)
-3-	3	3-4	12"	—	0.0	Dark Brown coarse-medium Sand, fine to medium gravel (wet), dry at 3.8 to 4.0
-4-						
-5-	4	4-5	12"	—	0.0	Brown medium to coarse gtz Sand, little gravel, dry.
-6-						END OF Boring at 5 FT
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement
_____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Grumman
Northrop way

Well/Boring No.: 2 NR 3
Sheet 1 of 1
By: KSB Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally
Drill Rig: CME 75
Sample Spoon I.D.: 2 inch
Date Started: 8/23/96

Geologist: Keith Rubini
Drilling Method: 2 inch split spoon
Drive Hammer Wt.: 140 lbs.
Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2 inch
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						
-1-	1	1-2	12"	18,18	0.0	0-12" Dark Brown top soil, roots trace fine gravel. 12"-24" Brown coarse sand and cobbles, gravel, dry
-2-	2	2-3	12"	15,17	0.0	Brown to Dark Brown damp coarse sand Some rounded gravel.
-3-						
-4-	3	3-4	12"	15,17	0.0	Brown coarse to medium quartz Sand and fine subangular gravel, damp
-5-	4	4-5	12"	4,2	0.0	Brown - Light Brown Coarse sand - medium Sand, some white cobbles. dry/damp
-6-						
-7-						END OF Boring at 5 FT
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Grumman Northrunway

Well/Boring No.: 2NR5
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: 2 inch split spoon
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 Lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2 inch
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						
-1-	1	1-2	12"	7,8	0.0	0-12" Brown top soil, trace roots 12"-24" Brown coarse sand, little gravel, loose.
-2-	2	2-3	12"	15,19	0.0	Brown – Light Brown coarse to medium sand, some gravel, dry
-3-	3	3-4	12"	21,23	0.0	Dark Brown to Brown medium to coarse gtz Sand, trace silt, damp
-4-	4	4-5	12"	18,16	0.0	Brown coarse Sand, crushed gtz gravel, loose, dry
-5-						END OF Boring AT 5 Feet
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN Northrunway

Well/Boring No.: 2NR6
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emingford
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: Split Spoon 2inch
Sample Spoon I.D.: 2inch Drive Hammer Wt.: 140 lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2inch
Ground Surface El.: -

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						0-12" Dark Brown fine Sand, Top soil, dry
-1-	1	1-2	12"	11,8	0.0	12"-24" Dark Brown fine Sand, some Silt, little subrounded gravel, trace roots
-2-	2	2-3	12"	15,17	0.0	Dark Brown - Brown medium qtz Sand, trace Silt, little fine gravel
-3-	3	3-4	12"	20,24	0.0	Brown to light orange medium to coarse qtz sand, crushed white gravel, dry
-4-	4	4-5	12"	17,19	0.0	Brown coarse to medium subrounded sand, some fine gravel, wet
-5-						END OF Soil Boring AT 5 FT
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN Northrunway

Well/Boring No.: 2NR9
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emrington
Driller: WALLY Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: SPLIT spoon method
Sample Spoon I.D.: 2inch Drive Hammer Wt.: 140 lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	1-2	12"	20,19	0.0	0-12" Topsoil, roots, dry
-1-						12"-24" Dark Brown Sand, some silt, gravel, dry
-2-	2	2-3	12"	15,17	0.0	0-6" Brown coarse Sand and gravel
-3-	3	3-4	12"	20,22	0.0	6"-12" Dark Brown coarse Sand and gravel, moist
-4-	4	4-5	12"	—	0.0	Dark Brown fine to medium qtz sand some fine Subrounded gravel, at (3.8-4.6') crushed rock, light yellow Brown fine Sand. (wet)
-5-						Brown coarse to medium sand, cobbles, some fine — coarse gravel, trace silt. (Moist-wet)
-6-						
-7-						END OF BORING AT 5 FT
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN NORTH RUNWAY

Well/Boring No.: 2NR11
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emingfon
Driller: WAily
Drill Rig: CME 75
Sample Spoon I.D.: 2inch
Date Started: 8/23/96
Geologist: Keith Robins
Drilling Method: Split Spoon 2inch
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 5 FT
Borehole Diameter: 2inch
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-2	12"	18,17	0.0	0-12" Dark Brown Sand, roots, silt, Topsoil, dry
-1-						12"-24" Brown coarse Sand and gravel, cobbles, loose, dry-damp
-2-	2	2-3	12"	13,17	0.0	Light Brown-Tan-coarse-medium Sand, some fine gravel, moist
-3-	3	3-4	12"	18,12	0.0	Dark Black silty sand, trace dark orange Sand, little fine gravel, Fill, moist
-4-						
-5-	4	4-5	12"	12,14	0.0	Dark Black silt, trace clay, some fine gravel, trace roots, trace gray fine sand, compacted, Fill, Moist
-6-						
-7-						END of BORING AT 5 FT
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN North runway

Well/Boring No.: 2NR14
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: 2inch SP/HSA
Sample Spoon I.D.: 2inch Drive Hammer Wt.: 140 lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 5FT
Borehole Diameter: 2inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						0-12" Dark Brown fine to medium Sand, roots, grass, Top soil
-1-	1	1-2	12"	23,23	0.0	12"-24" Dark Brown fine to medium Sand, gravel, cobbles, trace silt, grading into Brown orange course Sand and gravel, dry
-2-	2	2-3	12"	22,22	0.0	(2'-3') Dark Brown to Brown medium-coarse grs Sand, some fine subrounded gravel.
-3-						(3'-4') Light Brown-Tan fine-course Sand, Some fine gravel, crushed gravel, (damp-dry)
-4-	3	3-4	12"	23,27	0.0	(4-5') Brown silty Sand and gravel, damp.
-5-	4	4-5	12"	—	0.0	END OF BORING AT
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN Northrop Way

Well/Boring No.: NR16
Sheet 1 of 1
By: ESR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Eminflor.
Driller: WALLy Geologist: Keith Rabins
Drill Rig: CME750 Drilling Method: 2 inch
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 LBS
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2 inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	11,18	0.0	Dark Brown fine to medium sand, fine gravel; Top Soil, dry.
-1-	2	1-2	12"	18,20	0.0	Dark Brown – Brown silt, sand, trace brick gravel, dry. Fill.
-2-						
-3-	3	2-3	12"	29,22	0.0	Brown fine to medium to coarse gtz Sand, damp, trace silt.
-4-	4	3-4	12"	24,24	0.0	Dark Black clayey silt, trace brown fine – medium sand, grading into brown gtz Sand, Fill.
-5-						
-6-						END OF BORING AT 4 FT
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN
Northrunway

Well/Boring No.: NR17
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: Johnsmington
Driller: Wally
Drill Rig: CME75
Sample Spoon I.D.: 2inch
Date Started: 8/23/96

Geologist: Keith Robins
Drilling Method: splitspoon 2inch
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 4FT
Borehole Diameter: 2inch
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	17,22	0.0	Dark Brown sand, trace roots, trace slag piece, Top soil, dry
-1-						
-2-	2	1-2'	12"	27,31	0.0	Dark Brown fine to medium sand, some silt, trace gravel, cobbles, roots, loose, damp.
-3-	3	2-3	12"	20,25	0.0	2-2.5' Brown-Light orange fty Sand, trace gravel, damp
-4-	4	3-4	12"	25,30	1.0	2.5-3.0' Black Sand, fine to medium, little gravel, silt, trace glass
-5-						(3-4') Black silt, trace slag, fine gravel, fine sand, compacted, FILL (Fill), damp
-6-						
-7-						END OF Boring AT 4FT
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Grumman
Northcoway

Well/Boring No.: NR18
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Errington
Driller: Wally
Drill Rig: CME 75
Sample Spoon I.D.: 2inch
Date Started: 8/23/96

Geologist: Keith Robins
Drilling Method: Splitspoon 2inch
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	35,25	0.0	Brown fine Sand, trace gravel, roots, Top soil, dry
-1-	2	1-2	12"	30,32	0.0	Dark Brown fine Sand, little silt, trace roots, gravel, (dry)
-2-	3	2-3	12"	17,18	0.0	Brown fine to coarse gty Sand, trace silt, some fine to medium gravel.
-3-	4	3-4	12"	18,19	0.0	Dark Black clayey silt, trace roots, coarse sand, slag pieces, Fill
-4-						END OF soil Boring AT 4 FT
-5-						
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN North Runway

Well/Boring No.: NR-19
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emmington
Driller: Wally
Drill Rig: CME 75
Sample Spoon I.D.: 2inch
Date Started: 8/23/96
Geologist: Keith Robins
Drilling Method: Split spoon 2 inch
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	12,18	0.0	0-12" Dark Brown sand, Top soil, loose, dry, trace roots.
-1-						
-2-	2	1-2	12"	22,22	0.0	Dark Brown fine sand, some silt little fine gravel, coarse sand, compacted, dry
-3-	3	2-3	12"	25,25	0.0	Brown coarse to medium Sand, some gravel
-4-	4	3-4	12"	30,30	0.0	Brown coarse to medium Sand, some gravel trace silt, damp.
-5-						
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Grumman Northrunway

Well/Boring No.: NR20
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally
Drill Rig: CME 75
Sample Spoon I.D.: 2inch
Date Started: 8/23/96
Geologist: Keith Robins
Drilling Method: Split spoon - 2inch
Drive Hammer Wt.: 140 lbs
Date Completed: 8/23/96

Borehole Completion Depth: 4FT
Borehole Diameter: 2inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						
-1-	1	0-1	12, inch	17,17	0.0	Dark Brown Top soil, grass, roots, dry
-2-	2	1-2	12 inch	23,23	0.0	Dark Brown silt and silt compacted with coarse sand, roots, fine gravel, damp-dry
-3-	3	2-3	12 inch	25,27	0.0	Dark Brown medium-coarse qtz sand and subrounded gravel
-4-	4	3-4	12 inch	23,27	0.0	Light Brown fine - medium qtz Sand, trace-little silt, fine gravel, dry
-5-						END OF BORING AT 4 FT
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: GRUMMAN Northrunway

Well/Boring No.: NR21
Sheet 1 of 1
By: KGR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emmylon
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: 2 inch split spoon
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 lbs.
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2 inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-						
-1-	1	0-1	12"	15,15	0.0	Dark Brown Topsoil, fine to medium Sand, trace roots, dry
-2-	2	1-2	12"	12,16	0.0	Dark Brown - Black silt, fine gravel, fine to medium sand, compact Fill
-3-	3	2-3	12"	25,27	0.0	Brown to orange coarse to medium sand, little - some gravel, poorly sorted, dry
-4-	4	3-4	12"	25,28	0.0	Dark Brown - Brown medium sand - little silt, fine gravel, compacted, damp.
-5-						END OF BORING AT 4FT
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Grumman Northrop way

Well/Boring No.: NR 22
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: 2 inch split spoon
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 lbs
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2 inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	12,16	0.0	0-12" Dark Brown fine to medium Top Soil, trace roots, gravel, dry
-1-	2	1-2	12"	18,14	0.0	1-1.5" Brown coarse to medium gravelly Sand and gravel.
-2-						1.5'-2.0' Black clayey silt, trace gravel, trace cinder, Fill, moist
-3-	3	2-3	12"	17,10	0.0	Brown to Light gray coarse sand, grading down to black silt, compact, with coarse sand, very moist, Fill
-4-	4	3-4	12"	16,15	0.0	Black silt, compacted with fine gravel (slight petroleum odor noted)
-5-						END OF Boring AT 4 FT
-6-						
-7-						
-8-						
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

BORING LOG

DVIRKA AND BARTILUCCI

Project No.: 1383-110
Project Name: Brunnan North runway

Well/Boring No.: NR23
Sheet 1 of 1
By: KSR Date: 8/23/96
Chk'd: _____ Date: _____

Drilling Contractor: John Emington
Driller: Wally Geologist: Keith Robins
Drill Rig: CME 75 Drilling Method: 2 inch split spoon
Sample Spoon I.D.: 2 inch Drive Hammer Wt.: 140 lbs.
Date Started: 8/23/96 Date Completed: 8/23/96

Borehole Completion Depth: 4 FT
Borehole Diameter: 2 inch
Ground Surface El.: —

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM) PID	SAMPLE DESCRIPTION
-0-	1	0-1	12"	15,17	0.0	Dry, fine to medium Soil, trace roots cobbles, fine gravel, Top Soil.
-1-						
	2	1-2	12"	18,20	0.0	Light Brown to Dark Brown coarse to medium qtz sand, some subrounded gravel, poorly sorted, loose.
-2-						
-3-	3	2-3	12"	15,20	0.0	Brown to gray fine to coarse sand grading into black very compact Silt, trace fine gravel.
-4-						
	4	3-4	12"	26,25	0.0	Dark Black clayey Silt, trace wood, organics, grading into brown dry coarse sand and gravel (3.8-4.0) Fill material.
-5-						
-6-						
-7-						
-8-						END of Boring at 4 FT.
-9-						
-10						

Remarks:

Water Level Measurement _____ Date _____
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Northrunway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NRSB-1
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny/cool
Date/Time Start: 10/2/96
Date/Time Finish: 10/2/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading
0-2	SS-1	15,8	0.0
rec	24	15,13	
2-4	SS-2	9,11	0.0
rec=	18"	8,12	
4-6	SS-3	7,12	0.0
rec=	—	15,18	

FIELD IDENTIFICATION OF MATERIAL

(0-2') 0-18" Top soil, Dark Black fine Sand, silt, and roots
18-24" Brown - Coarse Sand, gravel, little dark Brown silt. wet
(2-4) Brown moist silty Clay, Some sbbrounded gravel, tr fine - medium Sand
(4-6) Brown. Gray silty Clay, soft wet Clayey Topsoil
Very soft, pushed split spoon down to (10 FT). Brown - Tan coarse Sand crushed fine gravel, dry

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Clayey Top Soil (0-6')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4¼ H.S.A
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: North Runway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NRSB-2
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Windy / cool 60°F
Date/Time Start: 10/3/96
Date/Time Finish: 10/3/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	10,15	-	(0-2') 0-12" Top soil, dark Brown Sand, roots.		Fill material (0-4').
rec:	24	19,23		12"-24" Brown coarse-medium sand, some gravel, cobble, trace fine silt. damp		
2-4	SS-2	13,17	—	(2'-4') 0-8" Black Fill silt, fine Sand, compact, trace organics material, roots		
rec:	15"	18,20		8"-15" Brown-Orange clayey silt embedded subrounded gravel.		
4-6	SS-3	22,23	—	(4'-6') Tan coarse Sand and gravel Subangular, little medium to fine Sand, dry-loose.		
rec:	15"	25,27				

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Northrop Way / Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-11
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / clear
Date/Time Start: 9/27/96
Date/Time Finish: 9/27/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	10,10	0.1	(0-2') 0-3" Black fine Sand, silt, trace organics, tr roots, cobbles, gravel.
rec	15"	11,19		3"-12" Brown-Orange C sand, some fn gravel, wet
2-4	2	8,10	0.0	12"-15" DK Brown c-m Sand, wet, gravel.
rec	12"	15,16		(2-4') Brown - DK Brown c-fgty Sand, Fill wet, trace black silt, cobbles, fine gravel
4-6	3"	10,7	0.0	(4-6') Fill 0-7" Black-Gray silt some fn Sand, little gravel wet
rec	15"	13,30		7"-12" Fill Black soled silt, little clay, tr organics, tr slag
6-8	4	7,9,	0.0	12"-15" Black - Gray c-m Sand, fine gravel, wet
rec	12"	13,17		(6-8') Fill Gray-Brown silt, Solid, dense, trace med gravel, little clay.
8-10	5	9,8	0.0	(8-10') 0-12" LT Tan fn Sand, and sub angular white gravel, very dry.
rec	12"	24,30		(10'-12') Tan - Light Brown - Lgt Orange C-fine Sand, some gravel, tr silt. damp
10-12	6	9,11	0.0	END OF Boring AT 12 Ft
rec	24	32,38		

WELL SCHEMATIC

COMMENTS: Fill material (0-8')

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-8')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-19
Driller Wally	PROJECT NAME Northrunway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4¼ HSA		
Drive Hammer Weight 140 lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Sunny / clear

Date/Time Start 9/27/96

Date/Time Finish 9/27/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	—	1/0	(0-2') 0-8" Topsoil 8"-24" Black Fill, compact, dry fine Sand, silt, gravel, cobbles		Fill material 0 - 6 FT
rec 24"				(2'-4') 0-6" Dark Brown coarse Sand gravel 6"-24" Brown-Or coarse Sand, Some cobbles, f-m gravel, Sand. (moist-wet)		
2-4	2	27,28,	0.3/0			
rec 24"		30,24	/			
4-6	3	13,15	2.7/0	(4'-6') 0-7" Brown-DK Brown c-m Sand and gravel, wet 7"-9" Black stained sand, silt, trace organics Fill 9"-15" Brown-Orange clayey Gravel, moist, Fill		
rec 15"		17,20				
6-8	4	13,14	0.4/0			
rec 24"		17,15	/			
8-10	5	14,17	0.2/0	(6-8') Brown-Tan coarse-fine grey Sand - little f-med gravel, tr silt, damp-dry		
rec 24"		26,9	/			
10-12	6	16,8	0.0	(8'-10') Gray-Light Orange Silt, trace cobbles, tr clay		
rec 10"		16,40		(10-12') Gray-Light Orange coarse Sand and f-m gravel, crushed gravel (dry)		
				END OF Boring AT 12 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill material (0-6 FT)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Reding
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Northrop Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-21
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny
Date/Time Start: 9/26/96
Date/Time Finish: 9/26/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	8,13	0/0	0-12" Dark Black Top soil
rec	24"	26,36		12"-24" Fill, Black fine Sand, silt, roots, cobbles, compacted, dry.
2-4	2	15,18,	4/6	(2-4') Sand Fill, 0-6" Brown-LT Tan Sand.
rec	12"	30,24		6"-12" Dark Brown wet sand
4-6	3	—	500/2	(4'-6') 0-3" Dark Black clayey Sand, wet
rec	24"			3"-9" Coarse Brown saturated Sand, gravel
6-8	4	16,24	50/0	(9"-15") DK Black Fill, clayey Silt, Sand, fine gravel, compacted, damp.
rec	24"	28,30		(15"-24") Orange Gray compacted silt and clay, tr oranges, f-m gravel, dry
9-11	5	24,28	0/0	(6-7') Black clayey Silt Sand. Fill
rec	24"	35,34		(7-8') Brown Tan coarse-med gtz Sand and fine gravel
				(9-11') Brown - Light Tan Coarse - medium Sand and gravel.
				END OF Boring at 11FT

WELL SCHEMATIC

COMMENTS: Fill material (0-8 FT)

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material 0-8 Ft)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: KeithRobins
Rig Type: CME75
Drilling Method: 4¼ HSA
Drive Hammer Weight: 140

DRILLING LOG
PROJECT NAME: Northronway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR22
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny clear
Date/Time Start: 9/25/96
Date/Time Finish: 9/25/96

Plot Plan: N ↑ NR22

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	17,28	>1000	(0-2') 0-1' Top soil, Dark Black silt, sand (1'-2.5') Brown coarse sand, gravel, moist (1.5-2.0') Black Fill, silt, (>1000ppm) sand, gravel, crushed slag, trace clayey silt dump
rec=	24"	36,47		
2-4	2	19,23	>1000	(2-4') Black Fill compacted Sand, fine silt, trace organic material, small gravel, grading down to Black clayey silt little-some organic material, trace gravel.
rec=	24"	31,31		
4-6	3	—	20	(4-6') Brown Orange Sand Sand Fill, some fine to medium gravel, little dark Brown silt and sand at (5.6-6.0) (dry)
rec=	20"			
6-8'	4	27,37	>1000	(6'-8') (0-12") Brown to orange Sand Fill, 12"-18" Black Fill, clayey (traces) silt, trace gravel, with Brown-yellow staining
rec=	18"	34,44		
10-12	5	6,6	0/0	(7-9') Brown silty clay
rec=	15"	12,22		(8-10') No recovery
10-14	6	—	0/0	(10-12') Light Tan-Brown fm Sand, crushed fine gravel, dry.
rec=	10"			(12-14') Light Tan coarse to medium rnd qtz Sand, little fine gravel, well sorted

WELL SCHEMATIC	COMMENTS
	Top soil 0-1' Fill material 1'-18' ↓

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-18 FT)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140

DRILLING LOG
PROJECT NAME: Northrunway Grumman
PROJECT #: 883-110
Location/Address:

BORING NUMBER NR23
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / clear 70°F
Date/Time Start: 9/25/96
Date/Time Finish: 9/25/96

Plot Plan: N; NR22; NR23

Sample Depth	Sample Number	SPT Blows	PID/RID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	4,11	0	(0-2') 0-18" Top soil, roots, gravel, fine sand		Top Soil 0-1'
rec	24"	23,33		12"-24" Brown coarse Sand and silt, Black sand at 2 FT Fill material		Fill material (1-10')
2-4	2	15,18	>1000	(2-4') Black Fill, silty clay trace-little organic material, damp-moist, trace fine gravel, compact		
rec	24"	23,38				
4-6	3	32,44	4 ppm	(4-6') Brown orange Sand Fill, coarse to medium Sand, some white crushed gravel, grading down to Brown fine Sand trace fine gravel. dry		
rec	12"	54,66				
6-8	4	25,30	0	(6-8') Black Fill silt, Some fine Sand, dry and compacted, trace crushed coal, slag, some subrounded gravel, poorly sorted, trace clay. (damp)		
rec	24"	40,57				
9-11	5	4,11,	0/0	(9-11') (9-10') Black silt, fine Sand, cobbles, gray silt Fill (10-11') Br-Or f-C		
rec	24"	17,26	/	(10-12') Sand, some gravel f-m size Brown-Orange c-m Sand, little f-m gravel, poorly sorted. (dry)		
10-12	6	17,19	0/0			
rec	12"	22,27	/			

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material 0-10'

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR24
Driller Wally	PROJECT NAME Northrunway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 Pounds		

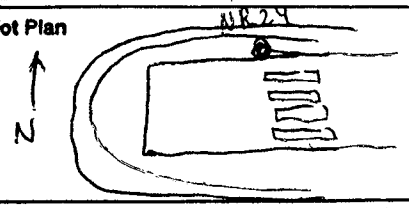
GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Sunny clear

Date/Time Start 9/25/96

Date/Time Finish 9/25/96

Plot Plan



Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	6,15	0.0	(0-2') 0-12" Dark Black Top Soil, fine sand, cobbles, gravel, trace roots. dry : Fill		Topsoil 0-1
rec:	20"	27,37				
2-4	2	15,22	>1000	(2'-4') 0-3" Brown Medium Wet sand		
rec:	20"	40,55		3"-17" Black Fill, silty sand, clay, compacted, gravel, wet. trace organics twigs, organic material		Fill material (1-10')
4-6	3	6,25	0.0			
rec:	18"	33,37				
6-8	4	10,16	0.0	17"-20" Brown Sand, damp		
rec:	24"	22,38		(4'-6') Dark Brown to Black Fill, silt, and fine sand, trace clay, little quartz crushed gravel, poorly sorted, dry-damp		
8-10	5	10,12	0.0			
rec:	24"	15,22				
10-12	6	6,6,	0/0	(6'-8') Dark Brown Fill, fine to medium Sand, some silt, trace clay, gravel fine, trace coal, trace slag, poorly sorted. (dry)		
rec:	12"	12,22				
12-14	7	7,12	0/0			
rec:	15"	18,26		(8'-10') Light Gray/Blk/Tan Fill, silt, fine to medium sand, trace fine gravel, cobble, trace clay, some white gravel crushed.		
14-16	8	12,19	0/0			
rec:	15"	22,33		(10-12') Brown-Orange c-f sand, trace silt, little med gravel dump		
				(12'-14') Tan-light Orange c-f Sand, some mac gravel (dry)		
				(14'-16') Orange DK Brown fm Sand Some silt, little gray silt, some m-f gravel, damp		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill material (0-10')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4¼ HSA
Drive Hammer Weight: 140

DRILLING LOG
PROJECT NAME: Commun Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR25
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny/clear
Date/Time Start: 9/30/96
Date/Time Finish: 9/30/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	7,23	0.4	0-3" Asphalt
rec:	24	36,31		(0-2') Brown Coarse to medium sand, trace silt, fine sand, some gravel, subround. Sand Fill
2-4	2	13,24	0.7	(2'-4') Brown coarse moist-wet sand, little gravel, trace black silt, tr clay w/fine gravel
rec:	18"	28,32		
4-6	3	15,27	0.8	(4'-6') Brown-Orange coarse sand, gravel and cobbles; poorly sorted
rec	12"	34,42		
6-8	4	7,10	1.1	(6'-8') Brown-Light Brown c-f subrndd qtz sand, little f-m gravel, poorly sorted (moist)
rec:	15"	33,31		
8-10	5	12,47	0.8	(8'-10') crushed stone (0-2") 2"-12" DK Brown Coarse Sand, little fine gravel
rec:	12"	34,31		
10-12	6	4,12,	0.9	(10'-12') 0-4" Brown fn Sand, trace coarse/fine gravel
rec:	15"	19,27		4"-15" Brown-Gray silt, little white gravel, compact
12-14	7	16,24	1.6	(12'-14') 0-6" Gray silt, fine white gravel
rec:	10"	32,39		6"-10" Orange coarse and fine gravel (dry) tr cobbles
14-16	8	5,13,	1.0	(14'-16') Dark Brown-Orange coarse sand, abundant gravel, fm gts dry
rec:	12"	18,21		

WELL SCHEMATIC

COMMENTS
Fill material (0-11')

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: NATIVE SOIL at (11')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Northrunway GRUMMAN
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-26
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Windy, cool 60°F
Date/Time Start: 10/3/96
Date/Time Finish: 10/3/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	22,34	0.0	(0-2') Dark Brown coarse-medium Sand, gravel, dry, little cobbles, trace fine sand		Fill material (0-10')
rec=	24"	38,46				
2-4	SS-2	20,30	0.0	(2'-4') Brown-Orange coarse qtz Sand dry, medium gravel, trace cobbles		
rec=	20"	40,45				
4-6	SS-3	19,27	0.0	(4'-6') Brown coarse-medium subrounded qtz Sand, some fine-medium gravel dry.		
rec=	20"	41,56				
6-8	SS-4	25,27	0.0	(6'-8') Brown coarse-medium qtz Sand gravel fine-medium, trace silt, dry-damp)		
rec=	20"	30,31				
8-10	SS-5	27,28	0.0	(8'-10') Dark Brown-Brown medium-coarse Sand some fine-medium gravel, crushed qtz rock fragments, dry-damp		
rec=	10"	30,27				
10-12	SS-6	24,18	0.0	(10'-12') Brown Clayey Silt with subrounded gravel, trace fine sand		
rec=	20"	17,12				
12-14	SS-7	7,17	0.0	(12'-14') Gray-Brown silty clay with subrounded gravel, trace fine sand, moist		
rec=	24"	22,31				
14-16	SS-8	14,26	0.0	(14'-16') 0-8" Gray gravel, clayey silt		
rec=	15"	32,37		8"-15" Brown-Orange C-M Sand, little silt, tr fine-little gravel.		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-10')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR27
Driller Wally	PROJECT NAME Northway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME75	Location/Address	
Drilling Method		
Drive Hammer Weight		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Sunny clear

Date/Time Start 9/27/96

Date/Time Finish 9/27/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	6,12	0.0	(0-2') 0-8" Dark Black sand, silt, Top soil, roots. 8"-18" Orange - Dark Brown C-M sand, some gravel. moist		0 - 12' Fill material
rec:	18"	20,26				
2-4	2	16,26,	0.0	(2-4') Brown - Light Orange C-M Sand, some f-M gravel, Cobbles, trace clayey silt, black lense Fill		
rec:	18"	24,28				
4-6	3	5,6	0.0	(4'-6') Brown coarse - med Sand, some fine-med gravel, poorly sorted. Sand Fill		
rec:	8"	26,34				
6-8	4	5,6	0.0	(6'-8') Brown wet, coarse med Sand, some fine gravel, trace cobble, silt		
rec:	12"	8,32				
8-10	5	6,6	0.5	(8'-10') Black Fill, compact, dense, Brown - Black silt, little fn sand, clay, tr fine gravel. (wet)		
rec:	12"	15,21				
10-12	6	7,13	0.3	(10-12') Dark Brown silt compact with f-m gravel, little fine Sand, moist.		
rec:	12"	12,20				
12-14	7	14,16	0.0	(12'-14') 0-15" Sand and gravel, 15"-18" Brown moist/wet silt/s Brown - Orange med Sand,		
rec:	18"	26,26				

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill Material (0-12')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: North Runway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-28
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / Cool
Date/Time Start: 10/3/96
Date/Time Finish: 10/3/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	SS-1	20 25	-	(0-2') Brown - Dark Brown coarse to medium Sand, little silt, Cobbles, and fine - medium gravel
rec=	24"	40,40		
2-4	SS-2	40,42	-	(2'-4') Fill Dark Brown coarse - medium Sand, poorly sorted, Some f-m subangular gravel crushed stone, little fine Sand, trace silt.
rec=	24"	44,45		
4-6	SS-3	37 33	-	
rec=	24"	28,26		
6-8	SS-4	11 9	-	(4'-6") Fill, Dark Brown medium to coarse Sand, f-m gravel, trace cobble, little - trace fine sand and silt, trace iron, poorly sorted.
rec=	20"	36,50		
8-10	SS-5	27 25	-	
rec=	24"	26,26		
10-12	SS-6	13 19	-	(6'-8') 0-20" Dark Brown - LT Orange coarse - medium Sand and fine - medium subrounded gravel, moist
rec=	24"	26,37		20-24" Dark Brown Coarse Sand, fine gravel; wet.
12-14	SS-7	15 20	-	(8-10') 0-12" Dark Brown medium - Coarse Sand, Stones gravel, little silt
rec=	24"	45,52		12"-24" Light Tan Coarse Sand abundant f-m gravel. dry.
				(10-12') Tan - LT Brown fm well sorted Sand tr gravel, coarse Tan sand at tip
				(12-14') Brown - Orange coarse to medium Subrnd Sand and gravel, tr iron

SPT = STANDARD PENETRATION TEST

WELL SCHEMATIC

COMMENTS
Fill MATERIAL 0-9FT

Soil Stratigraphy Summary Fill Material 0-9 Feet

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4¼ HSA
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Northcanway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-29
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: 9/30/96 Sunny Clear 70°F
Date/Time Start: 9/30/96
Date/Time Finish: 9/30/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	5,14	0.0	0-3" Asphalt		Fill material (0-7')
rec	18"	27,33		3"-14" Black Sand, trace gravel, Cobbles slag, cinders.		
				14"-18" DK Brown m Sand, tr f gravel.		
2-4	2	8,21	0.0	(2-4') Dark Brown coarse to medium Sand, trace-little gravel, moist f-m Sand at 4'		
rec	15"	38,45				
4-6	3	25,42	0.0	(4'-6') Dark Brown-Gray moist-wet Coarse Sand, little f-m gravel, tr black silt.		
rec	15"	7,39				
6-8	4	15,25	0.0	(6'-8') Brown clayey Silt, tr gravel (0-5") Brown-Orange C-m Sand, dry, some f-m gravel		
rec	12"	35,50				
8-10	5	18,25	0.0	(8'-10') Brown dry-Orange coarse sand, some white-Gray gravel, poorly sorted		
rec	24	28,10		(9-10') Orange f-m Sand dry		
10-12	6	17,29	0.0	(10'-12') Brown-Coarse subrnd Sand, some white stones, gravel. dry.		
rec	24	34,37				

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill Material (0-7 Ft)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-30
Driller Wally	PROJECT NAME Northrop Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 383-10	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Cool 60°F

Date/Time Start 10/3/96

Date/Time Finish 10/3/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	20,30	—	(0-2') Fill Dark Brown coarse-medium Sand and fine-medium gravel, trace cobble, trace red slag, poor, sorted, trace glass.		Fill MATERIAL 0 - 3 FT
rec	20"	40,45				
2-4	SS-2	20,25	—	(2'-3') Black f-m-c Sand, trace fine gravel, silt.		
rec	24"	23,30				
4-6	SS-3	23,42	—	3-4' Brown - Dark Orange medium - coarse qtz subrounded sand, some fine - medium subangular gravel.		
rec	15"	37,51		(4-6') Orange coarse-medium grained sand and fine-medium size gravel, little fine sand		
				END OF BORING AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill Material (0-3 FT)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-31
Driller Wally	PROJECT NAME Northrunway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Sunny/clear

Date/Time Start 9/30/96

Date/Time Finish 9/30/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	7,13	0.0	(0-2') asphalt (0-3" 8"-24" Brown-Light Tan C-m sand, gravel, trace Black fill at beneath asphalt		Fill material 0-2.5' ↓
rec	24"	3,4,4				
2-4	2	11,17	0.2	(2'-4') 0-6" Black fill sand, silt, fine gravel, compact, trace organics		
rec	18"	26,32				
4-6	3	7,13	0.0	(4'-6') 6"-18" Brown clayey silt, trace gravel. damp/dry.		
rec	12"	17,22		Gray-Brown silt and clay compact, trace f-m gravel.		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill material (0-2.5')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR32
Driller Wally	PROJECT NAME Northrunway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Windy/cool 60°F

Date/Time Start 10/3/96

Date/Time Finish 10/3/96

Plot Plan

Sample Depth	Sample Number	SPT 3 blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	7, 3	--	(0-2') 0-12" Top Soil roots, gravel, dark brown silt, sand		Fill Material (0-5 1/2')
rec=	24"	19,21		12"-24" Fill Black silt sand, organics, trace fine gravel, dry		
2-4	SS-2	17,13	—	(2-4 0-15" Brown-Dark Brown clayey Silt, organics, trace fine Sand, gravel		
rec=	8"	11,2		(3 1/2'-4') Brown-Orange Sand gtz, subrounded gravel, little silt, dry.		
4-6	SS-3	19,21	—	(4'-6') 0-7" Gray-Brown clayey Gravel, some silt, damp-moist.		
rec=	15"	23,25		7"-15" Tan-Brown medium-coarse Sand, little fine gravel, dry.		
6-8	SS-4	33,35	—	(6-8') Light Tan well sorted gtz rounded medium Sand, little fine-medium gravel.		
rec=	24	38,40				
8-10	SS-5	19,23	—	(8'-10') Light Tan-Brown fine-medium gtz rnd sand, trace fine gravel, trace silt, dry		
rec=	12"	65,85				
				END OF Boring AT 10 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Northrop Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-33
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / Cool
Date/Time Start: 10/2/96
Date/Time Finish: 10/2/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	11, 8,	0.8	(0-2') 0-12" Top soil, Brown-DK Brown sand, roots.		Sand Fill (0-2') ↓
Rec:	24"	13, 6		12"-14" Dark Black Fine Silt		
				14"-16" Tan-Brown medium-coarse Sand, gravel, trace cobbles.		
2-4	SS-2	20, 15	0.0	16"-24" Dark Brown Sand and silt.		
Rec:	24"	17, 24		(2'-4') Dark Brown, coarse-medium Sand, some silt.		
4-6	SS-3	7, 11	0.0	(4'-6') Brown medium Sand well rounded quartz, little sub rounded gravel, trace coarse Sand, little brown silt, (moist)		
Rec:	24"	13, 10				
				END OF BORING AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Sand Fill (0-2')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Rubins
Rig Type: CME 75
Drilling Method: 4¼ HSA
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Northrunway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-34
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny/Cool
Date/Time Start: 10/2/96
Date/Time Finish: 10/2/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	SS-1	12,11	0.0	(0-1') Top Soil, Black fine Sand, roots		Fill material (0-3½')
rec:	24	10,16		(1-1½) Brown-Dark Brown fine-medium Sand, little gravel.		
				(1½-2.0') Dark-Black loamy Soil, trace roots.		
2-4	SS-2	15,23	0.0	(2'-4') Dark Brown Fill; Red silty sand (0-4')		
rec:	15"	28,41		4"-12" Dark Brown coarse Sand and gravel and cobbles.		
				12"-15" Light Brown Orange gtz rounded Sand, fine gravel		
4-6	SS-3	27,38	0.0	(4'-6') Light Tan-Brown coarse Sand, subrounded sand and fine-medium gravel, crushed gtz subangular gravel, dry - little fine-medium Sand.		
rec:	8"	37,45				
				END OF Boring AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-3½)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Northrop Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-35
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny/clear
Date/Time Start: 10/2/96
Date/Time Finish: 10/2/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	SS-1	9,27	0.2	(0-2') 0-5" Dark Brown Sand fm gravel, moist
rec:	20"	43,38		5"-20" Brown-Tan coarse-medium Sand, some gravel, cobbles.
2-4	SS-2	11,17	0.4	(2-4') Dark Brown damp-moist, coarse-medium sand, little gravel grading into Tan course-medium Sand, some clayey, Silt, gravel, trace dark orange Silt
rec:	20"	23,28		
4-6	SS-3	22,34	0.2	(4'-6') 0-6" Brown medium Sand, crushed stone, damp
rec:	20"	40,47		6"-9" Dark Black fine-medium Sand, orange qtz Sand, some subrounded gravel; dry
6-8	SS-4	13,21	0.0	(6'-8') (0-3") Tan-Brown medium Sand, fine gravel.
rec:	12"	34,37		(3"-12") Dark Brown medium Sand
8-10	SS-5	13,13	0.3	(8'-10') 0-5" Orange Brown moist, coarse-medium Sand, gravel
rec:	15"	20,20		5"-10" Brown-Dark Brown silty Sand, fine gravel
10-12	SS-6	7,12	0.0	10"-13" Gray clayey Silt
rec:	15"	20,20		13"-15" Dark Red-Brown Silt, and fine Sand, moist.
12-14	SS-7	12,14	0.0	(10'-12') Gray-Brown silt, some clay, subrounded medium gravel. Compact (dry-damp)
rec:	12"	19,23		(12'-14') 0-5" Brown-Orange coarse Sand fine gravel.
				5"-12" Silt, gravel, some clay
				END OF Boring 14 FT

WELL SCHEMATIC

COMMENTS
Fill material (0-10')

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-36
Driller Wally	PROJECT NAME Grumman North runway	Sheet 1 of 1
Inspector Kent Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 lb.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather Sunny / clear 70°F

Date/Time Start 9/30/96

Date/Time Finish 9/30/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	16,21	1.0	(0-2') Concrete 0-7" Dark Brown - Brown coarse to medium sand, cobbles, f-m gravel, trace silt, trace black silt, fine sand.		Fill material (0-10')
rec-	21"	36,39				
2-4	2	9,17,	1.0	(2'-4') 0-3" Black fill 3"-24" Dark Brown - Tan coarse to fine Sand, little silt, some gravel.		
rec=	24"	26,33				
4-6	3	17,29	0.5			
rec=	18"	37,44				
6-8	4	18,35	1.0	(4'-6') Brown - Tan - Light Orange m-c-f Sand, rnd, little f-m gravel, trace silt Sand Fill		
rec=	24"	46,52				
8-10	5	11,17	1.2	(6-8') Dark Brown - Brown c-m Sand with; little - some f-m gravel, trace stones, rocks. Sand Fill		
rec=	15"	26,31				
10-12	6	15,19	0.0	(8'-10') 0-6" Brown - Orange clayey silt, gravel, damp 6"-15" Tan f-c gt; Sand, gravel. dry		
rec=	9"	26,33				
12-14	7	11,19	0.0	(10'-12') Brown coarse - medium Sand, dry, little brown silt noticable cobbles. in soil cuttings		
rec	12"	22,31		(12'-14') Light Tan - Orange f-c Sand, dry, crushed gravel fine-medium size.		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary Fill material (0-10')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: HSA 4 1/4
Drive Hammer Weight: 140

DRILLING LOG
PROJECT NAME: Northrunway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-37
Sheet: 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / cool
Date/Time Start: 10/2/96
Date/Time Finish: 10/2/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	13,42	0.0	(0-2') Dark Brown coarse Sand, fine-medium gravel, trace cobble, silt, Fill
rec	24	51,34		
2-4	2	25,35	0.4	(2-4') Brown-Orange coarse to medium Sand, little f-m gravel, dry - Fill
rec	15"	40,42		
4-6	3	36,38	0.9	(4'-6') Dark Brown-Light Orange damp c-m Sand, little fine gravel, trace fine Sand, 2 inch black silt, seam at 5'
rec	12"	44,48		
6-8	4	27,34	0.3	(6-8') 0-12" Dark Brown moist-wet coarse-medium Sand, some-little f-m gravel, tr cobble 12"-15" Dense-dry, Brown-LT orange Gray-silt, trace coarse Sand, fine gravel, clay
rec	18"	47,52		
8-10	5	7,19	0.0	(8'-10') 0-7" Brown clayey silt, trace fine Sand, gravel (wet-moist) 7"-10" Dark Brown Coarse Sand and gravel 10"-20" Light Tan-Orange c-m Sand, well sorted, dry, little gravel
rec	20"	35,42		
10-12	6	35,45	0.2	(10'-12') Coarse Sand with gravel, LT fractured white gravel, Broken Stone/rock at 10'
rec	10"	58,65		
12-14	7	30,42	0.0	(12-14') Light Orange-Tan medium well rnd Sand, little subrnd gravel, dry
rec	8"	42,60		

SPT = STANDARD PENETRATION TEST

WELL SCHEMATIC

COMMENTS
Fill material (0-10 FT)

Soil Stratigraphy Summary: Fill Material (0-10 FT)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 3 1/4 HSA
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Northrop Grumman C
PROJECT #: 1393-...
Location/Address:

BORING NUMBER NR-37
Sheet: 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny/cool
Date/Time Start: 10/3 9a
Date/Time Finish: 10/3 9a

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	SS-1	13,42	0.0	(0-2') Dark Brown coarse Sand, fine-medium gravel, cobbles, trace silt.
rec:	24	51,34		
2-4	SS-2	25,35	0.4	(2-4') Brown-Orange coarse to medium Sand, little fine-medium gravel, dry
rec:	.5"	41,50		
4-6	SS-3	36,38	0.9	(4-6') Dark Brown-Light Orange damp coarse-medium subrounded Sand, little fine gravel, trace fine Sand, silt, black silt seam at 5 FT
rec:	12"	44,48		
6-8	SS-4	37,34	0.3	(6-8') 0-12" Dark Brown moist-wet coarse-medium Sand, some-little fine-medium gravel-rare cobble
rec:	18"	47,52		12"-18" Dense; dry-damp Brown-LT Orange-Gray-Silt, trace coarse Sand, fine gravel, trace clay.
8-10	SS-5	7,9	0.0	(8-10') 0-7" Brown clayey Silt, trace fine Sand, gravel, wet-moist.
		35,62		7"-10" Dark Brown coarse Sand and gravel
10-12	SS-6	35,45	0.2	10"-20" Light Tan-Orange coarse-medium Sand well sorted, little gravel.
rec:	10"	58,68		(10-12') coarse Sand with gravel, Light Tan-white qtz, subangular.
12-14	SS-7	30,42	0.0	(12'-14') Light Orange Tan medium well rounded Sand, little subrounded gravel, dry.
rec:	8"	42,60		END OF Boring AT 14'

WELL SCHEMATIC

COMMENTS: Fill material (0-9.5')

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-9½)

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Northrop Grumman Runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-38
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / clear 70°F
Date/Time Start: 10/1/96
Date/Time Finish: 10/1/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	14,27	0.0	(0-2') Concrete (0-6") Dark Brown - Brown coarse to medium grn Sand, some gravel, cobbles, some trace fines Fill
rec	24"	52,42		
2-4	2	5,12	0.4	(2-4') Dark Brown - Orange coarse-medium Sand, little gravel, fines moist at (4 FT) Sand Fill
rec	24"	24,29		
4-6	3	17,25	0.4	(4-6') Sand Fill, Brown - Dark Orange coarse to medium Sand, some gravel, stones, trace fines, Silt, poorly sorted.
rec	15	33,46		
6-8	4	17,25	0.0	(6-8') Brown, saturated coarse rnd Sand, some fine gravel.
rec	12"	37,46		
8-10	5	7,16	0.0	(8-10') Tan coarse Sand, stones, rocks at 9 FT
rec	12"	32,44		
10-12	6	5,14	0.0	(10-12') Light Tan coarse Sand, and gravel, crushed, subangular (dry)
rec	12"	32,45		
12-14	7	11,23,	0.0	(12-14') Tan coarse subrnd, sand and gravel, poorly sorted, cobbles. dry
rec	24"	24,29		
				END OF Boring at 14 FT

WELL SCHEMATIC

COMMENTS: Fill material 0-10 FT

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-10')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-39
Driller Wally	PROJECT NAME Northrunway Grumman	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 4 1/4 HSA		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / clear

Date/Time Start: 10/1/96

Date/Time Finish: 10/1/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-2	1	6,11	0.0	(0-2') 0-1' Topsoil, DK Brown c-f sand, silt, gravel. dump		Fill material 0-8'
rec	24"	24,11		1-2' Brown coarse-med Sand, gravel.		
2-4	2	9,14	0.0	(2'-4') Dark Brown-Tan coarse-fine Sand, some f-m qtz gravel trace fines, Sand fill, dump		
rec	15"	22,23				
4-6	3	12,26	0.0	(4-6') Brown - DK Brown c-m Sand moist-wet at 5 FT, little-some med gravel, fine gravel, trace fine sand, silt		
rec	15"	36,39				
6-8	4	17,23	0.0	(6'-8') Brown Tan coarse Sand and gravel at 8 ft, Brown Clayey silt, (moist)		
rec	12	19,14				
8-10	5	16,24	0.0	(8'-10') Tan-Light Brown coarse Sand and f-m qtz gravel Subangular, Poorly sorted dry.		
rec	12"	27,29				
10-12	6	22,31	0.0	(10'-12') Tan wellsorted c-f qtz rnd sand and some gravel, trace fines		
rec	24	46,44				
12-14	7	15,24	0.0	(12'-14') Light orange-Tan medium rnd qtz Sand little f-m qtz gravel, tr silt, well sorted - dump		
rec	24	29,31				

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-8')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4 1/4 HSA
Drive Hammer Weight: 140 lb.

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR40
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny clear
Date/Time Start: 10/1/96
Date/Time Finish: 10/1/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	9,10,	0.0	(0-2') Dark Brown-Orange m-c Sand, DK Brown compact Silt, some f-m gravel, cobbles. damp. SAnd Fill.
rec:	24"	23,23		
2-4	2	15,17	0.0	(2'-4') Brown-DK Brown c-m Sand, damp - 3', some f-m gravel, trace cobbles. SAnd Fill.
rec:	24	22,33		
4-6	3	12,17,	0.0	(4'-6') 0-8" Dark Brown medium-coarse qtz Sand, fine gravel 8"-15" Brown-Orange Coarse Sand, medium subrnd, dry
rec:	15"	20,23		
6-8	4	17,13	0.0	(6'-8') Brown coarse Sand wet, Fill, f-m gravel, at 7.5' Black c-m Sand Wet, 7.8' Gray Clay, dense, moist
rec:	20"	14,21		
8-10	5	5,13,	0.0	(8'-10') 0-3" Gray clay, gravel. 3"-6" Brown Silt, gravel 6"-18" Dark Brown-Tan medium-fine qtz well sorted Sand, trace f-m gravel, dry
rec:	18"	18,21		
10-12	6	—	0.0	(10'-12') Tan well sorted medium rnd Sand, little-trace fine gravel, coarse sand, tr fines, dry
rec:	12"			
12-14	7	25,37	0.0	(12'-14') Tan-Yellow coarse qtz Sand and f-m gravel, tr f-m sand
rec:	24	54,63		

Fill material, 0 - 9.5'

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-9 1/2')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Wally
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: 4¼ HSA
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Northrunway Grumman
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-41
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather: Sunny / Clear
Date/Time Start: 9/27/96
Date/Time Finish: 9/27/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-2	1	6,12	0.0	(0-2') Dark Brown c-m Sand and f-m-L gravel, trace cobbles, moist-damp. Fill
rec:	24"	20,16		
2-4	2	22,22	0.0	(2'-4') Fill Tan / DK Brown / orange medium-coarse Sand, some, subrnd gravel, trace silt
rec:	18"	30,38		
4-6	3	27,33	1.1	(4'-6') Fill Sand; Orange-Brown Sand-c-m some gravel f-m cobbles, trace silt., poorly sorted.
rec:	24"	40,40		
6-8	4	5,12	2.0	(6'-8') Brown c-medium Sand, little fine gravel, trace medium large gravel, trace silt, damp
rec:	12"	15,30		
8-10	5	10,11	1.1	(8'-10') 0-8" Brown Sand coarse, cobbles, wet
rec:	12"	13,20		8"-15" Black-Gray silt, little fm sand, trace gravel.
10-12	6	9,10	0.0	(10-12') Gray-Light Brown clay and silt, compact damp, trace fine gravel,
rec:	18"	7,6		
12-14	7	5,12	0.0	(12-14') Gray-Light Brown clay and silt, compact.
rec:	24"	17,22		

END OF Boring AT 14 FT

WELL SCHEMATIC

COMMENTS: Fill 0-10'

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary: Fill material (0-10')

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-32
Driller Dennis	PROJECT NAME Grumman Northrop Way	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Split spoon		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / cool

Date/Time Start 11/11/96

Date/Time Finish 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	-	-	sand and gravel		
1-2	SS-2	-	-	sand and gravel		
				END OF Boring AT 2 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Robins
Rig Type: CME75
Drilling Method: Splitspoon
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-33
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool
Date/Time Start: 11/11/96
Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	3,7	-	Top soil		
1-2	SS-2	12,18	✓	Black - Brown Sand, trace gravel, slag Fill.		
				END OF Boring AT 2'		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING LOG

DRILLING CONTRACTOR	
Driller	Dennis
Inspector	K. Rubins
Rig Type	CME 75
Drilling Method	Split spoon
Drive Hammer Weight	140 Lbs
PROJECT NAME	Grumman North runway
PROJECT #	1383-110
Location/Address	
BORING NUMBER	NR-35
Sheet	____ of ____
Boring Location	

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool

Date/Time Start: 11/11/96

Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	3,3	—	Brown sand c-fine gravel		
1-2	SS-2	8,20	—	Brown sand and gravel		
				END OF Boring AT 2 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-38
Driller Dennis	PROJECT NAME Grumman	Sheet ____ of ____
Inspector K. Rubins	Northrop Grumman	Boring Location
Rig Type CME 75	PROJECT # 1363-110	
Drilling Method split spoon	Location/Address	
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / cool

Date/Time Start 11/11/96

Date/Time Finish 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	-	-	Brown Sand, gravel		
1-2	SS-2	-	-	Sand, coarse gravel, cobbles		
				END OF BORING at 2FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Keith Robins
Inspector: Dennis
Rig Type: CME 75
Drilling Method: Split spoon
Drive Hammer Weight: 140 LBS

DRILLING LOG
PROJECT NAME: Grumman
North runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-42
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / Cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	5,6	—	(0-1) Topsoil
1-2	SS-2	8,12	—	(1-2) Brown sand 6" Brown clay and gravel
2-4	SS-3	7,7	—	(2-3') Brown clayey silt, wet.
		6,7		
4-6	SS-4	10,12	—	(3-4') Black clayey silt, trace fine gravel, sand, Fill
		15,18		(4-5') Black silty clay, sand
				(5-6') Brown-Tan medium sand and gravel, dry
				END OF Boring AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Spl A spoon
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman
North runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-4 3
Sheet: 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	8,15	-	(0-1) Top soil, cobbles, roots, dry
1-2	SS-2	18,28	-	(1-2) Brown Sand, medium to coarse gravel, Black silt compact at 2 FT, dry.
2-4	SS-3	16,12	-	(2'-3') Black-Brown fine-medium Sand and silt, compact with trace gravel
		16,15		(3-4') Black-Gray silt and clay trace slag & organic material wet, soft, Fill.
4-6	SS-4	-	-	(4-5 1/2) Brown Clayey Sand, trace fine gravel, damp
				(5 1/2 - 6.0') Brown Sand
				(END OF Boring AT 6')

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: Split spoon CME75
Drilling Method: Splitspoon sampler
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-44
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / Cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	1/2/1	-	(0-1) asphalt (0-4") 4"-12" Brown - Black coarse to medium Sand and gravel
1-2	SS-2		-	(1'-2') Brown Sand coarse - medium and gravel, little cobbles, dry
2-4	SS-3	32,26 10,13	-	(2'-3') Brown Sand and gravel
4-6	SS-4	26,32 50,55	-	(3-4') Brownish - Light Red Clay
				(4'-6') Tan coarse Sand and medium gravel, stones, Light Brown Tan medium - coarse sand at 6FT
				END OF BORING AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Splitspoon
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman Northrop Bethpage NY
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-45
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny Cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	22,22	—	(0-1) asphalt (0-4") Dark Brown medium-coarse sand, some fine-medium gravel. dry.; fr stone.		
1-2	SS-2	23,29	-	(1-2') Dark Brown medium-coarse sand, some gravel, black-Brown clay, soft. damp		
2-4	SS-3	25,45	—	(2-4) stones, cobbles, sand, Fill Tan-Blonde medium Sand crushed rock		
		60,62				
4-6	SS-3	>200	—	(4'-6') Light Tan-Blonde coarse Sand, abundant qtz subrounded medium-large gravel.		

END OF BORING AT 6 FT

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Split spoon
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-96
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	8, 10	—	(0-1) Top soil, organic material roots, twigs
1-2	SS-2	10, 12	—	(1-2) Top soil Brown-Black Sand, silt, tr roots, gravel.
2-4	SS-3	5, 10	✓	(2-3) Brown clay and silt
		20, 51		(3-4) Brown coarse Sand and gravel.
4-6	SS-4	40, 68	—	(4-6) well sorted Brown-Tan medium Sand, trace fine gravel.
		60, 60		
				END OF Boring At 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Splitspoon
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman Northrop way
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-97
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / clear
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	8,10	—	(0-1) Asphalt (0-4") Brown Sand and gravel.		
1-2	SS-2	25,35	—	(1-2) Fill Black-Brown sand and gravel. at (1½-2) Black compacted silt		
2-4	SS-3	17,18	—	(2-3½) Brown clay and silt, soft		
		20,20		(3½-4) Brown-Tan medium-fine grs Sand, well sorted.		
4-6	SS-4	25,60	—	(4'-6') Brown-Tan coarse Sand and crushed angular gravel.		
		40,30		END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller Dennis
Inspector Keith Robins
Rig Type CME 75
Drilling Method Split Spoon
Drive Hammer Weight 140 Lb

DRILLING LOG
PROJECT NAME Grumman Northrop Way
PROJECT # 1383-110
Location/Address

BORING NUMBER NR-48
Sheet 1 of 1
Boring Location

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / Cool
Date/Time Start 11/5/96
Date/Time Finish 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	5,5	-	(0-1') Top soil, roots, silt
1-2	SS-2	10,37	-	(1-2) Top soil, Brown sand and gravel
2-4	SS-3	15,18	-	(2-3½) Brown f-m Sand, wet, iron staining
		23,22		
4-6	SS-4			(3½-4) Black-Brown clay and silt, soft
		37,50	-	
		52,60		(4-6) Brown-tan coarse Sand and fine medium qtz gravel, dry

END OF Boring AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: SPT, 4" spun 2 inch
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: GRUMMAN
Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-49
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool
Date/Time Start: 11/5/96
Date/Time Finish: 11/5/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	6,11	-	(0-1) Top Soil, Black silt, Sand, roots, grass, gravel
1-2	SS-2	15,37	-	(1-2) Brown - Black sand, silt, gravel, Fill
2-4	SS-3	40,45	-	(2-4) (2-3½') Brown coarse-medium rnd sand, little fine gravel
		28,32		(3½-4') Black silt and soft Brown clay damp
4-6	SS-4	45,60	-	(4-6) Brown Sand medium-coarse, and fine gravel. (Saturated wet)
		65,60		(5½-6") Tan-white coarse-fine Sand, crushed gravel. dry
				END OF Boring AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Splitspoon 2 inch
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: GRUMMAN
North Runway
PROJECT #: 1393-110
Location/Address:

BORING NUMBER NR-50
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool 60°F
Date/Time Start: 11/6/96
Date/Time Finish: 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	5,15	=	(0-1') @-4" asphalt 4"-10" Brown, Sand, silt and gravel		
1-2	SS-2	20, 34	—	(1-2') 10"-24" Black silt and clay compacted, damp		
2-4	SS-3	28, 34	—	(2'-3') Brown clay and silt, medium gravel. (moist)		
		34,26		(3-4') Tan coarse sand and coarse - medium subrounded gravel.		
				END OF Boring AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

OVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-51
Driller Dennis	PROJECT NAME GRUMMAN Northrunway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon 2inch		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny/cool 60°F

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	8,11	—	(0-1) Top soil, black silt, sand, roots, dry		
1-2	SS-2	12,14	—	(1-2) Dark Black silt, fine-med sand, fine gravel, damp.		
2-4	SS-3	6,7	—	(2-4) Brown-Gray silt and clay, trace fine gravel, (damp)		
		5,8		END OF Boring AT 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Split spoon 2inch
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: GRUMMAN
Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-52
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool 60°F
Date/Time Start: 11/6/96
Date/Time Finish: 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	7,30	—	(0-1) asphalt (0-4"), Brown silt and f-c Sand, dark Brown f-m sand and gravel
1-2	SS-2	33,32	—	(1'-2') Brown-Orange f-m Sand; Some black silt, gravel at tip of sample. (damp)
2-4	SS-3	8,16, 42,32	—	2'-3') Brown Silt, little clay moist, compact with f-m gravel
				(3'-4') Tan fine - coarse Brown sand, abundant fine quartz gravel.
				END of Boring AT 4FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-53
Driller Dennis	PROJECT NAME Grumman Northrop Way	Sheet 1 of 1
Inspector Keith Rubins	PROJECT # 1383-1100	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Split Spoon 2 inch		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny Clear 66°F

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	-	-	(0-1) Top soil, black silt, gravel, root		
1-2	SS-2	-	-	(1-2) 1-1½, Black silt, little sand. 1½-2, Brown Sand coarse, little gravel.		
2-4	SS-3	27,23	-	(2-4) 2-3½, Brown Dark Sand, m-c some-little silt, gravel (wet)		
		23,40				
4-6	SS-4	40,37	-	(4-6) 3½-4, Black Compacted, silt, trace fine gravel, sand, dump		
		45,43		4-6', Tan-Light Brown f-c Sand and white f-m gravel		
				END OF Boring AT 6 FT.		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith. Robins
Rig Type: CME 75
Drilling Method: Splitspoon 2inch
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: GRUMMAN
NorthRunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-54
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / clear 60°F
Date/Time Start: 11/6/96
Date/Time Finish: 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	10,15	-	(0-1') asphalt 0-4", Brown - Black coarse - medium Sand and gravel
1-2	SS-2	30,25	-	(1-2') Dark Brown sand and gravel, silt, cobbles. Brown-Orange Sand at 2FT.
2-4	SS-3	30,25	-	(2'-4') Dark Brown-Orange coarse - fine Sand, trace cobbles, some gravel.
		12,10		
				END of Boring AT 4FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-55
Driller Dennis	PROJECT NAME GRUMMAN	Sheet 1 of 1
Inspector Keith Robins	Northrunway	Boring Location
Rig Type CME75	PROJECT # 1383-110	
Drilling Method Splitspoon 2inch	Location/Address	
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / Clear, 60°F

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	5,6	—	(0-1) Top soil, Dark Black-Brown silt, some roots.		
1-2	SS-2	5,10	—	(1'-2') Dark Black silt fine-medium sand, trace gravel. Top Soil		
2-4	SS-3	10,12 6,5	—	(2'-3') Brown-Black fine-medium Sand, Black compact silt		
				(3-4') Brown moist clay + silt, Subrounded gravel, damp slightly plastic.		
				END OF BORING AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-56
Driller Dennis	PROJECT NAME GRUMMAN	Sheet 1 of 1
Inspector K. Robins	Northrunway	Boring Location
Rig Type CME 75	PROJECT # 1383-110	
Drilling Method 5 Split spoon 2 inch	Location/Address	
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny/Cool 60°F

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	3,4	—	(0-1') Top soil, black silt, sand, roots.		
1-2	SS-2	8,19	—	(1-2') Black silt, compacted, with Brown-fine sand, trace gravel, dry.		
2-4	SS-3	12,12	—	(2-3½') Black silt, compact, trace fine gravel, sand.		
		12,13		(3½-4') Brown clayey Gravel, some fine Sand.		
				END OF Boring AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

OVTRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-57
Driller Dennis	PROJECT NAME GRUMMAN North runway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1303-110	Boring Location
Rig Type CME75	Location/Address	
Drilling Method Split spoon 2 inch		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / Cool 60°F

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	30,38	—	asphalt 0-4" (4"-12") Dark Brown Sand and gravel		
1-2	SS-2	40,42	—	(1'-2') Dark Brown coarse-fine Sand and gravel		
2-4	SS-3	42,35	—	(2'-3') Dark Brown medium Sand, little gravel, black-Gray s.H		
		32,45				
4-6	SS-4	6,6	—	(3'-4') Brown - Light Orange medium - coarse Sand, with dark brown Sand at tip		
		10,12		(4'-5') Brown fine - medium Sand		
				(5'-6') Brown silty Clay, soft, trace fine gravel. (Moist)		
				END OF Boring AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Split spoon 2 inch
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: GRUMMAN
Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-58
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool
Date/Time Start: 11/6/96
Date/Time Finish: 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	60,60	—	0-8" Asphalt Brown sand and gravel, trace cobbles.
1-2	SS-2	35,35	—	(1-2) Dark Brown Sand, silt, cobbles, stones,
2-4	SS-3	20,20	—	(2-4) 0-4" Br fine Compact Silt
		25,25		4"-14" Black silt and clay
4-6	SS-4	12,20	—	14"-18" Dark Brown c-f Sand, cobble.
		23,17		18"-24" Dark Brown-Black fine-coarse Sand, gravel (wet)
				(4-5½) Gray-Brown coarse Sand and fine-medium gravel. (Saturated)
				(5½-6') Brown-Red silt, gray-silty clay, damp.
				END OF Boring AT 6 FT

WELL SCHEMATIC	COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-59
Driller Dennis	PROJECT NAME GRUMMAN	Sheet 1 of 1
Inspector Keith-Robins	North runway	Boring Location
Rig Type CME 75	PROJECT #	
Drilling Method Split spoon.	Location/Address	
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny/Cool

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	6,6,4,5	—	(0-1) 0-8" Asphalt Dark Brown fine-coarse Sand, gravel,		
1-2	SS-2	4,5,3,8	—	(1-2) Brown coarse-medium sand, little-some gravel Silt.		
2-4	SS-3	18,19, 20,29	—	(2-4) (2-2.5) Asphalt patch Brown-Black Soil sand, gravel + trace brick, coarse-fine sand, little silt (Asphalt odor) Fill		
				END OF Boring AT 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

OVTRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-60
Driller Dennis	PROJECT NAME SPUMMAN	Sheet 1 of 1
Inspector Keith Robins.	North runway	Boring Location
Rig Type CME75	PROJECT # 1383-110	
Drilling Method Split spoon 2 inch	Location/Address	
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / cool

Date/Time Start 11/6/96

Date/Time Finish 11/6/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	7, 8	—	(0-1') Top soil, black silt, roots.		
1-2	SS-2	8, 12	—	(1-2') Top soil (1-1½) (1½-2.0) Black Brown fine-medium sand, fine gravel.		
2-4	SS-3	15, 18	—	(2-4) Black Sand, silt, compact with fine gravel. Fill		
		13, 14				
				END OF Boring AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller Dennis
Inspector Keith Robins
Rig Type CME 75
Drilling Method Split spoon
Drive Hammer Weight 140 Lbs.

DRILLING LOG
PROJECT NAME Grumman
Northrunway
PROJECT # 1383-110
Location/Address

BORING NUMBER NR-61
Sheet 1 of 1
Boring Location

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather Overcast light drizzle
Date/Time Start 11/7/96
Date/Time Finish 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	—	/	(0-1') Topsoil, Dark Black-Brown silt, sand
1-2	SS-2	—	/	(1-2') Brown Sand and gravel 1½-2.0' Asphalt.
2-4	SS-3	22, 27	—	(2-3½) Brown coarse-medium sand, crushed qtz gravel, stone. Fill
		36, 40		(3½-4') Dark Black compacted silt, little subrounded gravel, sand, trace glass. Fill
				END OF BORING AT 4 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

OVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Berrons
Inspector: K. Rubins
Rig Type: CME75
Drilling Method: Splitspoon 2inch
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Grumman N. Runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-62
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / Cool
Date/Time Start: 11/7/96
Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	-	-	(0-1) Topsoil, Dark Black-Brown silt, sand.
1-2	SS-2	-	-	(1-2) Topsoil, roots, sand silt, trace roots/twigs.
2-4	SS-3	~~20~~ 20 25,25	-	(2-4) Dark Brown silt, sand, some-little gtz gravel, trace clay. Fill.
				END OF BORING AT 4 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

OVTRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Rubins
Rig Type: CME 75
Drilling Method: Split spoon 2inch
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman
Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-63
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool / overcast
Date/Time Start: 11/7/96
Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	5,12	-	(0-1) Top soil, sand and silt		
1-2	SS-2	20,25	-	(1-2) Top soil sand and silt		
2-4	SS-3	23,12	-	(2-4) Fill sand, silt, trace clay, and gravel.		
		13,19				
				END OF Boring. AT 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

OVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-64
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 383-1100	Boring Location
Rig Type CME75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / clear / cold

Date/Time Start 11/7/96

Date/Time Finish 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	19,21	—	Topsoil silt, roots		
1-2	SS-2	30,35	—	Topsoil roots. (1-1½ Topsoil (1½-2.0) Dark Brown silt, sand, fine gravel.		
2-4	SS-3	11,11	—	(2'-4') Black-Brown silt, compact, with fine Sand, gravel, trace clay Fill		
		9,8		END OF Boring AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-65
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Split spoon 2 inch		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold, breezy 40°F

Date/Time Start: 11/7/96

Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	9,10	—	(0-1') Top soil, dark Brown fine Sand, silt, roots.		
		12,25				
1-2	SS-2	↓	—	(1-2') Topsoil to 1½. (1½ - 2.0), Brown Sand and gravel		
2-4	SS-3	9,7	—	(2-4) Black - Brown silt, trace organics compacted, trace sand, fine gravel Fill		
		7,6				
				END OF Boring AT 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-66
Driller Dennis	PROJECT NAME GRUMMAN Northrunway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Overcast / cold

Date/Time Start: 11/7/96

Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	60,45	-	(0-1) 0-4" asphalt (4"-12") DK Brown coarse-medium sand and gravel, trace fines.		
1-2	SS-2	20,20	-	(1-2') Dark Brown coarse-medium Sand and gravel, trace fines		
2-4	SS-3	20,20	-	(2'-4') Dark Brown coarse-medium Sand, little-some fine-medium gravel., trace black-brown silt.		
		25,18				
				END OF Boring at 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME75
Drilling Method: split spoon
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: Grumman
Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-67
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: overcast / cloudy
Date/Time Start: 11/7/96
Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	60/52	-	asphalt 0-4"
		37,39		Dark Brown medium-coarse Sand and gravel.
1-2	SS-2		-	Dark Brown sand and gravel
2-4	SS-3	35,31	-	Dark Brown-Orange Sand and gravel
		20,20		
				END OF Boring AT 4 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

OVTRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-68
Driller Dennis	PROJECT NAME Grumman North Runway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method 5 Plit Spoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Cloudy/Overcast

Date/Time Start 11/7/96

Date/Time Finish 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	5,10	—	Top Soil DK Brown, Sand, twigs, silt, grass. trace organics		
1-2	SS-2	15,23	—	Top Soil, Brown sand/silt, trace fine gravel		
2-4	SS-3	28,28		(2-3') Brown Sand coarse and fine gravel		
		15,12		(3'-4') Dark Brown silt and clay		
				END OF Boring at 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-69
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Split spoon		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather cloudy/overcast

Date/Time Start 11/7/96

Date/Time Finish 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	20,15	-	0-4" asphalt 4"-12" Dark Brown Sand to Black coarse - medium gravel, asphalt		
1-2	SS-2	20,20	-	Tan - Brown - Light Orange coarse - medium Sand and gravel, cobbles, trace silt. dry.		
2-4	SS-3	17,17 18,15	-	(2-2½) Dark Brown Red compact Silt Fill (2½-4') Gravel, crushed, coarse Sand. END OF Boring AT 4FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller Dennis
Inspector K. Robins
Rig Type CME 75
Drilling Method CME 75
Drive Hammer Weight 140 Lbs.

DRILLING LOG
PROJECT NAME Grumman
Northrunway
PROJECT # 1383-110
Location/Address

BORING NUMBER NR-70
Sheet 1 of 1
Boring Location

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather Cloudy/overcast
Date/Time Start 11/7/96
Date/Time Finish 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	10,10	—	Dark Brown Sand, gravel, dry		
1-2	SS-2	12,10	—	Dark Brown sand, gravel, dry		
2-4	SS-3	13,15	—	Dark Sand, gravel, dry		
		11,12		END of Borng at 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Robins
Rig Type: CME 75
Drilling Method: Split spoon
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman North runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-71
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cloudy/overcast/cool
Date/Time Start: 11/7/96
Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	9,15	—	Brown coarse sand and gravel, trace cobbles		
1-2	SS-2	25,40	—	Brown coarse Sand and gravel		
2-4	SS-3	12,15 16,18	—	Brown-Tan coarse-medium gtz Sand, little fin gravel, trace silt		
				END OF Boring AT 4Ft		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Splitspoon 2inch
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-72
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cloudy / overcast
Date/Time Start: 11/7/96
Date/Time Finish: 11/7/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	3, 12	-	Dark Brown coarse - medium sand and gravel
1-2	SS-2	20, 25	-	Dark Brown sand and gravel
2-4	SS-3	17, 16	-	Tan Brown coarse - medium Sty sand and fine - medium Gravel, (dry - damp)
		22, 15		
4-6	SS-4	-	-	Tan Brown c-m sand + gravel
				END OF Boring AT 6'

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING LOG

DRILLING CONTRACTOR	
Driller	Dennis
Inspector	K. Robins
Rig Type	CME 75
Drilling Method	Solid stem
Drive Hammer Weight	140 Lbs.
PROJECT NAME	GRUMMAN N. Runway
PROJECT #	1383-110
Location/Address	
BORING NUMBER	NR-73
Sheet	1 of 1
Boring Location	
GROUNDWATER OBSERVATIONS	
Water Level	
Time	
Date	
Casing Depth	
Weather	Sunny / cool
Date/Time Start	11/11/96
Date/Time Finish	11/11/96
Plot Plan	

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	6,10	-	Brown Sand, cobbles, and gravel.		
1-2	SS-2	18,17	-	Durk Brown Sand and gravel, few cobbles.		
2-4	SS-3	100/2"	-	Tan-Brown Sand, little gravel, well sorted, trace fines.		
				END OF Boring at 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Robins
Rig Type: CME 75
Drilling Method: Splitspoon
Drive Hammer Weight: 140 lbs.

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-74
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool
Date/Time Start: 11/14/96
Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	7,8	—	Top soil, Black silt, sand, roots, trace cobbles.		
1-2	SS-2	20,22	—	Brown f-c-m Sand, little gravel, trace cobble, dry		
2-4	SS-3	—	—	Tan-Brown well sorted medium Sand, little gravel.		
				END OF Boring at 74'		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-75
Driller Dennis	PROJECT NAME Grumman	Sheet ____ of ____
Inspector K. Rubins	Northrunway	Boring Location ____
Rig Type CME 75	PROJECT # 1383-110	
Drilling Method Split Spoon	Location/Address ____	
Drive Hammer Weight 140 lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny/cool

Date/Time Start 11/11/96

Date/Time Finish 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	12,18	-	Tan-Brown c-m Sand + gravel, cobbles.		
1-2	SS-2	18,20	-	Dark Brown medium Sand, gravel, cobbles, trace silt, damp		
2-4	SS-3	30,32	-	Brown Sand c-f-m, gravel, trace cobbles. damp		
		35,35		END OF Boring AT 4 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary ____

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-76
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet ____ of ____
Inspector K. Robins	PROJECT # 1393-110	Boring Location ____
Rig Type CME 75	Location/Address ____	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Sunny / Cool

Date/Time Start 11/11/96

Date/Time Finish 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	10,15	~	Brown - Light Tan coarse Sand gravel, cobbles
1-2	SS-2	10,20	-	Dark Brown coarse - medium Sand and gravel, damp
2-4	SS-3	20,27	-	
		25,25		Dark Brown - Brown Sand c-f sand and fine gravel, trace silt, trace brick.
4-6	SS-4	35,40	-	
		42,50		Tan - Brown medium - coarse Sand, well sorted, trace - little fine gravel.
				END OF Boring AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary ____

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Robins
Rig Type: CME 75
Drilling Method: SP Lits Pooh
Drive Hammer Weight: 140 Lbs

DRILLING LOG
PROJECT NAME: Grumman Northrunway
PROJECT #: 1283-115
Location/Address:

BORING NUMBER NR-77
Sheet ____ of ____
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool
Date/Time Start: 11/11/96
Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	10,12	—	Dark Brown Sand and gravel, trace amounts of silt		
1-2	SS-2	18,22	—	Dark Brown Sand and gravel, trace amounts of silt		
2-4	SS-3	28,28	—	Park Brown - Brown Sand and gravel, trace amounts of silt		
		20,26				
4-6	SS-4	35,28	—	Dark Brown - Brown Sand and gravel, tr. silt.		
		30,27				
				END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING LOG

DRILLING CONTRACTOR		BORING NUMBER	NR-78
Driller	Dennis	Sheet	1 of 1
Inspector	K. Robins	Boring Location	
Rig Type	CME 75		
Drilling Method	Splitspoon		
Drive Hammer Weight	140 Lbs.		
PROJECT NAME	Grumman Northrunway		
PROJECT #	1383-110		
Location/Address			

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool

Date/Time Start: 11/11/96

Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	12,15	-	Dark Brown - Brown coarse Sand, gravel, cobbles., dry-damp		
		25,27				
1-2	SS-2	-	-	Brown Sand coarse gravel and cobbles		
2-4	SS-3	35,40	-	Brown coarse-medium Sand and some fine gravel. damp		
		45,50				
4-6	SS-4	40,45	-	Lt Orange Brown medium-coarse Sand, trace fine gravel.		
		20,35				
				END OF Boring AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Splitspoon 2 inch
Drive Hammer Weight: 140 LBS

DRILLING LOG
PROJECT NAME: Grumman
North runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-79
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / Cool
Date/Time Start: 11/11/96
Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	8,12	-	(0-1) Brown Sand c-M, gravel, cobbles
1-2	SS-2	20,22	-	(1-2) Dark Brown Sand c-M, silt, cobbles.
2-4	SS-3	10,45	-	(2-3') LT Orange - Brown medium Sorted Sand,
		30,3		(3-4') Dark Brown Sand and fine crushed gravel.
4-6	SS-4	30,35	-	(4'-6') Dark Brown - Light Orange coarse Sand and gravel, trace silt, damp
		28,22		
				END OF Boring at 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING LOG

DRILLING CONTRACTOR		PROJECT		BORING NUMBER
Driller	Dennis	PROJECT NAME	Grumman Northrunway	Sheet 1 of 1
Inspector	K. Robins	PROJECT #	1383-110	Boring Location
Rig Type	CME 75	Location/Address		
Drilling Method	Splitspoon			
Drive Hammer Weight	140 Lbs			

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny/cool

Date/Time Start: 11/11/96

Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	6,10	—	Dark Brown Sand and gravel
1-2	SS-2	12,32	—	Brown m-c Sand, some gravel, trace silt, damp
2-4	SS-3	30,32	—	Brown med- coarse Sand and fine grave, wet at 4' dark Black Silty Sand.
		44,45		
4-6	SS-4	42,35	—	Brown wet, c-m Sand, crushed fm gravel
		28,28		
				END OF Boring at 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: Keith Robins
Rig Type: CME 75
Drilling Method: Split Spoon
Drive Hammer Weight: 140 Lbs.

DRILLING LOG
PROJECT NAME: Grumman
North runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-81
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Sunny / cool
Date/Time Start: 11/11/96
Date/Time Finish: 11/11/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL
0-1	SS-1	5,5	—	(0-1) Brown Sand coarse-medium and gravel.
1-2	SS-2	7,20	—	(1-2) Brown sand and gravel petroleum odor at (1.5')
2-4	SS-3	20,25	—	(2-4) Brown Sand and gravel
		30,32		
4-6	SS-4	35,37	—	(4-6) Brown coarse-medium Sand and gravel, wet
		38,40		

END OF Boring AT 6 FT

WELL SCHEMATIC

COMMENTS

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-82
Driller Dennis	PROJECT NAME GRUMMAN N. Runway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather Cold, Windy

Date/Time Start 11/14/96

Date/Time Finish 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	4,5	—	Top soil / roots.		
1-2	SS-2	12,14	—	Top soil / sand gravel		
2-4	SS-3	11,15 13,18	—	Orange - Brown f-m Sand, fine gravel.		
4-6	SS-4	—	—	0-6" Brown - Gray Clay + silt 6"-12" Tan f-c Qtz Sand END OF Boring AT 6FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR
Driller: Dennis
Inspector: K. Rubins
Rig Type: CME 75
Drilling Method: 5 Split spoon
Drive Hammer Weight: 140 lbs

DRILLING LOG
PROJECT NAME: GRUMMAN N. Runway
PROJECT #: 1383-110
Location/Address:

BORING NUMBER NR-83
Sheet 1 of 1
Boring Location:

GROUNDWATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold, Windy
Date/Time Start: 11/14/96
Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	7,12	—	Top Soil, Brown silt, roots.		
1-2	SS-2	13,15	—	Top soil, silt, roots		
2-4	SS-3	13,12	—	Dark Brown silt coarse Sand, fine gravel, silty clay		
		10,11				
4-6	SS-4	28,32	—	Brown Clayey Silt		
		36,40				
				END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER
Driller: Dennis	PROJECT NAME: Grumman N. Runway	BORING NUMBER: NR-84
Inspector: K Robins	PROJECT #: 1383-110	Sheet: 1 of 1
Rig Type: CME 75	Location/Address:	Boring Location:
Drilling Method: Splitspoon		
Drive Hammer Weight: 140 lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Windy / cold

Date/Time Start: 11/14/96

Date/Time Finish: 11/17/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	20, 30	—	Dark Brown fine-medium Sand compact with silt, twigs, gravel. (Topsoil)		
1-2	SS-2	20, 20	—	Dark Brown silt, compact, gravel, (Top Soil)		
2-4	SS-3	10, 9	—	Black-Brown clay + silt, trace organics (. dump)		
		12, 9				
4-6	SS-4	12, 12	—	Brown clayey gravel 6"		
		35, 32		Tan-Gray Sand, silt, gravel		
		/				
				END OF Boring AT 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary:

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-85
Driller Dennis	PROJECT NAME Grumman North Runway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1593-110	Boring Location
Rig Type CME75	Location/Address	
Drilling Method SPLitspoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold, windy

Date/Time Start: 11/14/96

Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	24,30	-	Top Soil, Black-Brown silt and sand, gravel, organics		
1-2	SS-2	45,45	-	Dark Brown-Brown, f-c Sand some fine gravel, little silt		
2-4	SS-3	35,37	-	0-5" Br-Orange c Sand/gravel		
		25,24		5"-8" Clayey Sand, gravel		
4-6	SS-4	85/2"	-	Light Gray-Brown f-c Sand, some silt, gravel, medium stiff		
				trace fine sand/silt at 6'		
				END OF Boring AT 6FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-86
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold windy

Date/Time Start: 11/14/96

Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	20, 11	~	Asphalt (0-4")		
1-2	SS-2	19, 30	~	4"-12" Dark Brown - Black f-m Sand, tr gravel.		
2-4	SS-3	42, 42	~	(1-2') Dark Brown f-m Sand, little fine gravel, damp		
		47, 35		(2-4) Brown coarse sand, little angular gravel, trace f-m sand, silt.		
4-6	SS-4	17/2'	~	(4'-6') Dark Brown fine-medium Sand, little subrnd gravel, coarse sand, poorly sorted, dry		
				END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-87
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet ____ of ____
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Split spoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Windy cold

Date/Time Start: 11/14/96

Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	20,27	—	Black-Brown C-m Sand, gravel, trace asphalt, fines.		
1-2	SS-2	27,30	—	Brown Sand		
2-4	SS-3	24,24	—	Brown-Orange Sand, clay and silt gravel. damp.		
		24,40				
4-6	SS-4	10/2"	—	Orange fine-medium well sorted rnd sand. trace fine gravel. (damp) trace silt.		
				END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-88
Driller Dennis	PROJECT NAME Grumman Northrunway	Sheet 1 of 1
Inspector K. Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs.		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold, windy

Date/Time Start: 11/14/96

Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	27,28	✓	Black-Brown Sand, silt, gravel, trace asphalt.		
1-2	SS-2	35,30	✓	Black-Brown silt, gravel.		
2-4	SS-3	✓	✓	Dark Brown - Sand, gravel, silt		
4-6	SS-4	✓	✓	Brown-Orange fine-medium gtz Sand, well sorted (dry), cobbles, gravel: trace silt		
				END OF Boring at 6 FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

DVIRKA AND BARTILUCCI

DRILLING CONTRACTOR	DRILLING LOG	BORING NUMBER NR-89
Driller Dennis	PROJECT NAME Grumman N. Runway	Sheet 1 of 1
Inspector Keith Robins	PROJECT # 1383-110	Boring Location
Rig Type CME 75	Location/Address	
Drilling Method Splitspoon		
Drive Hammer Weight 140 Lbs		

GROUNDWATER OBSERVATIONS			
Water Level			
Time			
Date			
Casing Depth		-	

Weather: Cold, Windy

Date/Time Start: 11/14/96

Date/Time Finish: 11/14/96

Plot Plan

Sample Depth	Sample Number	SPT Blows	PID/FID Reading	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	COMMENTS
0-1	SS-1	20,22	/	Dark Black-Brown coarse-fine Sand, trace gravel, asphalt		
1-2	SS-2	23,25	-	Dark Brown well sorted m-f Sand, little gravel, trace silt		
2-4	SS-3	25,27	/	Brown-Black fm Sand, gravel, poorly sorted, trace coal, Fill		
		30,32				
4-6	SS-4	-	-	Brown Coarse Sand and gravel fine-medium, trace m-f sand, Poorly sorted		
				END OF Boring AT 6FT		

SPT = STANDARD PENETRATION TEST

Soil Stratigraphy Summary

Appendix B

APPENDIX B

LABORATORY RESULTS

TABLE B-1
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR1A	NR1B	NR2A	NR2B	NR3A	NR3B	NR4A	NR4B	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	
DATE OF COLLECTION	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	
PERCENT SOLIDS	86	96	84	87	88	94	85	98	
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	U	U	5,500
Toluene	U	U	U	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR5A	NR5B	NR6A	NR6B	NR7A	NR7B	NR8A	NR8B	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	
DATE OF COLLECTION	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	
PERCENT SOLIDS	97	97	87	85	82	97	83	88	
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	U	U	5,500
Toluene	U	U	U	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR9A	NR9B	NR10A	NR10B	NR11A	NR11B	NR12A	NR12B	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	
DATE OF COLLECTION	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	
PERCENT SOLIDS	81	85	86	83	94	97	89	86	
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	U	U	5,500
Toluene	U	U	U	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR13A	NR13B	NR14A-RE	NR14B	NR15A	NR15B	NR26	NR26	NYSDEC
SAMPLE DEPTH	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	0 - 2'	2' - 4'	TAGM 4046
DATE OF COLLECTION	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	10/3/96	10/3/96	APPENDIX A
PERCENT SOLIDS	85	92	82	80	88	84	96	97	CRITERIA
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	U	U	5,500
Toluene	U	U	U	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR26	NR26	NR26	NR28	NR28	NR28	NR28	NR30	NYSDEC
SAMPLE DEPTH	4' - 6'	8' - 10'	14' - 16'	0 - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 2'	TAGM 4046
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	APPENDIX A
PERCENT SOLIDS	90	93	91	89	96	97	95	95	CRITERIA
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	U	U	5,500
Toluene	U	U	U	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR30	NR32	NR32	NR32	NR33	NR33	NR34	NR34	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4' - 6'	0 - 2'	4' - 6'	8' - 10'	0 - 2'	4' - 6'	0 - 2'	4' - 6'	
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/2/96	10/2/96	10/2/96	10/2/96	
PERCENT SOLIDS	99	89	84	97	95	86	86	98	
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	1 J	U	U	U	5,500
Toluene	U	U	U	U	1 J	0.8 J	2 J	U	1,500
m&p Xylene	U	U	U	U	2 J	U	1 J	U	1,200
o-Xylene	U	U	U	U	1 J	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	U	1 J	0.3 J	0.6 J	U	----
1,3,5-Trimethylbenzene	U	U	U	U	2 J	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	0	0	0	0	8	1.1	3.6	0	----

QUALIFIERS:
U : Analyzed for but not detected.
J: Compound found below the instrument detection limit, value estimated.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								
SAMPLE IDENTIFICATION	NR37	NR37	NR37	NR37	NRSB1A	NRSB2A	NRSB2	NRSB2	NYSDEC
SAMPLE DEPTH	0 - 2'	4' - 6'	8' - 10'	12' - 14'	4" - 6"	4" - 6"	0 - 2'	4' - 6'	TAGM 4046
DATE OF COLLECTION	10/2/96	10/2/96	10/2/96	10/2/96	7/29/96	7/29/96	10/3/96	10/3/96	APPENDIX A
PERCENT SOLIDS	90	96	90	96	86	89	87	84	CRITERIA
DILUTION FACTOR	1	1	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	U	U	60
Ethylbenzene	0.7 J	U	U	0.7 J	U	U	U	U	5,500
Toluene	2 J	U	U	U	U	U	U	U	1,500
m&p Xylene	2 J	U	U	0.9 J	U	U	U	U	1,200
o-Xylene	U	U	U	0.5 J	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	0.9 J	U	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	1 J	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	U	U	----
Total VOCs	4.7	0	0	4	0	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.
J: Compound found below the instrument detection limit, value estimated.

NOTES:
----: Not established.

TABLE B-1 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.			NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	FLDBLKS	FLDBLKA	FB-6	
SAMPLE DEPTH	--	--	--	
DATE OF COLLECTION	7/29/96	7/29/96	10/2/96	
PERCENT SOLIDS	--	--	--	
DILUTION FACTOR	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	60
Ethylbenzene	U	U	U	5,500
Toluene	U	U	U	1,500
m&p Xylene	U	U	U	1,200
o-Xylene	U	U	U	1,200
Isopropylbenzene	U	U	U	----
n-Propylbenzene	U	U	U	----
p-Isopropyltoluene	U	U	U	----
1,2,4-Trimethylbenzene	U	U	U	----
1,3,5-Trimethylbenzene	U	U	U	----
n-Butylbenzene	U	U	U	----
sec-Butylbenzene	U	U	U	----
tert-Butylbenzene	U	U	U	----
Total VOCs	0	0	0	----

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
----: Not established.

TABLE B-2
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	NYTEST				
SAMPLE IDENTIFICATION	NRSSE	NRSSN	NRSSW	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0" - 3"	0" - 3"	0" - 3"		
DATE OF COLLECTION	5/7/96	5/7/96	5/7/96		
DILUTION FACTOR	20	20	10		
PERCENT SOLIDS	82	78	78		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	330	30 or MDL
bis(2-Chloroethyl)ether	U	U	U	330	----
2-Chlorophenol	U	U	U	330	800
1,3-Dichlorobenzene	U	U	U	330	1,600
1,4-Dichlorobenzene	U	U	U	330	8,500
1,2-Dichlorobenzene	U	U	U	330	7,900
2-Methylphenol	U	U	U	330	100 or MDL
2,2'-oxybis(1-Chloropropane)	U	U	U	330	----
4-Methylphenol	U	U	U	330	900
N-Nitroso-di-n-propylamine	U	U	U	330	----
Hexachloroethane	U	U	U	330	----
Nitrobenzene	U	U	U	330	200 or MDL
Isophorone	U	U	U	330	4,400
2-Nitrophenol	U	U	U	330	330 or MDL
2,4-Dimethylphenol	U	U	U	330	----
bis(2-Chloroethoxy)methane	U	U	U	330	----
2,4-Dichlorophenol	U	U	U	330	400
1,2,4-Trichlorobenzene	U	U	U	330	3,400
Naphthalene	U	U	U	330	13000
4-Chloroaniline	U	U	U	330	220 or MDL
Hexachlorobutadiene	U	U	U	330	----
4-Chloro-3-methylphenol	U	U	U	330	240 or MDL
2-Methylnaphthalene	U	U	U	330	36,400
Hexachlorocyclopentadiene	U	U	U	330	----
2,4,6-Trichlorophenol	U	U	U	330	----
2,4,5-Trichlorophenol	U	U	U	800	100
2-Chloronaphthalene	U	U	U	330	----
2-Nitroaniline	U	U	U	800	430 or MDL
Dimethylphthalate	U	U	U	330	2,000
Acenaphthylene	U	U	U	330	41,000
2,6-Dinitrotoluene	U	U	U	330	1,000
3-Nitroaniline	U	U	U	800	500 or MDL
Acenaphthene	1,000 J	U	U	330	50,000
2,4-Dinitrophenol	U	U	U	800	200 or MDL
4-Nitrophenol	U	U	U	800	100 or MDL

TABLE B-2 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	NYTEST									
SAMPLE IDENTIFICATION	NRSSE		NRSSN		NRSSW		CONTRACT	NYSDEC
SAMPLE DEPTH	0" - 3"		0" - 3"		0" - 3"		REQUIRED	TAGM 4046
DATE OF COLLECTION	5/7/96		5/7/96		5/7/96		DETECTION	APPENDIX A
DILUTION FACTOR	20		20		10		LIMITS	CRITERIA
PERCENT SOLIDS	82		78		78			
UNITS	(ug/kg)		(ug/kg)		(ug/kg)		(ug/kg)	(ug/kg)
Dibenzofuran		U		U		U	330	6200
2,4-Dinitrotoluene		U		U		U	330	----
Diethylphthalate		U		U		U	330	7,100
4-Chlorophenyl-phenylether		U		U		U	330	----
Fluorene	1,200	J		U		U	330	50,000
4-Nitroaniline		U		U		U	800	----
4,6-Dinitro-2-methylphenol		U		U		U	800	----
N-Nitrosodiphenylamine		U		U		U	330	----
4-Bromophenyl-phenylether		U		U		U	330	----
Hexachlorobenzene		U		U		U	330	410
Pentachlorophenol		U		U		U	800	1,000 or MDL
Phenanthrene	29,000		16,000		9,400		330	50,000
Anthracene	4,700	J	1,700	J	510	J	330	50,000
Carbazole	3,400	J	2,000	J	1,200	J	330	----
Di-n-butylphthalate		U		U		U	330	8,100
Fluoranthene	80,000	D	31,000		15,000		330	50,000
Pyrene	44,000		18,000		8,700		330	50,000
Butylbenzylphthalate		U		U		U	330	50,000
3,3'-Dichlorobenzidine		U		U		U	330	----
Benzo(a)anthracene	23,000		8,200	J	3,300	J	330	224 or MDL
Chrysene	25,000		10,000		5,400		330	400
bis(2-Ethylhexyl)phthalate		U		U		U	330	50,000
Di-n-octylphthalate		U		U		U	330	50,000
Benzo(b)fluoranthene	19,000		8,700		4,200	J	330	1,100
Benzo(k)fluoranthene	20,000		7,100	J	4,000	J	330	1,100
Benzo(a)pyrene	20,000		7,700	J	3,600	J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	10,000		3,500	J	1,500	J	330	3,200
Dibenzo(a,h)anthracene		U		U		U	330	14 or MDL
Benzo(g,h,i)perylene	10,000		3,400	J	1,400	J	330	50,000
Benzyl Alcohol		U		U		U	330	----
Benzoic Acid		U		U		U	800	2,700
TOTAL PAHs	286,300		115,300		57,010			100,000
TOTAL CaPAHs	117,000		45,200		22,000			10,000
TOTAL SVOCs	290,300		117,300		58,210			500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
D: Compound analyzed at a dilution factor of 40.
J: Compound found at a concentration below the detection limit.

NOTES:
---- : Not established.
: Value exceeds the NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR1A	NR1B	2NR1A	2NR1B	2NR1C	2NR1D	2NR1D DL	NR2A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4" - 6"	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4' - 5'	4" - 6"		
DATE OF COLLECTION	7/29/96	7/29/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	7/29/96		
PERCENT SOLIDS	86	90	89	90	94	84	84	88		
DILUTION FACTOR	4	5	1	1	1	1	5	2		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	100 J	120 J	U	U	U	270 J	260 J	65 J	330	50,000
Fluorene	140 J	150 J	U	U	U	300 J	290 J	72 J	330	50,000
Phenanthrene	3,200	4,000	150 J	840	70 J	5,300	6,600	1,800	330	50,000
Anthracene	580 J	670 J	U	120 J	U	1,000	990 J	250 J	330	50,000
Fluoranthene	6,000	7,700	370	1,800	140 J	9,400 E	15,000	3,100	330	50,000
Pyrene	5,200	6,700	290 J	1,400	100 J	9,800 E	12,000	3,000	330	50,000
Benzo(a)anthracene	3,200	3,900	150 J	660	47 J	5,700	5,600	1,600	330	224 or MDL
Chrysene	3,100	3,900	170 J	760	50 J	5,900	6,400	1,700	330	400
Benzo(b)fluoranthene	2,400	2,700	240 J	1,000	65 J	6,800 E	7,300	1,700	330	1,100
Benzo(k)fluoranthene	3,000	3,800	69 J	330 J	U	2,200	2,600	1,400	330	1,100
Benzo(a)pyrene	2,700	3,300	180 J	700	42 J	6,100	6,800	1,400	330	61 or MDL
Indeno(1,2,3-cd)pyrene	1,300 J	1,700 J	62 J	280 J	U	3,700	350	680 J	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	970	1,100 J	U	330	14 or MDL
Benzo(g,h,i)perylene	1,700	2,200	61 J	270 J	U	4,300	3,900	990	330	50,000
TOTAL PAHs	32,620	40,840	1,722	8,160	514	60,740	67,890	17,757		100,000
TOTAL CaPAHs	15,700	19,300	851	3,730	204	30,370	28,850	8,480		10,000
TOTAL SVOCs	32,620	40,840	1,722	8,160	514	60,740	67,890	17,757		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	NR2B	2NR2A	2NR2B	2NR2C	2NR2D	NR3A	NR3B	2NR3A		
SAMPLE DEPTH	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	1' - 2'		
DATE OF COLLECTION	7/29/96	8/23/96	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	8/23/96		
PERCENT SOLIDS	85	86	92	93	96	93	92	96		
DILUTION FACTOR	1	1	1	1	1	20	5	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330	13,000
Acenaphthene	20 J	330 U	330 U	330 U	330 U	560 J	170 J	330 U	330	50,000
Fluorene	22 J	330 U	330 U	330 U	330 U	560 J	190 J	330 U	330	50,000
Phenanthrene	500	330 U	180 J	330 U	37 J	13,000	4,400	170 J	330	50,000
Anthracene	60 J	330 U	330 U	330 U	330 U	1,700 J	690 J	330 U	330	50,000
Fluoranthene	1,100	44 J	450	330 U	73 J	23,000	7,300	460	330	50,000
Pyrene	810	330 U	350 J	330 U	56 J	23,000	6,900	280 J	330	50,000
Benzo(a)anthracene	390	330 U	160 J	330 U	330 U	9,200	4,200	130 J	330	224 or MDL
Chrysene	500	330 U	190 J	330 U	330 U	11,000	4,100	140 J	330	400
Benzo(b)fluoranthene	360 J	330 U	230 J	330 U	330 U	8,100	3,500	170 J	330	1,100
Benzo(k)fluoranthene	550	330 U	86 J	330 U	330 U	9,000	3,800	57 J	330	1,100
Benzo(a)pyrene	390	330 U	170 J	330 U	330 U	6,200	3,600	130 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	130 J	330 U	98 J	330 U	330 U	6,300 J	1,800	71 J	330	3,200
Dibenzo(a,h)anthracene	330 U	330 U	330 U	330 U	330 U	2,500 J	330 U	330 U	330	14 or MDL
Benzo(g,h,i)perylene	160 J	330 U	110 J	330 U	330 U	6,500 J	2,300	85 J	330	50,000
TOTAL PAHs	4,992	44	2,024	0	166	119,620	42,950	1,693		100,000
TOTAL CaPAHs	2,320	0	934	0	0	51,300	21,000	698		10,000
TOTAL SVOCs	4,992	44	2,024	0	166	119,620	42,950	1,693		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	2NR3B	2NR3C	2NR3D	NR4A	NR4B	NR5A	NR5B	2NR5A		
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"	10" - 12"	1' - 2'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	7/29/96	7/29/96	8/23/96		
PERCENT SOLIDS	89	97	96	87	97	94	96	92		
DILUTION FACTOR	1	1	1	1	2	20	5	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	120 J	U	69 J	23 J	80 J	640 J	120 J	U	330	50,000
Fluorene	160 J	U	80 J	27 J	64 J	690 J	150 J	U	330	50,000
Phenanthrene	580	190 J	1,200	620	1,300	15,000	3,400	460	330	50,000
Anthracene	570	U	240 J	87 J	130 J	2,100 J	600 J	94 J	330	50,000
Fluoranthene	4,700	390	2,500	1,300	2,200	26,000	6,300	1,100	330	50,000
Pyrene	3,900	250 J	1,900	1,200	1,700	23,000	5,400	720	330	50,000
Benzo(a)anthracene	2,300	83 J	1,100	550	810	10,000	2,800	360	330	224 or MDL
Chrysene	2,400	120 J	1,200	670	930	12,000	3,000	440	330	400
Benzo(b)fluoranthene	2,600	160 J	1,300	650	550 J	8,800	2,600	440	330	1,100
Benzo(k)fluoranthene	2,600	36 J	370	750	670 J	9,000	3,000	160 J	330	1,100
Benzo(a)pyrene	2,300	100 J	920	580	640 J	9,000	2,600	340 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	1,300	48 J	590	170 J	470 J	6,800 J	750 J	190 J	330	3,200
Dibenzo(a,h)anthracene	110 J	U	63 J	U	U	2,600 J	U	U	330	14 or MDL
Benzo(g,h,i)perylene	1,600	73 J	700	220 J	550 J	6,400 J	870 J	240 J	330	50,000
TOTAL PAHs	25,640	1,450	12,222	6,847	10,094	132,930	31,590	4,564		100,000
TOTAL CaPAHs	14,010	547	5,533	3,370	4,070	58,100	14,750	1,950		10,000
TOTAL SVOCs	25,640	1,450	12,222	6,847	10,094	132,930	31,590	4,564		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	2NR5B	2NR5C	2NR5D	NR6A	NR6B	2NR6A	2NR6B	2NR6C		
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	1' - 2'	2' - 3'	3' - 4'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	8/23/96	8/23/96	8/23/96		
PERCENT SOLIDS	88	96	89	85	89	90	90	96		
DILUTION FACTOR	1	1	1	2	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	96 J	U	46 J	58 J	U	U	U	U	330	50,000
Fluorene	130 J	U	61 J	67 J	U	U	U	U	330	50,000
Phenanthrene	1,900	U	1,000	1,200	74 J	U	250 J	U	330	50,000
Anthracene	460	U	190 J	180 J	13 J	U	U	U	330	50,000
Fluoranthene	3,600	38 J	2,100	2,200	210 J	U	570	47 J	330	50,000
Pyrene	2,600	U	1,400	2,000	170 J	U	470	43 J	330	50,000
Benzo(a)anthracene	1,600	U	790	960	79 J	U	200 J	U	330	224 or MDL
Chrysene	1,600	U	950	990	96 J	U	230 J	U	330	400
Benzo(b)fluoranthene	1,600	U	1,100	870	85 J	U	270 J	U	330	1,100
Benzo(k)fluoranthene	690	U	300 J	800	89 J	U	91 J	U	330	1,100
Benzo(a)pyrene	1,600	U	740	760 J	77 J	U	200 J	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	910	U	460	370 J	U	U	120 J	U	330	3,200
Dibenzo(a,h)anthracene	74 J	U	39 J	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	1,000	U	560	U	U	U	140 J	U	330	50,000
TOTAL PAHs	17,960	38	9,736	10,445	893	0	2,541	90		100,000
TOTAL CaPAHs	8,174	0	4,379	4,740	426	0	1,111	0		10,000
TOTAL SVOCs	17,960	38	9,736	10,445	893	0	2,541	90		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	2NR6D	NR7A	NR7B	NR8A	NR8B	NR9A	NR9B	2NR9A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4' - 5'	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"	10" - 12"	1' - 2'		
DATE OF COLLECTION	8/23/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	8/23/96		
PERCENT SOLIDS	83	83	86	81	88	82	85	93		
DILUTION FACTOR	1	4	1	5	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	120 J	U	190 J	23 J	46 J	U	72 J	330	50,000
Fluorene	U	170 J	U	250 J	26 J	53 J	U	75 J	330	50,000
Phenanthrene	210 J	3,300	150 J	4,800	450	840	170 J	900	330	50,000
Anthracene	U	560 J	25 J	690 J	58 J	130 J	20 J	300 J	330	50,000
Fluoranthene	420 U	5,800	340 J	6,800	880	1,400	320 J	1,900	330	50,000
Pyrene	330 J	4,700	280 J	6,300	730	1,500	280 J	1,500	330	50,000
Benzo(a)anthracene	150 J	2,200	130 J	3,000	320 J	730	120 J	910	330	224 or MDL
Chrysene	160 J	2,600	150 J	3,100	380	860	160 J	850	330	400
Benzo(b)fluoranthene	190 J	2,300	120 J	2,300	390	1,000	140 J	930	330	1,100
Benzo(k)fluoranthene	66 J	2,700	170 J	2,400	440	1,100	180 J	380	330	1,100
Benzo(a)pyrene	140 J	2,200	120 J	2,200	330 J	760	110 J	760	330	61 or MDL
Indeno(1,2,3-cd)pyrene	86 J	730 J	U	1,100 J	89 J	260 J	U	350 J	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	130 J	330	14 or MDL
Benzo(g,h,i)perylene	98 J	U	U	1,400 J	U	360 J	U	350	330	50,000
TOTAL PAHs	1,850	27,380	1,485	34,530	4,116	9,039	1,500	9,397		100,000
TOTAL CaPAHs	792	13,730	690	14,100	1,949	4,710	710	4,300		10,000
TOTAL SVOCs	1,850	27,380	1,485	34,530	4,116	9,039	1,500	9,397		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	2NR9B	2NR9C	2NR9D	NR10A	NR10B	NR11A	NR11B	2NR11A		
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"	10" - 12"	1' - 2'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	7/29/96	7/29/96	8/23/96		
PERCENT SOLIDS	96	87	91	86	87	87	96	97		
DILUTION FACTOR	1	1	1	1	4	5	2	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	12 J	40 J	U	12 J	U	330	13,000
Acenaphthene	U	U	U	64 J	U	130 J	85 J	U	330	50,000
Fluorene	U	U	U	68 J	45 J	140 J	93 J	U	330	50,000
Phenanthrene	U	U	U	880	430 J	3,100	2,000	U	330	50,000
Anthracene	U	U	U	150 J	31 J	270 J	190 J	U	330	50,000
Fluoranthene	90 J	86 J	U	1,300	380 J	4,400	2,600	U	330	50,000
Pyrene	82 J	77 J	U	2,100	340 J	3,900	2,400	U	330	50,000
Benzo(a)anthracene	41 J	47 J	U	730	160 J	1,600 J	970	U	330	224 or MDL
Chrysene	40 J	44 J	U	960	240 J	2,300	1,400	U	330	400
Benzo(b)fluoranthene	58 J	66 J	U	1,200	170 J	1,500 J	1,000	U	330	1,100
Benzo(k)fluoranthene	U	U	U	1,400	130 J	2,000	1,200	U	330	1,100
Benzo(a)pyrene	36 J	46 J	U	870	140 J	1,800 J	1,100	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	640	34 J	760 J	290 J	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	290 J	97 J	U	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	1,000	27 J	680 J	230 J	U	330	50,000
TOTAL PAHs	347	366	0	11,434	2,167	22,870	13,667	0		100,000
TOTAL CaPAHs	175	203	0	5,860	874	10,260	6,057	0		10,000
TOTAL SVOCs	347	366	0	11,434	2,167	22,870	13,667	0		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	2NR11B	2NR11C	2NR11D	NR12A	NR12B	NR13A	NR13B	NR14A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96		
PERCENT SOLIDS	95	89	86	85	92	82	96	84		
DILUTION FACTOR	1	1	1	2	2	1	1	2		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	8 J	U	U	U	U	330	13,000
Acenaphthene	U	U	U	44 J	31 J	U	5 J	23 J	330	50,000
Fluorene	U	U	U	39 J	34 J	U	6 J	24 J	330	50,000
Phenanthrene	130 J	69 J	48 J	500 J	380 J	120 J	120 J	420 J	330	50,000
Anthracene	U	U	U	71 J	88 J	8 J	8 J	55 J	330	50,000
Fluoranthene	230 J	96 J	81 J	740 J	550 J	190 J	190 J	790	330	50,000
Pyrene	170 J	75 J	67 J	610 J	470 J	160 J	180 J	570 J	330	50,000
Benzo(a)anthracene	82 J	46 J	U	330 J	300 J	67 J	60 J	190 J	330	224 or MDL
Chrysene	96 J	45 J	U	450 J	350 J	120 J	96 J	340 J	330	400
Benzo(b)fluoranthene	120 J	53 J	42 J	380 J	300 J	110 J	73 J	360 J	330	1,100
Benzo(k)fluoranthene	37 J	U	U	400 J	380 J	120 J	80 J	440 J	330	1,100
Benzo(a)pyrene	87 J	40 J	U	380 J	350 J	92 J	72 J	340 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	35 J	U	U	74 J	85 J	16 J	57 J	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	21 J	27 J	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	56 J	68 J	U	60 J	U	330	50,000
TOTAL PAHs	987	424	238	4,103	3,413	1,003	1,007	3,552		100,000
TOTAL CaPAHs	457	184	42	2,035	1,792	525	438	1,670		10,000
TOTAL SVOCs	987	424	238	4,103	3,413	1,003	1,007	3,552		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.								CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE IDENTIFICATION	NR14B	2NR14A	2NR14B	2NR14C	2NR14D	NR15A	NR15B	NR16A		
SAMPLE DEPTH	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	0 - 1'		
DATE OF COLLECTION	7/29/96	8/23/96	8/23/96	8/23/96	8/23/96	7/29/96	7/29/96	8/23/96		
PERCENT SOLIDS	84	92	92	96	91	84	92	94		
DILUTION FACTOR	1	1	1	1	1	1	4	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	U	U	28 J	280 J	U	330	50,000
Fluorene	U	U	U	U	U	27 J	390 J	U	330	50,000
Phenanthrene	66 J	240 J	U	U	U	580	2,500	130 J	330	50,000
Anthracene	8 J	64 J	U	U	U	39 J	1,200 J	U	330	50,000
Fluoranthene	140 J	350 J	U	U	U	900	4,000	310 J	330	50,000
Pyrene	140 J	270 J	U	U	U	680	3,100	210 J	330	50,000
Benzo(a)anthracene	53 J	160 J	U	U	U	180 J	1,700	78 J	330	224 or MDL
Chrysene	77 J	150 J	U	U	U	390	1,900	120 J	330	400
Benzo(b)fluoranthene	69 J	170 J	U	U	U	470	2,000	180 J	330	1,100
Benzo(k)fluoranthene	62 J	60 J	U	U	U	520	2,500	65 J	330	1,100
Benzo(a)pyrene	64 J	130 J	U	U	U	360 J	2,200	130 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	26 J	62 J	U	U	U	100 J	470 J	81 J	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	65 J	U	U	U	U	U	100 J	330	50,000
TOTAL PAHs	705	1,721	0	0	0	4,274	22,240	1,404		100,000
TOTAL CaPAHs	351	732	0	0	0	2,020	10,770	654		10,000
TOTAL SVOCs	705	1,721	0	0	0	4,274	22,240	1,404		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR16B	NR16C	NR16D	NR17A	NR17B	NR17C	NR17D	NR18A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	1' - 2'	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 1'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96		
PERCENT SOLIDS	93	96	88	85	91	100	100	90		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	94 J	U	U	U	65 J	330	50,000
Fluorene	U	U	U	68 J	U	U	U	65 J	330	50,000
Phenanthrene	U	U	U	660	120 J	U	64 J	1,100	330	50,000
Anthracene	U	U	U	150 J	U	U	U	170 J	330	50,000
Fluoranthene	85 J	41 J	U	1,000	260 J	U	170 J	2,000	330	50,000
Pyrene	65 J	U	U	860	220 J	U	120 J	1,600	330	50,000
Benzo(a)anthracene	U	U	U	440	120 J	U	65 J	740	330	224 or MDL
Chrysene	50 J	U	U	490	150 J	U	66 J	880	330	400
Benzo(b)fluoranthene	U	U	U	610	220 J	U	88 J	1,100	330	1,100
Benzo(k)fluoranthene	46 J	U	U	240 J	56 J	U	40 J	360 J	330	1,100
Benzo(a)pyrene	72 J	U	U	440	140 J	U	67 J	790	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	230 J	63 J	U	42 J	540	330	3,200
Dibenzo(a,h)anthracene	U	U	U	78 J	U	U	U	160 J	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	240 J	67 J	U	53 J	690	330	50,000
TOTAL PAHs	318	41	0	5,600	1,416	0	775	10,260		100,000
TOTAL CaPAHs	168	0	0	2,528	749	0	368	4,570		10,000
TOTAL SVOCs	318	41	0	5,600	1,416	0	775	10,260		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR18B	NR18C	NR18D	NR19A	NR19B	NR19C	NR19D	NR20A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	1' - 2'	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 1'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96		
PERCENT SOLIDS	83	94	85	89	87	96	94	86		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	70 J	330	13,000
Acenaphthene	330 U	330 U	330 U	39 J	330 U	330 U	330 U	190	330	50,000
Fluorene	330 U	330 U	330 U	43 J	330 U	330 U	330 U	300 J	330	50,000
Phenanthrene	83 J	150 J	330 U	950	330 U	39 J	330 U	2,200	330	50,000
Anthracene	330 U	330 U	330 U	110 J	330 U	330 U	330 U	510 J	330	50,000
Fluoranthene	170 J	320 J	330 U	1,900	54 J	100 J	330 U	3,100	330	50,000
Pyrene	140 J	300 J	330 U	1,500	50 J	87 J	330 U	2,400	330	50,000
Benzo(a)anthracene	81 J	160 J	330 U	640	330 U	40 J	330 U	1,300 J	330	224 or MDL
Chrysene	95 J	160 J	330 U	720	330 U	44 J	330 U	1,500 J	330	400
Benzo(b)fluoranthene	120 J	190 J	330 U	910	39 J	56 J	330 U	1,800 J	330	1,100
Benzo(k)fluoranthene	40 J	73 J	330 U	320 J	330 U	330 U	330 U	620 J	330	1,100
Benzo(a)pyrene	84 J	160 J	330 U	660	330 U	38 J	330 U	1,300 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	56 J	94 J	330 U	430	330 U	330 U	330 U	590	330	3,200
Dibenzo(a,h)anthracene	330 U	330 U	330 U	130 J	330 U	330 U	330 U	48	330	14 or MDL
Benzo(g,h,i)perylene	71 J	110 J	330 U	490	330 U	330 U	330 U	640 J	330	50,000
TOTAL PAHs	940	1,717	0	8,842	143	404	0	16,568		100,000
TOTAL CaPAHs	476	837	0	3,810	39	178	0	7,158		10,000
TOTAL SVOCs	940	1,717	0	8,842	143	404	0	16,568		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR20B	NR20C	NR20D	NR21A	NR21B	NR21C	NR21D	NR22A	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	1' - 2'	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 1'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96		
PERCENT SOLIDS	95	95	76	79	86	97	93	87		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	67 J	U	U	U	U	330	50,000
Fluorene	U	U	U	77 J	U	U	U	U	330	50,000
Phenanthrene	U	280 J	520	1,600	40 J	71 J	U	360 J	330	50,000
Anthracene	U	46 J	100 J	170 J	U	U	U	61 J	330	50,000
Fluoranthene	U	600	1,100 U	2,800	98 J	170 J	U	790	330	50,000
Pyrene	U	370	770	1,900	72 J	120 J	U	540	330	50,000
Benzo(a)anthracene	U	170 J	380 J	730	U	78 J	U	240 J	330	224 or MDL
Chrysene	U	180 J	390 J	940	43 J	73 J	U	300 J	330	400
Benzo(b)fluoranthene	U	210 J	460 U	1,100	57 J	80 J	U	340 J	330	1,100
Benzo(k)fluoranthene	U	91 J	140 J	260 J	U	U	U	97 J	330	1,100
Benzo(a)pyrene	U	170 J	330 J	800	U	63 J	U	260 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	95 J	150 J	380 J	U	U	U	140 J	330	3,200
Dibenzo(a,h)anthracene	U	U	48 J	100 J	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	110 J	190 J	400 J	U	U	U	160 J	330	50,000
TOTAL PAHs	0	2,322	4,538	11,324	310	655	0	3,278		100,000
TOTAL CaPAHs	0	916	1,858	4,310	100	294	0	1,367		10,000
TOTAL SVOCs	0	2,322	4,538	11,324	310	655	0	3,278		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR22B	NR22C	NR22D	NR23A	NR23B	NR23C	NR23D	NR26	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	1' - 2'	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 2'		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	8/23/96	10/3/96		
PERCENT SOLIDS	80	89	84	84	98	87	82	96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330	13,000
Acenaphthene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330	50,000
Fluorene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330	50,000
Phenanthrene	400 J	330 U	140 J	340 J	330 U	59 J	330 U	6 J	330	50,000
Anthracene	74 J	330 U	57 J	61 J	330 U	330 U	330 U	1 J	330	50,000
Fluoranthene	550	65 J	300 J	870	120 J	160 J	58 J	8 J	330	50,000
Pyrene	400 J	47 J	220 J	590	80 J	110 J	41 J	10 J	330	50,000
Benzo(a)anthracene	220 J	330 U	150 J	270 J	35 J	47 J	330 U	5 J	330	224 or MDL
Chrysene	210 J	330 U	150 J	320 J	330 U	60 J	330 U	9 J	330	400
Benzo(b)fluoranthene	300 J	44 J	180 J	370 J	42 J	53 J	330 U	7 J	330	1,100
Benzo(k)fluoranthene	63 J	330 U	53 J	110 J	330 U	330 U	330 U	5 J	330	1,100
Benzo(a)pyrene	210 J	330 U	130 J	290 J	330 U	48 J	330 U	6 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	100 J	330 U	55 J	160 J	330 U	330 U	330 U	5 J	330	3,200
Dibenzo(a,h)anthracene	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330 U	330	14 or MDL
Benzo(g,h,i)perylene	120 J	330 U	59 J	210 J	330 U	39 J	330 U	6 J	330	50,000
TOTAL PAHs	2,647	156	1,494	3,591	277	576	99	68		100,000
TOTAL CaPAHs	1,103	44	718	1,520	77	208	0	37		10,000
TOTAL SVOCs	2,647	156	1,494	3,591	277	576	99	68		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
Shaded: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR26	NR26	NR26	NR28	NR28	NR28	NR28	NR30	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4' - 6'	8' - 10'	14' - 16'	0' - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 2'		
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96		
PERCENT SOLIDS	97	95	92	95	96	97	85	96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	5 J	U	U	U	13 J	330	13,000
Acenaphthene	U	U	U	U	U	U	U	31 J	330	50,000
Fluorene	U	U	U	U	U	U	U	22 J	330	50,000
Phenanthrene	U	8 J	U	9 J	U	U	U	280 J	330	50,000
Anthracene	U	2 J	U	2 J	U	U	U	56 J	330	50,000
Fluoranthene	U	10 J	U	13 J	7 J	U	U	520	330	50,000
Pyrene	U	9 J	U	14 J	8 J	U	U	450	330	50,000
Benzo(a)anthracene	U	7 J	U	11 J	5 J	U	U	260 J	330	224 or MDL
Chrysene	U	6 J	U	16 J	6 J	U	U	330 J	330	400
Benzo(b)fluoranthene	U	4 J	U	10 J	5 J	U	U	260 J	330	1,100
Benzo(k)fluoranthene	U	4 J	U	9 J	4 J	U	U	210 J	330	1,100
Benzo(a)pyrene	U	U	U	13 J	4 J	U	U	280 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	5 J	3 J	U	U	150 J	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	55 J	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	6 J	3 J	U	U	170 J	330	50,000
TOTAL PAHs	0	50	0	113	45	0	0	3,087		100,000
TOTAL CaPAHs	0	21	0	64	27	0	0	1,545		10,000
TOTAL SVOCs	0	50	0	113	45	0	0	3,087		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR30	NR32	NR32	NR32	NR33	NR33	NR34	NR34	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	4' - 6'	0 - 2'	4' - 6'	8' - 10'	0 - 2'	4' - 6'	0 - 2'	4' - 6'		
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/2/96	10/2/96	10/2/96	10/2/96		
PERCENT SOLIDS	99	85	90	98	88	92	86	97		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	4 J	U	U	19 J	U	9 J	U	330	13,000
Acenaphthene	U	U	U	U	45 J	U	U	U	330	50,000
Fluorene	U	U	U	U	39 J	U	U	U	330	50,000
Phenanthrene	U	47 J	U	U	610	13 J	29 J	10 J	330	50,000
Anthracene	U	8 J	U	U	140 J	3 J	3 J	2 J	330	50,000
Fluoranthene	4 J	100 J	U	U	1,400	16 J	44 J	15 J	330	50,000
Pyrene	4 J	91 J	U	U	1,400	16 J	49 J	15 J	330	50,000
Benzo(a)anthracene	U	49 J	U	U	940	13 J	26 J	9 J	330	224 or MDL
Chrysene	U	69 J	U	U	1,000	16 J	37 J	9 J	330	400
Benzo(b)fluoranthene	U	52 J	U	U	890	14 J	27 J	7 J	330	1,100
Benzo(k)fluoranthene	U	47 J	U	U	740	12 J	30 J	8 J	330	1,100
Benzo(a)pyrene	U	54 J	U	U	1,000	10 J	28 J	7 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	36 J	U	U	640	11 J	19 J	5 J	330	3,200
Dibenzo(a,h)anthracene	U	12 J	U	U	210 J	6 J	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	46 J	U	U	610	13 J	23 J	6 J	330	50,000
TOTAL PAHs	8	615	0	0	9,683	143	324	93		100,000
TOTAL CaPAHs	0	319	0	0	5,420	82	167	45		10,000
TOTAL SVOCs	8	615	0	0	9,683	143	324	93		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR37	NR37	NR37	NR37	NR42	NR42	NR43	NR43	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	10/2/96	10/2/96	10/2/96	10/2/96	11/5/96	11/5/96	11/5/96	11/5/96		
PERCENT SOLIDS	96	96	89	98	80	82	85	94		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	U	24 J	U	11 J	U	330	50,000
Fluorene	U	U	U	U	22 J	U	9 J	U	330	50,000
Phenanthrene	73 J	43 J	U	U	560	12 J	180 J	11 J	330	50,000
Anthracene	9 J	6 J	U	U	86 J	U	28 J	U	330	50,000
Fluoranthene	250 J	240 J	U	U	1,100	21 J	380 J	25 J	330	50,000
Pyrene	250 J	260 J	U	U	860	18 J	260 J	20 J	330	50,000
Benzo(a)anthracene	110 J	120 J	U	U	440	10 J	150 J	11 J	330	224 or MDL
Chrysene	150 J	150 J	U	U	540	13 J	180 J	14 J	330	400
Benzo(b)fluoranthene	130 J	110 J	U	U	440	11 J	180 J	14 J	330	1,100
Benzo(k)fluoranthene	140 J	130 J	U	U	340 J	10 J	130 J	11 J	330	1,100
Benzo(a)pyrene	140 J	120 J	U	U	420	10 J	150 J	12 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	92 J	73 J	U	U	150 J	U	51 J	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	110 J	81 J	U	U	120 J	U	44 J	U	330	50,000
TOTAL PAHs	1,454	1,333	0	0	5,102	105	1,753	118		100,000
TOTAL CaPAHs	762	703	0	0	2,330	54	841	62		10,000
TOTAL SVOCs	1,454	1,333	0	0	5,102	105	1,753	118		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR46	NR46	NR48	NR48	NR51	NR51	NR53	NR53	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/5/96	11/5/96	11/5/96	11/5/96	11/6/96	11/6/96	11/6/96	11/6/96		
PERCENT SOLIDS	78	80	80	92	86	87	82	92		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	12 J	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	9 J	U	10 J	U	U	U	330	50,000
Fluorene	U	U	8 J	6 J	8 J	U	U	U	330	50,000
Phenanthrene	73 J	52 J	160 J	130 J	150 J	15 J	79 J	31 J	330	50,000
Anthracene	12 J	U	21 J	37 J	28 J	2 J	13 J	5 J	330	50,000
Fluoranthene	120 J	50 J	290 J	210 J	320 J	27 J	150 J	56 J	330	50,000
Pyrene	110 J	44 J	240 J	170 J	290 J	28 J	150 J	57 J	330	50,000
Benzo(a)anthracene	71 J	24 J	120 J	110 J	140 J	14 J	64 J	24 J	330	224 or MDL
Chrysene	94 J	42 J	150 J	100 J	170 J	19 J	87 J	31 J	330	400
Benzo(b)fluoranthene	74 J	28 J	130 J	70 J	120 J	16 J	60 J	23 J	330	1,100
Benzo(k)fluoranthene	71 J	24 J	100 J	79 J	140 J	14 J	66 J	26 J	330	1,100
Benzo(a)pyrene	76 J	23 J	120 J	77 J	140 J	14 J	69 J	24 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	37 J	16 J	70 J	45 J	64 J	10 J	58 J	20 J	330	3,200
Dibenzo(a,h)anthracene	U	U	23 J	16 J	23 J	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	33 J	U	69 J	43 J	59 J	12 J	68 J	22 J	330	50,000
TOTAL PAHs	782	303	1,510	1,093	1,662	171	864	319		100,000
TOTAL CaPAHs	422	157	713	497	797	87	404	148		10,000
TOTAL SVOCs	782	303	1,510	1,093	1,662	171	864	319		500,000

QUALIFIERS:
J: Compound found at a concentration below the CRDL, value estimated
U: Compound analyzed for but not detected

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR55	NR55	NR57	NR57	NR59	NR59	NR63	NR63	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/7/96	11/7/96		
PERCENT SOLIDS	88	93	95	95	93	96	83	94		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	7 J	U	11 J	U	4 J	U	U	U	330	13,000
Acenaphthene	26 J	8 J	U	U	U	U	140 J	U	330	50,000
Fluorene	23 J	6 J	U	U	U	U	140 J	U	330	50,000
Phenanthrene	380	100 J	12 J	14 J	21 J	U	1,400	U	330	50,000
Anthracene	59 J	19 J	3 J	4 J	6 J	U	340 J	U	330	50,000
Fluoranthene	580	180 J	19 J	68 J	35 J	U	1,600	7 J	330	50,000
Pyrene	680	150 J	24 J	87 J	37 J	U	1,200	7 J	330	50,000
Benzo(a)anthracene	280 J	84 J	13 J	49 J	25 J	U	670	U	330	224 or MDL
Chrysene	340 J	100 J	18 J	58 J	33 J	U	840	U	330	400
Benzo(b)fluoranthene	260 J	85 J	13 J	47 J	30 J	U	710	U	330	1,100
Benzo(k)fluoranthene	280 J	83 J	14 J	64 J	25 J	U	740	U	330	1,100
Benzo(a)pyrene	280 J	100 J	17 J	62 J	26 J	U	680	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	230 J	55 J	10 J	43 J	U	U	260 J	U	330	3,200
Dibenzo(a,h)anthracene	84 J	U	U	U	U	U	89 J	U	330	14 or MDL
Benzo(g,h,i)perylene	270 J	58 J	15 J	49 J	U	U	220 J	U	330	50,000
TOTAL PAHs	3,799	1,028	169	545	242	0	9,029	14		100,000
TOTAL CaPAHs	1,774	507	85	323	139	0	3,989	0		10,000
TOTAL SVOCs	3,799	1,028	169	545	242	0	9,029	14		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR65	NR65	NR66	NR66	NR67	NR67	NR69	NR69	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96		
PERCENT SOLIDS	80	82	93	94	96	96	98	98		
DILUTION FACTOR	1	1	5	1	5	1	5	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	7 J	U	U	9 J	U	6 J	U	U	330	13,000
Acenaphthene	11 J	U	37 J	12 J	110 J	14 J	U	U	330	50,000
Fluorene	12 J	U	U	12 J	95 J	10 J	U	U	330	50,000
Phenanthrene	120 J	30 J	350 J	140 J	880 J	150 J	U	U	330	50,000
Anthracene	21 J	6 J	89 J	31 J	250 J	30 J	U	U	330	50,000
Fluoranthene	180 J	45 J	530 J	210 J	1,000 J	260 J	U	U	330	50,000
Pyrene	160 J	48 J	420 J	220 J	780 J	230 J	U	U	330	50,000
Benzo(a)anthracene	94 J	27 J	320 J	150 J	530 J	150 J	U	U	330	224 or MDL
Chrysene	120 J	31 J	360 J	180 J	520 J	170 J	41 J	U	330	400
Benzo(b)fluoranthene	91 J	27 J	330 J	160 J	310 J	160 J	U	U	330	1,100
Benzo(k)fluoranthene	93 J	26 J	350 J	140 J	420 J	160 J	U	U	330	1,100
Benzo(a)pyrene	100 J	28 J	340 J	140 J	410 J	160 J	110 J	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	54 J	19 J	150 J	100 J	190 J	79 J	U	U	330	3,200
Dibenzo(a,h)anthracene	18 J	U	61 J	40 J	88 J	30 J	U	U	330	14 or MDL
Benzo(g,h,i)perylene	57 J	21 J	140 J	110 J	190 J	79 J	U	U	330	50,000
TOTAL PAHs	1,138	308	3,467	1,654	5,771	1,688	151	0		100,000
TOTAL CaPAHs	570	158	1,901	910	2,466	909	151	0		10,000
TOTAL SVOCs	1,138	308	3,467	1,654	5,771	1,688	151	0		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR71	NR71	NR72	NR72	NR73	NR73	NR74	NR74	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/11/96	11/11/96	11/11/96	11/11/96		
PERCENT SOLIDS	96	95	96	94	95	93	84	94		
DILUTION FACTOR	1	1	4	1	1	1	2	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	82 J	U	U	U	U	U	330	13,000
Acenaphthene	U	U	280 J	U	U	U	48 J	U	330	50,000
Fluorene	U	U	270 J	U	U	U	70 J	U	330	50,000
Phenanthrene	U	7 J	6,400	80 J	140 J	U	1,400	99 J	330	50,000
Anthracene	U	1 J	380 J	4 J	12 J	U	250 J	14 J	330	50,000
Fluoranthene	19 J	25 J	6,600	120 J	220 J	U	3,000 E	240 J	330	50,000
Pyrene	22 J	27 J	5,500	100 J	140 J	U	2,500	200 J	330	50,000
Benzo(a)anthracene	15 J	16 J	1,800	34 J	48 J	U	1,300	83 J	330	224 or MDL
Chrysene	20 J	19 J	2,000	50 J	74 J	U	1,800	130 J	330	400
Benzo(b)fluoranthene	19 J	16 J	2,200	38 J	46 J	U	1,500	78 J	330	1,100
Benzo(k)fluoranthene	12 J	22 J	2,100	48 J	48 J	U	820	200 J	330	1,100
Benzo(a)pyrene	16 J	18 J	2,100	37 J	42 J	U	1,500	97 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	10 J	1,400	25 J	U	U	470	60 J	330	3,200
Dibenzo(a,h)anthracene	U	U	620 J	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	11 J	1,500 J	27 J	U	U	490	U	330	50,000
TOTAL PAHs	123	172	33,932	563	770	0	15,548	1,201		100,000
TOTAL CaPAHs	82	101	12,920	232	258	0	7,790	648		10,000
TOTAL SVOCs	123	172	33,932	563	770	0	15,548	1,201		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR75	NR75	NR76	NR76	NR76	NR76	NR77	NR77	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96		
PERCENT SOLIDS	86	95	96	90	95	96	93	89		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	U	U	U	U	U	330	50,000
Fluorene	U	U	U	U	U	U	U	U	330	50,000
Phenanthrene	U	U	U	78 J	U	U	93 J	44 J	330	50,000
Anthracene	U	U	U	7 J	U	U	7 J	9 J	330	50,000
Fluoranthene	U	U	40 J	140 J	U	U	170 J	120 J	330	50,000
Pyrene	U	U	29 J	100 J	U	U	140 J	100 J	330	50,000
Benzo(a)anthracene	U	U	U	51 J	U	U	58 J	62 J	330	224 or MDL
Chrysene	U	U	U	69 J	U	U	78 J	70 J	330	400
Benzo(b)fluoranthene	U	U	U	50 J	U	U	65 J	51 J	330	1,100
Benzo(k)fluoranthene	U	U	U	51 J	U	U	54 J	56 J	330	1,100
Benzo(a)pyrene	U	U	U	44 J	U	U	61 J	61 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	U	U	U	50 J	46 J	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	**17 J**	**16 J**	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	U	U	U	52 J	45 J	330	50,000
TOTAL PAHs	0	0	69	590	0	0	680	4,950		100,000
TOTAL CaPAHs	0	0	0	265	0	0	362	2,310		10,000
TOTAL SVOCs	0	0	69	590	0	0	1,525	4,950		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR77	NR77	NR78	NR78	NR79	NR79	NR80	NR80	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 1'	1' - 2'	0 - 1'	1' - 2'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96		
PERCENT SOLIDS	95	88	98	86	98	89	94	85		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	U	U	U	20 J	U	330	50,000
Fluorene	U	U	U	U	U	U	20 J	U	330	50,000
Phenanthrene	U	U	30 J	31 J	54 J	U	240 J	36 J	330	50,000
Anthracene	U	U	4 J	12 J	4 J	U	58 J	7 J	330	50,000
Fluoranthene	U	U	85 J	160 J	110 J	9 J	440	130 J	330	50,000
Pyrene	U	U	94 J	160 J	100 J	9 J	460	120 J	330	50,000
Benzo(a)anthracene	U	U	40 J	120 J	47 J	U	330 J	76 J	330	224 or MDL
Chrysene	U	U	59 J	110 J	64 J	U	340 J	84 J	330	400
Benzo(b)fluoranthene	U	U	48 J	80 J	46 J	U	270 J	69 J	330	1,100
Benzo(k)fluoranthene	U	U	46 J	83 J	44 J	U	250 J	64 J	330	1,100
Benzo(a)pyrene	U	U	48 J	98 J	48 J	U	330 J	76 J	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	46 J	66 J	37 J	U	230 J	55 J	330	3,200
Dibenzo(a,h)anthracene	U	U	16 J	23 J	12 J	U	85 J	18 J	330	14 or MDL
Benzo(g,h,i)perylene	U	U	50 J	65 J	39 J	U	230 J	58 J	330	50,000
TOTAL PAHs	0	0	566	1,008	605	18	3,303	792		100,000
TOTAL CaPAHs	0	0	303	580	298	0	1,835	441		10,000
TOTAL SVOCs	0	0	566	1,008	605	18	3,303	792		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR81	NR81	NRSB1A	NRSB2	NRSB2	NRSB2A	FLDBLKS	FLDBLKA	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0 - 1'	1' - 2'	4" - 6"	0 - 2'	4' - 6'	4" - 6"	--	--		
DATE OF COLLECTION	11/11/96	11/11/96	7/29/96	10/3/96	10/3/96	7/29/96	7/29/96	7/29/96		
PERCENT SOLIDS	95	90	83	92	98	89	--	--		
DILUTION FACTOR	1	1	2	1	1	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/L)	(ug/L)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	19 J	42 J	U	U	21 J	U	U	330	50,000
Fluorene	U	11 J	37 J	U	U	22 J	U	U	330	50,000
Phenanthrene	27 J	360 J	560 J	31 J	U	330 J	U	U	330	50,000
Anthracene	5 J	63 J	78 J	5 J	U	46 J	U	U	330	50,000
Fluoranthene	110 J	1,600	850	71 J	U	500	U	U	330	50,000
Pyrene	98 J	1,800	790 J	66 J	U	470	U	U	330	50,000
Benzo(a)anthracene	60 J	1,100	420 J	29 J	U	230 J	U	U	330	224 or MDL
Chrysene	68 J	1,400	560 J	41 J	U	280 J	U	U	330	400
Benzo(b)fluoranthene	66 J	1,300	420 J	28 J	U	220 J	U	U	330	1,100
Benzo(k)fluoranthene	54 J	1,200	560 J	27 J	U	250 J	U	U	330	1,100
Benzo(a)pyrene	66 J	1,600	480 J	30 J	U	240 J	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	46 J	730	75 J	22 J	U	36 J	U	U	330	3,200
Dibenzo(a,h)anthracene	14 J	240 J	U	7 J	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	51 J	670	57 J	28 J	U	28 J	U	U	330	50,000
TOTAL PAHs	664	12,093	4,929	385	0	2,673	0	0		100,000
TOTAL CaPAHs	373	7,570	2,515	184	0	1,256	0	0		10,000
TOTAL SVOCs	664	12,093	4,929	385	0	2,673	0	0		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-3 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	SB FB-1	SB FB-2	SB FB-3	FB-6	FB#1	FB#2	FB#3	FB#7	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	--	--	--	--	--	--	--	--		
DATE OF COLLECTION	8/23/96	8/23/96	8/23/96	10/2/96	11/5/96	11/5/96	11/6/96	11/11/96		
PERCENT SOLIDS	--	--	--	--	--	--	--	--		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	U	U	U	U	U	U	U	330	13,000
Acenaphthene	U	U	U	U	U	U	U	U	330	50,000
Fluorene	U	U	U	U	U	U	U	U	330	50,000
Phenanthrene	U	U	U	U	U	U	U	U	330	50,000
Anthracene	U	U	U	U	U	U	U	U	330	50,000
Fluoranthene	U	U	U	U	U	U	U	U	330	50,000
Pyrene	U	U	U	U	U	U	U	U	330	50,000
Benzo(a)anthracene	U	U	U	U	U	U	U	U	330	224 or MDL
Chrysene	U	U	U	U	U	U	U	U	330	400
Benzo(b)fluoranthene	U	U	U	U	U	U	U	U	330	1,100
Benzo(k)fluoranthene	U	U	U	U	U	U	U	U	330	1,100
Benzo(a)pyrene	U	U	U	U	U	U	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	U	U	U	U	U	U	U	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	U	U	U	U	U	U	U	U	330	50,000
TOTAL PAHs	0	0	0	0	0	0	0	0		100,000
TOTAL CaPAHs	0	0	0	0	0	0	0	0		10,000
TOTAL SVOCs	0	0	0	0	0	0	0	0		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
▒▒: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-4
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
FUEL-RELATED CONSTITUENTS

ANALYTICAL LABORATORY	NYTEST			
SAMPLE LOCATION	NRSSE	NRSSN	NRSSW	FBLK10
SAMPLE DEPTH	0" - 3"	0" - 3"	0" - 3"	---
DATE OF COLLECTION	5/7/96	5/7/96	5/7/96	5/7/96
PERCENT SOLIDS	82	78	78	NA
DILUTION FACTOR	1	1	1	1
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Gasoline	U	U	U	U
TPH (as Gasoline)	ND	ND	ND	ND
Kerosene	U	U	U	U
TPH (as Kerosene)	ND	ND	ND	ND
#2 Fuel Oil	U	U	U	U
TPH (as #2 Fuel Oil)	ND	ND	ND	ND
#6 Fuel Oil	U	U	U	U
TPH (as #6 Fuel Oil)	ND	ND	ND	ND
Lubricating Oil	U	U	U	U
TPH (as Lubricating Oil)	ND	ND	ND	ND
TPH (as 10W40)*	400	82	67	ND

QUALIFIERS
U: Compound analyzed for but not detected.
ND: Not detected.

NOTES
*: The peaks present in the samples are present in the 10W40 retention time range. However, the peak pattern does not match the pattern.

TABLE B-5
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
GLYCOLS

SAMPLE IDENTIFICATION	SAMPLE DEPTH	DATE OF COLLECTION	RESULTS (mg/kg)
NR1A	4" - 6"	7/29/96	2.80
NR1B	10" - 12"	7/29/96	2.05
NR2A	4" - 6"	7/29/96	3.62
NR2B	10" - 12"	7/29/96	4.65
NR3A	4" - 6"	7/29/96	4.19
NR3B	10" - 12"	7/29/96	3.85
NR4A	4" - 6"	7/29/96	6.48
NR4B	10" - 12"	7/29/96	3.06
NR5A	4" - 6"	7/29/96	3.02
NR5B	10" - 12"	7/29/96	3.26
NR6A	4" - 6"	7/29/96	4.13
NR6B	10" - 12"	7/29/96	4.48
NR7A	4" - 6"	7/29/96	4.32
NR7B	10" - 12"	7/29/96	3.69
NR8A	4" - 6"	7/29/96	3.81
NR8B	10" - 12"	7/29/96	4.88
NR9A	4" - 6"	7/29/96	3.66
NR9B	10" - 12"	7/29/96	3.98
NR10A	4" - 6"	7/29/96	< 0.57
NR10B	10" - 12"	7/29/96	2.73
NR11A	4" - 6"	7/29/96	2.43
NR11B	10" - 12"	7/29/96	2.69
NR12A	4" - 6"	7/29/96	2.82
NR12B	10" - 12"	7/29/96	2.77
NR13A	4" - 6"	7/29/96	2.13
NR13B	10" - 12"	7/29/96	2.38
NR14A	4" - 6"	7/29/96	3.41
NR14B	10" - 12"	7/29/96	3.42
NR15A	4" - 6"	7/29/96	2.88
NR15B	10" - 12"	7/29/96	2.78
NRSB1A	4" - 6"	7/29/96	2.32
NRSB2A	4" - 6"	7/29/96	2.26
FLDBLKA	----	7/29/96	< 0.05
FLDBLKS	----	7/29/96	< 0.05

TABLE B-6
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	NYTEST			IEA, Inc.						
SAMPLE IDENTIFICATION	NRSSE	NRSSN	NRSSW	NR1A	NR1B	2NR1A	2NR1B	2NR1C	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0" - 3"	0" - 3"	0" - 3"	4" - 6"	10" - 12"	1' - 2'	2' - 3'	3' - 4'		
DATE OF COLLECTION	5/7/96	5/7/96	5/7/96	07/29/96	07/29/96	08/23/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	82.0	78.0	78.0	83.4	92.8	88.6	90.4	94.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	7.1 B	3.4 B	4.1 B	0.32 B	0.26 B	U	0.335 B	U	0.110	----
Arsenic	119	147	276	42.9	24.1	5.54	4.41	1.21	0.282	3-12*
Beryllium	0.30 B	U	U	0.46 B	0.28 B	0.248 B	0.163 B	0.149 B	0.010	0-1.75
Cadmium	0.91 B	0.21 B	1.6	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	61.4	18.4	30.0	26.4	16.1	7.60	12.0	2.40	0.058	1.5-40*, (50***)
Copper	50.1	41.2	45.4	39.2	18.2	6.69	3.55	2.54	0.106	1-50
Lead	273	131	166	67.5	39.4	7.64	8.12	1.57	0.066	200-500**
Mercury	0.60	0.70	0.55	0.28	0.14	U	U	U	0.100	0.001-0.2
Nickel	12.3	7.2 B	9.7	7.6	4.9	3.23	2.09	1.58	0.137	0.5-25
Selenium	1.3	0.93 B	1.5	0.78	0.30 B	U	U	U	0.229	0.1-3.9
Silver	0.33 B	U	U	U	U	U	U	U	0.032	----
Thallium	3.3	2.7	2.2 B	1.1 B	0.60 B	U	U	U	0.737	----
Zinc	142	104	111	44.4	36.7	14.7	10.8	4.97	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.		NYTEST	IEA, Inc.		NYTEST	IEA, Inc.		INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE IDENTIFICATION	2NR1D	NR2A	CNR2A	CNR2A	NR2B	CNR2B	CNR2B	2NR2A		
SAMPLE DEPTH	4' - 5'	4" - 6"	4" - 6"	4" - 6"	10" - 12"	10" - 12"	10" - 12"	1' - 2'		
DATE OF COLLECTION	08/23/96	07/29/96	08/20/96	08/20/96	07/29/96	08/20/96	08/20/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	83.8	86.7	83.8	86.7	83.7	87.3	93.0	85.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	0.338 B	U	NA	NA	U	NA	NA	0.149 B	0.110	----
Arsenic	21.6	40.1	36.4	41.8	28.9	42.9	16.8	16.4	0.282	3-12*
Beryllium	0.216 B	0.36 B	NA	NA	0.41 B	NA	NA	0.25 B	0.010	0-1.75
Cadmium	U	U	NA	NA	U	NA	NA	U	0.017	0.1-1, (10***)
Chromium	28.6	27.3	NA	NA	16.7	NA	NA	7.26	0.058	1.5-40*, (50***)
Copper	13.6	30.6	NA	NA	35.4	NA	NA	10.2	0.106	1-50
Lead	63.1	30.1	NA	NA	29.1	NA	NA	8.72	0.066	200-500**
Mercury	U	0.32	U	0.28	0.25	U	U	U	0.100	0.001-0.2
Nickel	5.27	5.8	NA	NA	7.2	NA	NA	3.04	0.137	0.5-25
Selenium	0.378 B	0.92	NA	NA	0.75	NA	NA	0.566 B	0.229	0.1-3.9
Silver	U	U	NA	NA	U	NA	NA	U	0.032	----
Thallium	U	0.71 B	NA	NA	0.92 B	NA	NA	U	0.737	----
Zinc	43.4	29.8	32.6	25.0	27.0	25.3	12.2	36.1	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.				NYTEST	IEA, Inc.		NYTEST		
SAMPLE IDENTIFICATION	2NR2B	2NR2C	2NR2D	NR3A	CNR3A	CNR3A	NR3B	CNR3B	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	4" - 6"	4" - 6"	10" - 12"	10" - 12"		
DATE OF COLLECTION	08/23/96	08/23/96	08/23/96	07/29/96	08/20/96	08/20/96	07/29/96	08/20/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91.9	93.1	95.7	90.6	97.1	96.8	92.8	93.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	0.217 B	0.224 B	0.25 B	NA	NA	0.20 B	NA	0.110	----
Arsenic	12.4	5.19	1.75	72.8	14.3	14.2	55.4	18.4	0.282	3-12*
Beryllium	0.219 B	0.2 B	0.183 B	0.28 B	NA	NA	0.22 B	NA	0.010	0-1.75
Cadmium	U	U	U	U	NA	NA	U	NA	0.017	0.1-1, (10***)
Chromium	6.39	6.10	3.89	13.7	NA	NA	11.4	NA	0.058	1.5-40*, (50***)
Copper	8.74	5.82	2.84	18.5	NA	NA	14.0	NA	0.106	1-50
Lead	12.7	4.26	1.96	35.3	NA	NA	17.8	NA	0.066	200-500**
Mercury	U	U	U	0.19	U	U	0.21	U	0.100	0.001-0.2
Nickel	3.07	2.75	1.93	4.9	NA	NA	3.8 B	NA	0.137	0.5-25
Selenium	0.326 B	0.319 B	U	0.56	NA	NA	0.24 B	NA	0.229	0.1-3.9
Silver	U	U	0.0460 B	U	NA	NA	U	NA	0.032	----
Thallium	U	U	U	0.51 B	NA	NA	0.34 B	NA	0.737	----
Zinc	14.6	8.27	5.81	29.4	22.4	22.3	15.3	21.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	CNR3B	2NR3A	2NR3B	2NR3C	2NR3D	NR4A	NR4B	NR5A	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"		
DATE OF COLLECTION	08/20/96	08/23/96	08/23/96	08/23/96	08/23/96	07/29/96	07/29/96	07/29/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96.8	96.0	88.7	97.3	96.1	85.6	96.8	91.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	U	U	U	U	U	U	0.22 B	0.110	----
Arsenic	17.5	18.2	8.38	1.74	4.06	31.6	4.7	6.9	0.282	3-12*
Beryllium	NA	0.158 B	0.161 B	0.131 B	0.144 B	0.37 B	0.16 B	0.23 B	0.010	0-1.75
Cadmium	NA	U	U	U	U	U	U	0.29 B	0.017	0.1-1, (10***)
Chromium	NA	3.82	5.72	6.41	6.79	14.6	4.6	14.9	0.058	1.5-40*, (50***)
Copper	NA	4.26	5.45	2.80	4.23	30.0	6.4	12.9	0.106	1-50
Lead	NA	2.73	10.9	2.67	6.53	28.2	4.2	79.1	0.066	200-500**
Mercury	U	U	U	U	U	0.27	U	0.28	0.100	0.001-0.2
Nickel	NA	2.24	2.36	2.24	2.54	6.0	3.7 B	5.6	0.137	0.5-25
Selenium	NA	U	0.373 B	0.236 B	U	0.66	0.18 B	U	0.229	0.1-3.9
Silver	NA	U	U	U	U	U	U	U	0.032	----
Thallium	NA	U	U	U	U	0.48 B	U	0.31 B	0.737	----
Zinc	19.1	19.7	15.1	7.15	11.2	24.6	8.0	49.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR5B	2NR5A	2NR5B	2NR5C	2NR5D	NR6A	NR6B	2NR6A	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	1' - 2'		
DATE OF COLLECTION	07/29/96	08/23/96	08/23/96	08/23/96	08/23/96	07/29/96	07/29/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96.5	92.1	88.6	96.3	89.2	84.1	85.6	89.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.110	----
Arsenic	4.3	10	3.56	1.95	2.10	23.3	23.1	1.51	0.282	3-12*
Beryllium	0.19 B	0.243 B	0.104 B	0.101 B	0.151 B	0.39 B	0.45 B	0.141 B	0.010	0-1.75
Cadmium	U	0.0304 B	U	0.11 B	0.037 B	U	U	U	0.017	0.1-1, (10***)
Chromium	8.6	8.37	5.56	3.88	10.8	16.0	17.0	5.15	0.058	1.5-40*, (50***)
Copper	7.5	16.6	5.62	3.44	3.69	37.1	39.1	2.36	0.106	1-50
Lead	13.1	21.5	10.4	2.63	38.0	43.4	29.5	2.29	0.066	200-500**
Mercury	U	0.127	U	U	U	0.36	0.26	U	0.100	0.001-0.2
Nickel	4.3	4.49	2.34	2.05	1.78	7.2	6.7	1.89	0.137	0.5-25
Selenium	U	0.318 B	0.412 B	0.586	0.499 B	0.59	0.77	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	0.57 B	0.84 B	U	0.737	----
Zinc	15.5	22.2	10.4	8.44	8.33	31.8	27.1	7.23	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	2NR6B	2NR6C	2NR6D	NR7A	NR7B	NR8A	NR8B	NR9A	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"	10" - 12"	4" - 6"		
DATE OF COLLECTION	08/23/96	08/23/96	08/23/96	07/29/96	07/29/96	07/29/96	07/29/96	07/29/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	89.7	96.5	83.4	81.8	90.2	81.5	86.4	81.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	0.37 B	U	0.24 B	U	U	0.110	----
Arsenic	10.7	2.36	23.5	33.0	19.2	26.3	23.8	28.9	0.282	3-12*
Beryllium	0.266 B	0.156 B	0.468 B	0.41 B	0.36 B	0.44 B	0.39 B	0.43 B	0.010	0-1.75
Cadmium	U	U	U	0.093 B	U	0.13 B	U	U	0.017	0.1-1, (10***)
Chromium	15.3	5.20	17.9	20.6	14.0	25.4	23.5	27.4	0.058	1.5-40*, (50***)
Copper	13.9	3.54	36.4	39.4	30.0	42.4	38.0	40.9	0.106	1-50
Lead	16.3	3.66	32.5	87.9	26.3	93.6	37.9	106	0.066	200-500**
Mercury	0.124	U	0.335	0.36	0.35	0.36	0.24	0.26	0.100	0.001-0.2
Nickel	4.58	2.09	7.23	8.4	5.6	8.9	10.1	8.2	0.137	0.5-25
Selenium	0.436 B	U	0.681	0.74	0.68	0.68	0.72	0.88	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	1.08 B	0.65 B	0.71 B	0.56 B	0.56 B	0.59 B	0.737	----
Zinc	18.7	9.67	32.2	94.9	25.8	68.4	34.3	49.8	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR9B	2NR9A	2NR9B	2NR9C	2NR9D	NR10A	NR10B	NR11A	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10" - 12"	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	4" - 6"		
DATE OF COLLECTION	07/29/96	08/23/96	08/23/96	08/23/96	08/23/96	07/29/96	07/29/96	07/29/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	84.7	92.7	96.0	86.9	91.4	85.5	86.4	87.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	0.42 B	0.26 B	0.110	----
Arsenic	25.2	5.23	2.06	6.29	1.49	19.4	20.1	284	0.282	3-12*
Beryllium	0.42 B	0.169 B	0.161 B	0.180 B	0.107 B	0.30 B	0.31 B	0.32 B	0.010	0-1.75
Cadmium	U	U	U	0.0288 B	U	0.52 B	0.33 B	0.42 B	0.017	0.1-1, (10***)
Chromium	19.2	6.47	4.07	5.96	3.99	23.5	17.4	20.4	0.058	1.5-40*, (50***)
Copper	38.5	8.59	4.04	8.38	2.54	25.8	28.1	32.1	0.106	1-50
Lead	36.7	7.34	3.99	12.3	1.92	205	101	113	0.066	200-500**
Mercury	0.28	U	U	U	U	0.16	0.22	0.32	0.100	0.001-0.2
Nickel	7.4	2.60	2.16	2.86	1.54	8.2	7.4	6.9	0.137	0.5-25
Selenium	0.98	U	U	U	0.279 B	0.24 B	0.40 B	0.56 B	0.229	0.1-3.9
Silver	U	U	U	U	U	0.065 B	U	U	0.032	----
Thallium	0.73 B	U	U	U	U	0.42 B	0.59 B	0.60 B	0.737	----
Zinc	26.2	40.4	12.1	35.3	8.82	86.3	45.8	194	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.	NYTEST	IEA, Inc.		NYTEST		IEA, Inc.		INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE IDENTIFICATION	NR11A-C	CNR11A	CNR11A	NR11B	CNR11B	CNR11B	2NR11A	2NR11B		
SAMPLE DEPTH	4" - 6"	4" - 6"	4" - 6"	10" - 12"	10" - 12"	10" - 12"	1' - 2'	2' - 3'		
DATE OF COLLECTION	07/29/96	08/20/96	08/20/96	07/29/96	08/20/96	08/20/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	87.8	95.4	95.8	95.8	95.9	97.4	96.9	95.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	0.46 B	NA	NA	U	U	0.110	----
Arsenic	387	60.2	69.0	98.0	18.7	32.8	26.3	23.7	0.282	3-12*
Beryllium	NA	NA	NA	0.22 B	NA	NA	0.176 B	0.181 B	0.010	0-1.75
Cadmium	NA	NA	NA	0.24 B	NA	NA	U	U	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	15.1	NA	NA	11.8	4.94	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	11.0	NA	NA	3.55	4.72	0.106	1-50
Lead	NA	NA	NA	61.1	NA	NA	3.43	10.8	0.066	200-500**
Mercury	NA	U	U	0.15	U	U	U	U	0.100	0.001-0.2
Nickel	NA	NA	NA	4.9	NA	NA	2.15	2.56	0.137	0.5-25
Selenium	NA	NA	NA	0.21 B	NA	NA	0.376 B	0.303	0.229	0.1-3.9
Silver	NA	NA	NA	U	NA	NA	U	U	0.032	----
Thallium	NA	NA	NA	0.39 B	NA	NA	U	U	0.737	----
Zinc	NA	112	104	118	15.3	82.4	10.6	14.9	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	2NR11C	2NR11D	NR11	NR11	NR11	NR11	NR12A	NR12B	INSTRUMENT	EASTERN
SAMPLE DEPTH	3' - 4'	4' - 5'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	4" - 6"	10" - 12"	DETECTION	USA
DATE OF COLLECTION	08/23/96	08/23/96	9/27/96	9/27/96	9/27/96	9/27/96	07/29/96	07/29/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	89.4	86.5	84.6	86.4	89.2	97.4	86.7	91.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	NA	NA	NA	NA	1.1 B	0.57 B	0.110	----
Arsenic	5.43	11.8	9.9	5.7	1.5 B	1.3 B	**16.3**	**16.2**	0.282	3-12*
Beryllium	0.239 B	0.328 B	NA	NA	NA	NA	0.29 B	0.26 B	0.010	0-1.75
Cadmium	U	U	NA	NA	NA	NA	0.30 B	0.44 B	0.017	0.1-1, (10***)
Chromium	7.05	13.8	NA	NA	NA	NA	18.3	14.3	0.058	1.5-40*, (50***)
Copper	5.13	12.2	NA	NA	NA	NA	21.8	18.9	0.106	1-50
Lead	11.3	15.6	NA	NA	NA	NA	91.7	109	0.066	200-500**
Mercury	U	**0.268**	U	U	U	U	0.16	0.15	0.100	0.001-0.2
Nickel	3.17	5.33	NA	NA	NA	NA	5.9	5.8	0.137	0.5-25
Selenium	0.572	0.979	NA	NA	NA	NA	0.46 B	0.37 B	0.229	0.1-3.9
Silver	U	U	NA	NA	NA	NA	0.095 B	U	0.032	----
Thallium	U	U	NA	NA	NA	NA	0.43 B	U	0.737	----
Zinc	13.9	21.0	25.8	39.1	6.8	7.0	**56.1**	**57.8**	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.			NYTEST	IEA, Inc.		NYTEST	IEA, Inc.		
SAMPLE IDENTIFICATION	NR13A	NR13B	NR14A	CNR14A	CNR14A	NR14B	CNR14B	CNR14B	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4" - 6"	10" - 12"	4" - 6"	4" - 6"	4" - 6"	10" - 12"	10" - 12"	10" - 12"		
DATE OF COLLECTION	07/29/96	07/29/96	07/29/96	08/20/96	08/20/96	07/29/96	08/20/96	08/20/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	82.7	94.5	82.7	76.1	83.1	81.1	96.0	93.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	NA	NA	U	NA	NA	0.11	----
Arsenic	47.7	23.2	68.1	62.9	50.6	46.9	11.1	16.8	0.282	3-12*
Beryllium	0.36 B	0.19 B	0.35 B	NA	NA	0.40 B	NA	NA	0.01	0-1.75
Cadmium	U	U	0.39 B	NA	NA	0.098 B	NA	NA	0.017	0.1-1, (10***)
Chromium	16.2	26.6	18.7	NA	NA	17.4	NA	NA	0.058	1.5-40*, (50***)
Copper	41.7	8.2	35.7	NA	NA	39.0	NA	NA	0.106	1-50
Lead	37.2	16.9	79.3	NA	NA	45.3	NA	NA	0.066	200-500**
Mercury	0.27	U	0.26	U	0.34	0.27	U	0.12	0.1	0.001-0.2
Nickel	6.2	11.8	6.8	NA	NA	7.3	NA	NA	0.137	0.5-25
Selenium	0.70	U	0.63	NA	NA	0.82	NA	NA	0.229	0.1-3.9
Silver	U	U	U	NA	NA	U	NA	NA	0.032	----
Thallium	0.62 B	U	0.69 B	NA	NA	0.70 B	NA	NA	0.737	----
Zinc	29.2	17.6	43.4	49.9	36.8	35.2	14.4	19.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	2NR14A	2NR14B	2NR14C	2NR14D	NR15A	NR15B	NR16A	NR16B	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	1' - 2'	2' - 3'	3' - 4'	4' - 5'	4" - 6"	10" - 12"	0' - 1'	1' - 2'		
DATE OF COLLECTION	08/23/96	08/23/96	08/23/96	08/23/96	07/29/96	07/29/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91.8	92.5	96.4	90.9	82.7	85.8	93.5	92.9		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	0.133 B	U	0.110	----
Arsenic	6.90	2.89	2.57	4.79	91.0	28.1	10.9	9.9	0.282	3-12*
Beryllium	0.244 B	0.161 B	0.126 B	0.263 B	0.36 B	0.32 B	0.217 B	0.21 B	0.010	0-1.75
Cadmium	U	U	U	U	U	U	0.0545 B	U	0.017	0.1-1, (10***)
Chromium	6.19	4.20	2.96	7.79	14.8	13.6	8.83	7.48	0.058	1.5-40*, (50***)
Copper	9.77	3.73	3.06	5.59	42.0	24.8	13.0	13.2	0.106	1-50
Lead	9.66	3.34	2.41	5.51	31.5	23.1	35.8	17.5	0.066	200-500**
Mercury	U	U	U	U	0.41	0.16	0.117	0.12	0.100	0.001-0.2
Nickel	3.29	2.26	1.74	4.24	6.0	5.9	4.34	3.65	0.137	0.5-25
Selenium	U	U	U	0.277 B	0.64	0.37 B	0.0547	0.619	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	0.56 B	0.54 B	U	U	0.737	----
Zinc	13.8	8.14	13.6	14.2	26.6	27.4	31.3	22.2	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR16C	NR16D	NR17A	NR17B	NR17C	NR17D	NR18A	NR18B	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 1'	1' - 2'		
DATE OF COLLECTION	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.5	88.2	84.8	91.4	85.1	86.3	89.7	83.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	0.200 B	U	0.110	----
Arsenic	4.53	9.59	19.7	11.4	2.49	10.1	11.5	22.6	0.282	3-12*
Beryllium	0.132 B	0.238 B	0.324 B	0.220 B	0.192 B	0.320 B	0.272 B	0.403 B	0.010	0-1.75
Cadmium	U	U	1.13	0.0722 B	U	U	0.253 B	U	0.017	0.1-1, (10***)
Chromium	6.52	8.83	21.4	7.61	5.47	11.8	15.7	14.2	0.058	1.5-40*, (50***)
Copper	4.19	15.8	24.0	9.17	5.68	13.8	18.5	35.6	0.106	1-50
Lead	3.43	13.6	250	38.9	7.09	19.0	161	40.1	0.066	200-500**
Mercury	U	U	0.150	U	U	U	0.380	0.240	0.100	0.001-0.2
Nickel	2.22	4.17	8.23	3.54	2.57	5.19	5.40	6.05	0.137	0.5-25
Selenium	0.578	0.654	0.796	0.618	0.479 B	0.696	0.511 B	0.890	0.229	0.1-3.9
Silver	U	U	0.139 B	U	U	U	0.122 B	U	0.032	----
Thallium	U	U	U	U	U	U	U	0.993 B	0.737	----
Zinc	6.72	16.4	103	68.0	14.7	21.7	76.9	39.3	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR18C	NR18D	NR19A	NR19B	NR19C	NR19D	NR19	NR19	INSTRUMENT	EASTERN
SAMPLE DEPTH	2' - 3'	3' - 4'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	4' - 6'	6' - 8'	DETECTION	USA
DATE OF COLLECTION	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	9/27/96	9/27/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	93.6	85.3	89.1	86.8	95.8	94.5	91.8	96.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	NA	NA	0.110	----
Arsenic	4.37	9.99	20.4	27.1	3.27	1.63	1.4 B	1 B	0.282	3-12*
Beryllium	0.220 B	0.343 B	0.368 B	0.384 B	0.162 B	0.130 B	NA	NA	0.010	0-1.75
Cadmium	U	U	0.186 B	U	U	U	NA	NA	0.017	0.1-1, (10***)
Chromium	7.16	13.9	16.6	14.7	4.85	3.90	NA	NA	0.058	1.5-40*, (50***)
Copper	7.50	11.3	32.0	43.2	4.28	2.62	NA	NA	0.106	1-50
Lead	19.3	27.2	68.8	34.7	4.03	2.40	NA	NA	0.066	200-500**
Mercury	U	U	0.179	0.281	U	U	U	U	0.100	0.001-0.2
Nickel	3.08	5.43	7.27	5.87	2.30	1.77	NA	NA	0.137	0.5-25
Selenium	0.373 B	0.877	0.580	0.399 B	U	U	NA	NA	0.229	0.1-3.9
Silver	U	U	U	U	U	U	NA	NA	0.032	----
Thallium	U	U	U	U	U	U	NA	NA	0.737	----
Zinc	18.9	29.3	41.2	25.6	8.77	7.11	7.4	11.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR19	NR20A	NR20B	NR20C	NR20D	NR21A	NR21B	NR21C	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	0 - 1'	.1' - 2'	2' - 3'		
DATE OF COLLECTION	9/27/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	87.0	86.1	95.4	95.5	76.1	78.7	85.6	97.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	U	0.215 B	U	U	U	U	U	0.110	----
Arsenic	3.9	28.4	1.99	2.51	24.8	20.6	22.4	2.19	0.282	3-12*
Beryllium	NA	0.388 B	0.167 B	0.133 B	0.411 B	0.337 B	0.347 B	0.123 B	0.010	0-1.75
Cadmium	NA	U	U	U	U	0.0254 B	U	U	0.017	0.1-1, (10***)
Chromium	NA	15.9	5.15	4.45	15.6	14.4	13.1	6.76	0.058	1.5-40*, (50***)
Copper	NA	42.1	3.66	4.15	40.7	29.8	33.7	4.03	0.106	1-50
Lead	NA	50.6	2.26	3.88	31.3	51.4	27.4	3.2	0.066	200-500**
Mercury	U	0.311	U	U	0.353	0.262	0.262	U	0.100	0.001-0.2
Nickel	NA	6.71	2.34	1.91	6.65	6.19	5.73	1.91	0.137	0.5-25
Selenium	NA	1.08	U	U	1.24	0.875	0.668	0.396 B	0.229	0.1-3.9
Silver	NA	U	U	U	U	U	U	U	0.032	----
Thallium	NA	U	U	U	U	U	0.898 B	U	0.737	----
Zinc	25.8	34.8	8.10	7.25	30.6	36	25.5	5.74	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR21D	NR21	NR21	NR21	NR22A	NR22B	NR22C	NR22D	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	3' - 4'	4' - 6'	7' - 9'	9' - 11'	0' - 1'	1' - 2'	2' - 3'	3' - 4'		
DATE OF COLLECTION	08/23/96	9/26/96	9/26/96	9/26/96	08/23/96	08/23/96	08/23/96	08/23/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	93.0	93.5	94.8	83.6	86.8	80.2	89.0	83.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	NA	NA	NA	U	0.419 B	U	U	0.110	----
Arsenic	2.09	0.65 B	U	U	23.5	82.6	16.1	21.9	0.282	3-12*
Beryllium	0.159 B	NA	NA	NA	0.371 B	0.451 B	0.235 B	0.348 B	0.010	0-1.75
Cadmium	U	NA	NA	NA	0.12 B	0.0362 B	U	U	0.017	0.1-1, (10***)
Chromium	4.86	NA	NA	NA	17.3	16.3	8.94	13.9	0.058	1.5-40*, (50***)
Copper	3.61	NA	NA	NA	37.2	44.7	24	34.2	0.106	1-50
Lead	2.45	NA	NA	NA	62.4	42.5	16.5	26.6	0.066	200-500**
Mercury	U	U	U	U	0.385	0.416	0.238	0.327	0.100	0.001-0.2
Nickel	2.64	NA	NA	NA	7.22	8.00	3.89	6.11	0.137	0.5-25
Selenium	0.525 B	NA	NA	NA	0.878	1.43	0.624	1.13	0.229	0.1-3.9
Silver	U	NA	NA	NA	U	0.0561 B	U	U	0.032	----
Thallium	U	NA	NA	NA	0.878 B	U	U	U	0.737	----
Zinc	7.53	10.7	6.8	9.7	42.2	47.2	16.8	26.3	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR22	NR22	NR22	NR22	NR23A	NR23B	NR23C	NR23D	INSTRUMENT	EASTERN
SAMPLE DEPTH	4' - 6'	6' - 8'	10' - 12'	12' - 14'	0 - 1'	1' - 2'	2' - 3'	3' - 4'	DETECTION	USA
DATE OF COLLECTION	9/25/96	9/25/96	9/26/96	9/26/96	08/23/96	08/23/96	08/23/96	08/23/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	95.5	83.5	97.1	97.7	84.5	97.8	87.3	82.3		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	U	U	0.145 B	U	U	0.110	----
Arsenic	2.7	18.8	U	0.75 B	6.29	2.24	36.2	23.3	0.282	3-12*
Beryllium	NA	NA	NA	U	0.164 B	0.138 B	0.31 B	0.403 B	0.010	0-1.75
Cadmium	NA	NA	NA	0.20 B	U	U	U	U	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	1.1 B	5.86	3.78	10.7	15.4	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	0.71 B	11.3	3.37	29.4	34.8	0.106	1-50
Lead	NA	NA	NA	1.3	18.1	2.67	24.5	28.9	0.066	200-500**
Mercury	U	0.12	U	U	U	U	0.199	0.21	0.100	0.001-0.2
Nickel	NA	NA	NA	1.0 B	3.22	1.74	4.57	6.51	0.137	0.5-25
Selenium	NA	NA	NA	U	0.369 B	0.240 B	0.639	0.962	0.229	0.1-3.9
Silver	NA	NA	NA	U	U	U	U	U	0.032	----
Thallium	NA	NA	NA	U	U	U	U	U	0.737	----
Zinc	21.7	25.8	9.7	4.8	15.1	6.38	28.9	24	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR23	NR23	NR23	NR24	NR24	NR24	NR24	NR24	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	6' - 8'	10' - 12'	0 - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'		
DATE OF COLLECTION	9/25/96	9/25/96	9/26/96	9/25/96	9/25/96	9/25/96	9/25/96	9/25/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.6	88.6	96.9	92.2	82.6	90.9	91.8	91.3		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	0.110	----
Arsenic	2.8	7.6	1.2 B	0.81 B	23.9	9.4	10	2.5	0.282	3-12*
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	0.010	0-1.75
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	NA	NA	NA	NA	NA	0.106	1-50
Lead	NA	NA	NA	NA	NA	NA	NA	NA	0.066	200-500**
Mercury	U	U	U	U	0.29	0.086	0.079	U	0.100	0.001-0.2
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	0.137	0.5-25
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	0.229	0.1-3.9
Silver	NA	NA	NA	NA	NA	NA	NA	NA	0.032	----
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	0.737	----
Zinc	18.4	30.2	10.1	12	37.2	21.8	38.6	16	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR24	NR24	NR24	NR25	NR25	NR25	NR25	NR26	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	10' - 12'	12' - 14'	14' - 16'	0 - 2'	4' - 6'	8' - 10'	14' - 16'	0 - 2'		
DATE OF COLLECTION	9/26/96	9/26/96	9/26/96	9/30/96	9/30/96	9/30/96	9/30/96	10/3/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	99.0	97.5	92.7	93.7	96.8	95.5	97.8	95.3		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	U	U	NA	NA	NA	NA	U	0.11	----
Arsenic	U	U	1.9	2.1	0.59 B	1.2 B	1.2 B	2.3	0.282	3-12*
Beryllium	NA	U	0.41 B	NA	NA	NA	NA	U	0.01	0-1.75
Cadmium	NA	0.34 B	1.0	NA	NA	NA	NA	0.81 B	0.017	0.1-1, (10***)
Chromium	NA	2.7	8.2	NA	NA	NA	NA	4.7	0.058	1.5-40*, (50***)
Copper	NA	1.8 B	7.1	NA	NA	NA	NA	3.5 B	0.106	1-50
Lead	NA	1.7	3.8	NA	NA	NA	NA	3.4	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	NA	2.0 B	6.0 B	NA	NA	NA	NA	3.7 B	0.137	0.5-25
Selenium	NA	1.5	1.9	NA	NA	NA	NA	1.2	0.229	0.1-3.9
Silver	NA	U	U	NA	NA	NA	NA	U	0.032	----
Thallium	NA	U	U	NA	NA	NA	NA	U	0.737	----
Zinc	10.5	7.4	18.6	16.1	7.7	8.3	6.6	12.5	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR26	NR26	NR26	NR26	NR26	NR26	NR26	NR27	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	14' - 16'	0 - 2'		
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	9/27/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	97.4	93.4	95.8	95.0	85.8	90.2	91.3	94.3		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	NA	0.11	----
Arsenic	0.74 B	3.0	2.3	2.0	2.8	4.2	1.8	8.0	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	NA	0.01	0-1.75
Cadmium	0.37 B	1.3	0.76 B	0.82 B	1.1	1.4	1.2	NA	0.017	0.1-1, (10***)
Chromium	1.6 B	6.1	5.7	5.2	9.9	15.6	6.7	NA	0.058	1.5-40*, (50***)
Copper	1.1 B	13.8	2.9 B	3.0 B	3.9 B	7.9	5.4	NA	0.106	1-50
Lead	1.5	13.9	2.7	4.1	5.5	7.7	3.6	NA	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	1.4 B	6.8 B	2.8 B	3.4 B	7.0	6.6 B	4.7 B	NA	0.137	0.5-25
Selenium	U	1.6	1.2	1.5	1.5	1.6	1.6	NA	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	NA	0.032	----
Thallium	U	U	U	U	U	U	U	NA	0.737	----
Zinc	5.7	64.9	8.3	13.5	21.8	23.8	13.2	14.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR27	NR27	NR27	NR27	NR27	NR27	NR28	NR28	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	0 - 2'	2' - 4'		
DATE OF COLLECTION	9/27/96	9/27/96	9/27/96	9/27/96	9/27/96	9/27/96	10/3/96	10/3/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	82.9	94.7	92.1	85.4	92.2	84.6	95.9	95.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	NA	NA	NA	U	U	0.11	----
Arsenic	1.4 B	0.97 B	2.1	12.3	2.0	1.9 B	2.6	2.4	0.282	3-12*
Beryllium	NA	NA	NA	NA	NA	NA	U	U	0.01	0-1.75
Cadmium	NA	NA	NA	NA	NA	NA	0.84 B	0.66 B	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	NA	NA	NA	4.3	3.1	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	NA	NA	NA	3.7 B	2.3 B	0.106	1-50
Lead	NA	NA	NA	NA	NA	NA	3.8	2.9	0.066	200-500**
Mercury	U	U	U	0.085	U	U	U	U	0.1	0.001-0.2
Nickel	NA	NA	NA	NA	NA	NA	3.6 B	3.0 B	0.137	0.5-25
Selenium	NA	NA	NA	NA	NA	NA	U	1.5	0.229	0.1-3.9
Silver	NA	NA	NA	NA	NA	NA	U	U	0.032	----
Thallium	NA	NA	NA	NA	NA	NA	U	U	0.737	----
Zinc	6.4	8.7	6.8	21.1	14.2	20.6	13.6	12	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR28	NR28	NR28	NR28	NR28	NR29	NR29	NR29	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	0 - 2'	4' - 6'	10' - 12'		
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	10/3/96	10/3/96	9/30/96	9/30/96	9/30/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96.0	88.7	96.9	96.1	95.5	86.8	91.8	97.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	NA	NA	NA	0.11	----
Arsenic	3.6	1.2 B	1.3 B	U	0.86 B	11.7	3	U	0.282	3-12*
Beryllium	U	U	U	U	U	NA	NA	NA	0.01	0-1.75
Cadmium	0.63 B	0.45 B	0.38 B	0.34 B	0.5 B	NA	NA	NA	0.017	0.1-1, (10***)
Chromium	5.2	1.6 B	3.8	1.5 B	1.6 B	NA	NA	NA	0.058	1.5-40*, (50***)
Copper	4.1 B	0.8 B	1.4 B	0.68 B	0.59 B	NA	NA	NA	0.106	1-50
Lead	4.3	1.4	1.4	1.1	1.3	NA	NA	NA	0.066	200-500**
Mercury	U	U	U	U	U	0.12	U	U	0.1	0.001-0.2
Nickel	2.7 B	1.5 B	2.2 B	1.2 B	1.4 B	NA	NA	NA	0.137	0.5-25
Selenium	1.2	U	0.78 B	0.85 B	U	NA	NA	NA	0.229	0.1-3.9
Silver	U	U	U	U	U	NA	NA	NA	0.032	----
Thallium	U	U	U	U	U	NA	NA	NA	0.737	----
Zinc	9.4	5.1	9.8	4.3	6.0	35.6	13	4.3	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR30	NR30	NR30	NR31	NR31	NR31	NR32	NR32	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0 - 2'	2' - 4'	4' - 6'	0 - 2'	2' - 4'	4' - 6'	0 - 2'	0 - 1'		
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	9/30/96	9/30/96	9/30/96	10/3/96	11/11/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.3	95.7	98.4	98.1	84.0	87.6	87.4	83.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	NA	NA	NA	U	U	0.11	----
Arsenic	4.4	2.9	1.4 B	0.91 B	3.7	4.4	14.8	11.4	0.282	3-12*
Beryllium	U	U	U	NA	NA	NA	U	U	0.01	0-1.75
Cadmium	6.1	6.6	0.84	NA	NA	NA	1.9	3.2	0.017	0.1-1, (10***)
Chromium	60.6	39.7	2.7	NA	NA	NA	13.1	11.4	0.058	1.5-40*, (50***)
Copper	24.7	20.2	2.1 B	NA	NA	NA	18.9	19.5	0.106	1-50
Lead	18.2	12.8	3.9	NA	NA	NA	59.2	43.6	0.066	200-500**
Mercury	U	U	U	U	U	U	0.21	0.12	0.1	0.001-0.2
Nickel	4.4 B	4 B	1.3 B	NA	NA	NA	6.7 B	U	0.137	0.5-25
Selenium	0.93	1.4	1.2	NA	NA	NA	2.7	1.8	0.229	0.1-3.9
Silver	5.4	3.2	U	NA	NA	NA	U	U	0.032	----
Thallium	U	U	U	NA	NA	NA	U	U	0.737	----
Zinc	49.3	37.7	7.3	4.4	22.8	23.1	37.2	30.0	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR32	NR32	NR32	NR32	NR32	NR33	NR33	NR33		EASTERN
SAMPLE DEPTH	1' - 2'	2' - 4'	4' - 6'	6' - 8'	8' - 10'	0 - 2'	0 - 1'	1' - 2'	INSTRUMENT	USA
DATE OF COLLECTION	11/11/96	10/3/96	10/3/96	10/3/96	10/3/96	10/2/96	11/11/96	11/11/96	DETECTION	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMITS	LEVELS
PERCENT SOLIDS	78.2	84.5	89.2	98.5	97.4	89.3	86.3	88.7		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	9.6	2.1 B	2.4	U	U	64.7	8.8	6.8	0.282	3-12*
	U	U	U	U	U	0.37 B	U	U	0.01	0-1.75
Cadmium	1.6	1.0 B	1.0	0.32 B	0.41 B	1.3	3.6	1.7	0.017	0.1-1, (10***)
Chromium	8.8	5.8	9.6	2.3	2.5	6.0	11.6	5.1	0.058	1.5-40*, (50***)
Copper	16.6	1.4 B	5.6	2.0 B	1.3 B	9.6	27.2	14.1	0.106	1-50
Lead	95.2	4.2	4.2	1.5	1.8	10.0	646	85.4	0.066	200-500**
Mercury	0.16	U	U	U	U	0.19	0.28	U	0.1	0.001-0.2
Nickel	U	4.1 B	7.1 B	2.4 B	1.8 B	4.4 B	U	U	0.137	0.5-25
Selenium	1.6	1.2	1.7	U	U	2.0	1.8	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	35.7	11.6	18.4	14.6	10.1	19.1	98.4	26.6	0.734	9-50

QUALIFIERS:

U: Compound analyzed for but not detected.

B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:

---- : Not established.

▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.

* : New York State Background.

** : Background for metropolitan or suburban areas.

*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR33	NR33	NR34	NR34	NR34	NR35	NR35	NR35	INSTRUMENT	EASTERN
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 2'	2' - 4'	4' - 6'	0 - 2'	0 - 1'	1' - 2'	DETECTION	USA
DATE OF COLLECTION	10/2/96	10/2/96	10/2/96	10/2/96	10/2/96	10/2/96	11/11/96	11/11/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	88.4	92.8	86.2	90.3	97.4	90.4	83.7	97.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	4.1	5.0	10	4.3	U	19.8	1.9	U	0.282	3-12*
Beryllium	0.35 B	0.36 B	0.38 B	0.31 B	U	0.25 B	U	U	0.01	0-1.75
Cadmium	1.1	1.1	2.0	1.1	0.36 B	0.73 B	U	U	0.017	0.1-1, (10***)
Chromium	7.7	8.8	12.9	7.3	6.2	4.9	3.1	2.7	0.058	1.5-40*, (50***)
Copper	8.1	8.8	27.5	3.4 B	0.94 B	11.0	U	U	0.106	1-50
Lead	28.2	11.8	407	12.6	2.0	12.4	2.2	2.0	0.066	200-500**
Mercury	0.14	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	6.1 B	6.2 B	9.1	5.1 B	2.4 B	4.1 B	U	U	0.137	0.5-25
Selenium	1.6	1.5	2.2	1.7	1.3	1.8	1.0	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	20.6	18.1	82.7	21.9	9.1	24.0	4.5	7.2	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR35	NR35	NR35	NR36	NR36	NR36	NR36	NR37	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	8' - 10'	12' - 14'	0 - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 2'		
DATE OF COLLECTION	10/2/96	10/2/96	10/2/96	9/30/96	9/30/96	9/30/96	9/30/96	10/2/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.2	92.4	89.5	94.9	86.5	70.0	98.1	95.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	36.4	NA	NA	NA	NA	U	0.11	----
Arsenic	2.1	1.6 B	9.1	3.1	7.2	11.4	U	2.5	0.282	3-12*
Beryllium	0.22 B	0.33 B	8.7	NA	NA	NA	NA	0.20 B	0.01	0-1.75
Cadmium	0.54 B	0.79 B	2.0	NA	NA	NA	NA	0.53 B	0.017	0.1-1, (10***)
Chromium	4.8	7.1	46.1	NA	NA	NA	NA	4.7	0.058	1.5-40*, (50***)
Copper	3.2 B	6.2	50.0	NA	NA	NA	NA	4.8	0.106	1-50
Lead	3.2	6.4	9.6	NA	NA	NA	NA	7.8	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	2.7 B	4.2 B	92.5	NA	NA	NA	NA	2.7 B	0.137	0.5-25
Selenium	U	1.9	3.3	NA	NA	NA	NA	0.87	0.229	0.1-3.9
Silver	U	U	8.1	NA	NA	NA	NA	U	0.032	----
Thallium	U	U	7.0	NA	NA	NA	NA	U	0.737	----
Zinc	8.8	12.1	103	16.2	31.2	29.8	6.3	11.0	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR37	NR37	NR37	NR37	NR37	NR37	NR38	NR38	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	4' - 6'	6' - 8'	8' - 10'	10' - 12'	12' - 14'	0 - 2'	0 - 1'		
DATE OF COLLECTION	10/2/96	10/2/96	10/2/96	10/2/96	10/2/96	10/2/96	10/1/96	11/11/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.3	93.9	81.7	86.4	96.6	97.0	97.4	92.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	NA	U	0.11	----
Arsenic	1.1 B	U	4.1	2.0	0.98 B	4.6	28.2	U	0.282	3-12*
Beryllium	0.21 B	U	0.71 B	0.57 B	0.22 B	0.22 B	NA	U	0.01	0-1.75
Cadmium	0.53 B	0.29 B	2.1	1.2	0.46 B	0.41 B	NA	U	0.017	0.1-1, (10***)
Chromium	3.0	1.5 B	19.6	11.0	3.8	3.4	NA	2.4	0.058	1.5-40*, (50***)
Copper	2.5 B	1.4 B	10.1	6.3	2.6 B	2.6 B	NA	U	0.106	1-50
Lead	4.5	1.9	10.5	4.8	2.6	1.7	NA	4.1	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	2.3 B	2.2 B	13.6	12.1	2.8 B	2.3 B	NA	U	0.137	0.5-25
Selenium	1.2	1.1	2.4	2.1	0.95	0.85 B	NA	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	NA	U	0.032	----
Thallium	U	U	U	U	U	U	NA	U	0.737	----
Zinc	9.3	8.6	31.6	19.0	8.0	7.1	9.6	5.8	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR38	NR38	NR38	NR38	NR39	NR39	NR39	NR39	INSTRUMENT	EASTERN
SAMPLE DEPTH	1' - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 2'	4' - 6'	8' - 10'	12' - 14'	DETECTION	USA
DATE OF COLLECTION	11/11/96	10/1/96	10/1/96	10/1/96	10/1/96	10/1/96	10/1/96	10/1/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	95.0	95.5	96.9	98.0	93.8	96.6	97.5	97.0		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	NA	NA	NA	NA	NA	NA	NA	0.11	----
Arsenic	3.7	1.7 B	0.68 B	U	8.6	U	U	U	0.282	3-12*
Beryllium	U	NA	NA	NA	NA	NA	NA	NA	0.01	0-1.75
Cadmium	1.5	NA	NA	NA	NA	NA	NA	NA	0.017	0.1-1, (10***)
Chromium	4.5	NA	NA	NA	NA	NA	NA	NA	0.058	1.5-40*, (50***)
Copper	U	NA	NA	NA	NA	NA	NA	NA	0.106	1-50
Lead	4.5	NA	NA	NA	NA	NA	NA	NA	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	U	NA	NA	NA	NA	NA	NA	NA	0.137	0.5-25
Selenium	0.99	NA	NA	NA	NA	NA	NA	NA	0.229	0.1-3.9
Silver	U	NA	NA	NA	NA	NA	NA	NA	0.032	----
Thallium	U	NA	NA	NA	NA	NA	NA	NA	0.737	----
Zinc	9.4	6.6	4.9	6.6	13.8	5.8	5.7	6.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR40	NR40	NR40	NR40	NR41	NR41	NR41	NR41	INSTRUMENT	EASTERN
SAMPLE DEPTH	0 - 2'	4' - 6'	8' - 10'	12' - 14'	0 - 2'	2' - 4'	4' - 6'	6' - 8'	DETECTION	USA
DATE OF COLLECTION	10/1/96	10/1/96	10/1/96	10/1/96	9/27/96	9/27/96	9/27/96	9/27/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	85.1	94.6	88.1	98.4	95.8	95.8	94.8	95.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	0.11	----
Arsenic	8.5	22.3	2.7	U	2.8	1 B	1.9	2.6	0.282	3-12*
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	0.01	0-1.75
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	NA	NA	NA	NA	NA	0.106	1-50
Lead	NA	NA	NA	NA	NA	NA	NA	NA	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	0.137	0.5-25
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	0.229	0.1-3.9
Silver	NA	NA	NA	NA	NA	NA	NA	NA	0.032	----
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	0.737	----
Zinc	24.6	84.8	22.8	3.3 B	13	7.1	11.9	7.5	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR41	NR41	NR41	NR42	NR42	NR42	NR42	NR43	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	8' - 10'	10' - 12'	12' - 14'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'		
DATE OF COLLECTION	9/27/96	9/27/96	9/27/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	90.1	82.2	93.0	84.2	80.6	82.9	85.3	83.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	NA	NA	NA	U	U	U	U	U	0.11	----
Arsenic	3.6	2.7	3.1	14.2	14.1	15.8	1.9	15.8	0.282	3-12*
Beryllium	NA	NA	NA	U	U	U	U	U	0.01	0-1.75
Cadmium	NA	NA	NA	1.7	1.7	1.3	1.4	1.6	0.017	0.1-1, (10***)
Chromium	NA	NA	NA	10.7	12.0	9.0	6.4	11.4	0.058	1.5-40*, (50***)
Copper	NA	NA	NA	23.4	19.3	24.6	U	24.0	0.106	1-50
Lead	NA	NA	NA	61.2	21.6	30.6	4.8	128.0	0.066	200-500**
Mercury	U	U	U	0.22	0.21	0.12	U	0.20	0.1	0.001-0.2
Nickel	NA	NA	NA	U	U	U	U	U	0.137	0.5-25
Selenium	NA	NA	NA	1.8	3.0	2.0	1.8	1.7	0.229	0.1-3.9
Silver	NA	NA	NA	U	U	U	U	U	0.032	----
Thallium	NA	NA	NA	U	2.8	4.1	U	U	0.737	----
Zinc	12.3	26.6	15.2	32.7	20.1	18.8	16.3	40.7	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.								INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE IDENTIFICATION	NR43	NR43	NR43	NR44	NR44	NR44	NR44	NR45		
SAMPLE DEPTH	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'		
DATE OF COLLECTION	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	94.1	83.8	82.9	94.3	95.4	80.0	96.7	94.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	5.1	16.5	5.9	3.6	3.1	3.7	U	2.9	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	1.6	2.7	U	1.0	2.3	U	1.1	0.017	0.1-1, (10***)
Chromium	3.3	9.3	16.0	4.0	5.9	20.0	3.8	10.7	0.058	1.5-40*, (50***)
Copper	7.4	20.0	9.4	U	U	8.7	U	7.1	0.106	1-50
Lead	8.1	14.9	14.2	4.7	3.8	9.8	1.9	53.9	0.066	200-500**
Mercury	U	0.11	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	U	U	9.2	U	U	12.9	U	U	0.137	0.5-25
Selenium	2.2	2.2	3.1	U	1.0	2.6	1.4	1.2	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	3.2	5.3	U	U	U	U	U	0.737	----
Zinc	7.3	17.5	28.0	8.5	8.1	28.3	7.0	27.2	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR45	NR45	NR46	NR46	NR46	NR47	NR47	NR47	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'		
DATE OF COLLECTION	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96.5	93.2	80.4	79.7	95.2	94.4	82.8	91.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	2.4	U	13.6	24.4	U	2.2	16.6	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	1.7	2.0	U	U	2.1	U	0.017	0.1-1, (10***)
Chromium	3.1	5.7	9.9	12.2	3.8	2.9	12.4	U	0.058	1.5-40*, (50***)
Copper	U	U	28.0	33.5	U	U	24.9	U	0.106	1-50
Lead	3.9	2.9	67.9	43.2	1.4	3.5	27.3	0.77	0.066	200-500**
Mercury	U	U	0.13	0.18	U	U	0.16	U	0.1	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	1.0	U	1.4	2.4	1.1	U	2.1	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	7.6	7.9	49.4	21.4	5.0	5.1	20.6	U	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR48	NR48	NR48	NR48	NR49	NR49	NR49	NR49	INSTRUMENT	EASTERN
SAMPLE DEPTH	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	DETECTION	USA
DATE OF COLLECTION	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	11/5/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	78.8	86.1	80.2	95.9	85.8	78.7	92.9	89.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	19.9	3.0	4.7	U	16.0	20.0	U	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	1.8	U	2.1	U	1.5	1.8	U	U	0.017	0.1-1, (10***)
Chromium	12.2	3.7	13.6	U	13.3	11.1	3.8	6.0	0.058	1.5-40*, (50***)
Copper	30.0	5.5	7.3	U	22.6	26.6	U	U	0.106	1-50
Lead	70.9	11.2	10.7	1.2	31.0	36.8	1.8	4.4	0.066	200-500**
Mercury	0.19	U	U	U	0.19	0.36	U	U	0.1	0.001-0.2
Nickel	U	U	8.4	U	U	U	U	U	0.137	0.5-25
Selenium	1.5	U	2.8	1.4	1.4	3.2	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	38.3	8.8	22.9	5.6	19.7	20.7	5.4	6.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR50	NR50	NR50	NR51	NR51	NR51	NR52	NR52	INSTRUMENT	EASTERN
SAMPLE DEPTH	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	DETECTION	USA
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	94.8	80.6	84.2	86.4	79.5	81.2	93.9	93.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	3.1	38.0	7.1	14.7	38.1	6.2	5.1	5.4	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	4.0	15.0	12.1	11.1	12.7	11.2	4.2	6.6	0.058	1.5-40*, (50***)
Copper	5.6	30.3	7.9	15.8	23.4	6.1	4.6	5.1	0.106	1-50
Lead	4.8 B	37.1	7.3 B	67.8	33.1	5.8 B	6.3 B	3.6 B	0.066	200-500**
Mercury	U	0.14	U	0.16	0.12	U	U	U	0.1	0.001-0.2
Nickel	3.5 B	9.0	7.6	4.1 B	5.6 B	7.7 B	2.4 B	4.0 B	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	8.6	27.0	21.9	42.2	20.0	19.1	6.7	12.0	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR52	NR53	NR53	NR53	NR53	NR54	NR54	NR54	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'		
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	84.6	80.2	90.1	87.5	96.2	94.0	95.6	84.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	4.7	38.6	21.4	5.0	U	4.6	2.8	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	12.0	14.3	8.6	7.1	6.0	6.0	2.9	6.7	0.058	1.5-40*, (50***)
Copper	6.6	38.3	25.4	4.6 B	1.9 B	4.8	2.1 B	2.7 B	0.106	1-50
Lead	4.3 B	79.2	39.0	3.9 B	U	6.1 B	5.4 B	7.3 B	0.066	200-500**
Mercury	U	0.27	0.18	U	U	U	U	U	0.1	0.001-0.2
Nickel	7.5 B	6.2 B	3.8 B	U	U	3.2 B	U	2.2 B	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	17.4	36.6	19.6	7.4	4.7	12.5	5.6	7.8	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR55	NR55	NR55	NR56	NR56	NR56	NR57	NR57	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	91.0	91.2	82.7	82.5	85.1	82.0	95.9	95.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	9.7	5.4	7.6	13.3	4.6	9.3	3.4	4.8	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	10.1	4.9	7.7	11.5	8.7	9.0	2.6	2.8	0.058	1.5-40*, (50***)
Copper	13.0	8.8	3.0 B	11.8	5.0 B	10.4	2.0 B	2.8 B	0.106	1-50
Lead	142	53.1	6.9 B	116.0	25.8	19.5	U	5.4 B	0.066	200-500**
Mercury	0.096	0.080	U	U	U	0.14	U	U	0.1	0.001-0.2
Nickel	3.5 B	U	4.1 B	2.6 B	2.6 B	U	U	U	0.137	0.5-25
Selenium	U	U	U	11.0 B	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	36.7	13.6	10.7	45.2	20.9	8.4	5.0	3.7	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
: Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR57	NR57	NR58	NR58	NR58	NR58	NR59	NR59	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96	11/6/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88.8	85.0	94.6	94.9	92.0	90.9	89.6	91.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	3.8	4.8	3.7	2.5	2.0	3.7	4.8	2.1	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	5.9	19.8	5.4	2.6	3.7	9.5	4.7	4.3	0.058	1.5-40*, (50***)
Copper	6.0	5.3	4.9	2.7 B	2.9 B	3.4 B	3.1 B	2.3 B	0.106	1-50
Lead	36.4	5.3 B	4.7 B	4.7 B	U	5.7 B	8.0 B	2.9 B	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	2.9 B	4.2 B	3.3 B	U	2.2 B	3.1 B	U	2.5 B	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	17.7	9.5	10.5	8.4	15.2	8.8	12.0	9.0	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR59	NR60	NR60	NR60	NR61	NR61	NR61	NR62	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'		
DATE OF COLLECTION	11/6/96	11/6/96	11/6/96	11/6/96	11/7/96	11/7/96	11/7/96	11/7/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.3	83.0	84.9	78.4	75.5	91.0	95.2	90.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	4.0	38.0	23.9	12.7	15.0	4.1	2.8	13.7	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	U	U	U	U	0.70 B	0.017	0.1-1, (10***)
Chromium	7.9	12.3	8.0	8.2	13.9	4.9	1.5 B	10.1	0.058	1.5-40*, (50***)
Copper	3.8 B	33.8	19.9	11.4	12.7	4.5 B	2.2 B	20.1	0.106	1-50
Lead	5.1 B	82.5	55.5	14.2 B	64.8	17.2 B	U	273	0.066	200-500**
Mercury	U	0.25	0.17	U	U	U	U	0.093	0.1	0.001-0.2
Nickel	2.3 B	5.6 B	4.3 B	3.2 B	U	U	U	5.1 B	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	10.0	38.3	32.1	21.1	39.1	12.1	3.0 B	80.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR62	NR62	NR63	NR63	NR63	NR64	NR64	NR64	INSTRUMENT	EASTERN
SAMPLE DEPTH	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	DETECTION	USA
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	89.7	88.2	84.1	93.0	85.4	70.2	88.0	81.9		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	7.8	14.1	28.1	4.0	U	17.9	14.2	16.2	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	0.47 B	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	6.8	8.4	14.0	4.0	2.6	16.4	7.6	11.5	0.058	1.5-40*, (50***)
Copper	18.6	18.5	25.5	3.8 B	2.2 B	25.3	18.2	11.4	0.106	1-50
Lead	284	152	94.4	4.6 B	U	102	18.6 B	15.8 B	0.066	200-500**
Mercury	0.10	0.13	0.20	U	U	0.14	U	U	0.1	0.001-0.2
Nickel	2.6 B	U	2.7 B	U	U	6.0 B	U	4.0 B	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	64.7	47.7	81.8	9.3	6.0	81.9	14.7	26.8	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR65	NR65	NR65	NR66	NR66	NR66	NR67	NR67	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	80.6	78.9	85.0	94.2	94.4	95.5	96.0	96.0		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	6.7 B	U	U	U	U	4.1 B	U	U	0.11	----
Arsenic	13.2	13.0	3.1	5.5	3.3	2.4	5.5	3.9	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	U	4.3	3.9	2.5	2.2	3.3	0.017	0.1-1, (10***)
Chromium	13.5	11.3	8.0	37.9	41.0	15.4	24.7	51.9	0.058	1.5-40*, (50***)
Copper	22.0	9.4	3.8 B	42.4	97.9	119	14.0	16.8	0.106	1-50
Lead	77.6	15.5 B	9.4 B	23.2	20.7	20.1	11.9 B	10.1 B	0.066	200-500**
Mercury	U	U	U	U	U	0.11	U	U	0.1	0.001-0.2
Nickel	6.6 B	4.6 B	3.4 B	2.3 B	U	2.2 B	U	U	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	4.8	4.7	4.8	2.0	5.0	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	63.3	33.0	20.8	63.1	68.4	80.3	28.0	33.7	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
: Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR67	NR68	NR68	NR68	NR69	NR69	NR69	NR70	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'		
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	94.6	85.0	91.2	88.6	95.3	93.6	90.8	94.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	4.4 B	U	U	U	U	U	0.11	----
Arsenic	5.2	20.6	7.2	6.6	1.8	2.2	4.6	4.7	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	9.3	0.49 B	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	40.1	13.9	8.4	8.7	22.6	4.9	10.7	30.0	0.058	1.5-40*, (50***)
Copper	27.7	28.6	13.7	4.4 B	2.2 B	2.1 B	3.8 B	83.9	0.106	1-50
Lead	13.2 B	134	30.4	7.9 B	5.5 B	U	4.9 B	54.0	0.066	200-500**
Mercury	0.081	0.22	U	U	U	U	U	0.094	0.1	0.001-0.2
Nickel	U	7.8 B	U	2.3 B	U	1.9 B	5.4 B	U	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	3.3	U	U	U	U	U	U	59.9	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	46.6	71.9	28.3	18.3	9.0	6.9	16.7	16.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR70	NR70	NR71	NR71	NR71	NR72	NR72	NR72	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'		
DATE OF COLLECTION	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96	11/7/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	94.9	93.0	93.8	97.2	94.7	94.2	92.2	95.2		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	3.9	4.1	3.1	U	5.0	2.7	5.7	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	2.5	2.3	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	20.6	23.3	4.6	2.2	5.3	3.2	4.9	2.4	0.058	1.5-40*, (50***)
Copper	121	151	2.7 B	1.3 B	3.7 B	2.4 B	5.6	1.2 B	0.106	1-50
Lead	30.1	33.1	U	U	5.4 B	2.0 B	U	U	0.066	200-500**
Mercury	0.13	0.14	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	2.6 B	U	U	U	2.2 B	1.8 B	3.9 B	U	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	16.8	19.2	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	73.1	74.4	7.2	8.5	23.1	7.3	10.4	3.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR72	NR73	NR73	NR73	NR74	NR74	NR74	NR75	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	4' - 6'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'		
DATE OF COLLECTION	11/7/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	93.6	95.0	91.9	95.3	84.1	92.2	97.5	95.9		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	U	2.4	5.7	U	11.2	3.7	U	2.0	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	1.0	U	1.6	1.2	U	1.3	0.017	0.1-1, (10***)
Chromium	4.6	U	3.3	7.3	7.4	4.2	U	3.3	0.058	1.5-40*, (50***)
Copper	1.7 B	U	7.5	U	21.0	5.8	U	U	0.106	1-50
Lead	U	4.2	10.6	1.9	45.6	6.5	2.0	2.6	0.066	200-500**
Mercury	U	U	U	U	0.21	U	U	U	0.1	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	0.86	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	4.0	5.7	10.2	U	27.2	11.4	U	8.6	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR75	NR75	NR76	NR76	NR76	NR76	NR77	NR77	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'		
DATE OF COLLECTION	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	95.2	93.5	96.8	94.5	94.1	95.3	93.4	88.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	3.8	U	U	3.2	U	U	7.0	2.5	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	1.2	U	U	U	U	U	2.1	0.97	0.017	0.1-1, (10***)
Chromium	3.1	U	U	2.4	2.0	2.4	5.9	2.9	0.058	1.5-40*, (50***)
Copper	U	U	U	U	U	U	6.4	U	0.106	1-50
Lead	5.4	1.9	2.0	4.6	2.0	2.1	6.9	3.8	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	U	U	1.2	U	U	U	0.96	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	7.0	U	3.9	7.9	4.1	8.1	13.0	7.8	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR77	NR77	NR78	NR78	NR78	NR78	NR79	NR79	INSTRUMENT	EASTERN
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'	DETECTION	USA
DATE OF COLLECTION	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	94.8	95.5	97.6	85.6	96.0	96.3	97.5	89.1		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	U	U	U	U	U	5.4	U	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	U	1.4	U	1.6	1.7	3.8	1.0	0.017	0.1-1, (10***)
Chromium	2.2	4.9	3.2	3.1	5.0	13.5	3.4	3.3	0.058	1.5-40*, (50***)
Copper	U	U	U	U	U	U	U	U	0.106	1-50
Lead	2.1	1.5	3.3	3.7	2.5	2.2	4.0	3.4	0.066	200-500**
Mercury	U	U	U	U	U	U	U	0.10	0.1	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	U	U	U	1.0	1.2	1.5	2.1	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	8.1	U	8.7	6.6	10.6	5.9	11.0	7.5	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR79	NR79	NR80	NR80	NR80	NR80	NR81	NR81	INSTRUMENT	EASTERN
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	4' - 6'	0 - 1'	1' - 2'	DETECTION	USA
DATE OF COLLECTION	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	11/11/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	96.6	94.0	93.6	84.7	93.8	90.1	94.5	89.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	U	U	7.3	4.7	3.0	U	2.7	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	U	U	0.01	0-1.75
Cadmium	U	0.99	1.7	1.4	0.98	U	U	1.3	0.017	0.1-1, (10***)
Chromium	2.0	4.2	4.5	4.1	4.2	2.8	U	3.7	0.058	1.5-40*, (50***)
Copper	U	U	6.6	6.0	U	U	U	6.1	0.106	1-50
Lead	1.6	2.4	7.2	6.6	3.3	2.0	3.8	15.6	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	U	U	1.5	U	U	U	1.2	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	3.9	7.8	19.2	9.8	7.3	4.8	4.5	17.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR81	NR81	NR-82	NR-82	NR-82	NR-83	NR-83	NR-83		EASTERN
SAMPLE DEPTH	2' - 4'	4' - 6'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'.	INSTRUMENT	USA
DATE OF COLLECTION	11/11/96	11/11/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	DETECTION	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1	LIMITS	LEVELS
PERCENT SOLIDS	96.5	92.7	84.8	84.7	91.1	82.3	78.7	76.4		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	U	U	19	14	1.4	17	10	2.1	0.282	3-12*
Beryllium	U	U	0.68	0.52	U	0.70	0.53	0.63	0.01	0-1.75
Cadmium	1.3	U	0.31	0.45	U	0.41	0.36	U	0.017	0.1-1, (10***)
Chromium	4.0	U	20	23	9.1	23	18	17	0.058	1.5-40*, (50***)
Copper	5.0	U	30	29	4.8	33	22	9.4	0.106	1-50
Lead	3.6	2.2	87	98	6.4	96	61	7.6	0.066	200-500**
Mercury	U	U	0.27	0.20	0.024	0.26	0.13	0.050	0.1	0.001-0.2
Nickel	U	U	10	8.3	5.9	11	9.1	8.9	0.137	0.5-25
Selenium	0.91	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	8.8	4.3	68	58	11	84	64	24	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR-84	NR-84	NR-84	NR-85	NR-85	NR-85	NR-86	NR-86		
SAMPLE DEPTH	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
DATE OF COLLECTION	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	83.8	82.0	75.3	81.0	92.5	93.9	94.0	95.6		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	12	12	3.4	17	2.1	2.2	3.1	1.7	0.282	3-12*
Beryllium	0.53	0.59	0.64	0.64	U	U	U	U	0.01	0-1.75
Cadmium	0.36	U	U	0.47	U	U	1.0	1.4	0.017	0.1-1, (10***)
Chromium	17	18	17	24	9.6	5.2	22	24	0.058	1.5-40*, (50***)
Copper	28	31	16	29	8.9	3.4	37	13	0.106	1-50
Lead	97	62	19	160	12	4.0	21	25	0.066	200-500**
Mercury	0.20	0.18	0.077	0.24	0.048	0.021	0.094	0.11	0.1	0.001-0.2
Nickel	9.1	9.5	9.6	10	5.2	3.0	8.7	4.4	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	0.85	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	81	98	32	120	14	6.2	67	64	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
: Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR-86	NR-87	NR-87	NR-87	NR-88	NR-88	NR-88	NR-89	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'	1' - 2'	2' - 4'	0 - 1'		
DATE OF COLLECTION	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96	11/14/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	88.5	93.3	93.9	80.5	95.4	94.6	90.7	94.5		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.11	----
Arsenic	0.50	1.9	1.9	4.0	3.6	2.0	2.5	3.3	0.282	3-12*
Beryllium	U	U	U	0.82	U	U	U	U	0.01	0-1.75
Cadmium	0.63	1.6	6.5	U	4.1	2.1	1.2	2.1	0.017	0.1-1, (10***)
Chromium	7.1	25	82	23	100	40	30	23	0.058	1.5-40*, (50***)
Copper	3.8	14	25	12	33	14	16	35	0.106	1-50
Lead	4.2	11	17	6.2	22	10	15	35	0.066	200-500**
Mercury	U	0.047	0.040	0.045	0.046	0.023	0.040	0.070	0.1	0.001-0.2
Nickel	6.8	4.9	5.1	13	5.5	6.1	4.9	5.1	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	1.7	0.85	U	U	0.84	2.9	1.3	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	22	26	45	36	32	24	22	40	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NR-89	NR-89	NRSB1A	NRSB1A-C	NRSB2A	NRSB1	NRSB1	NRSB1	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	1' - 2'	2' - 4'	4" - 6"	4" - 6"	4" - 6"	0 - 2'	2' - 4'	4' - 6'		
DATE OF COLLECTION	11/14/96	11/14/96	07/29/96	07/29/96	07/29/96	10/2/96	10/2/96	10/2/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	96.5	96.8	82.2	82.2	86.6	86.0	80.9	85.8		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	U	U	0.80 B	NA	0.22 B	U	U	U	0.11	----
Arsenic	1.1	1.3	17.8	19.8	15.7	9.0	10.1	4.4	0.282	3-12*
Beryllium	U	U	0.32 B	NA	0.30 B	0.35 B	0.39 B	0.37 B	0.01	0-1.75
Cadmium	3.9	2.9	0.37 B	NA	0.17 B	1.3	1.7	1.3	0.017	0.1-1, (10***)
Chromium	27	22	16.2	NA	12.4	10.4	12.4	12.2	0.058	1.5-40*, (50***)
Copper	93	85	24.3	NA	28.9	16.1	16.4	6.3	0.106	1-50
Lead	21	21	131	NA	63.8	28.2	25.3	9.0	0.066	200-500**
Mercury	0.077	0.066	0.15	NA	0.12	0.12	0.21	U	0.1	0.001-0.2
Nickel	4.8	6.4	7.0	NA	6.1	6.6 B	7.2 B	8.4 B	0.137	0.5-25
Selenium	U	U	0.50 B	NA	0.43 B	2.5	2.8	2.1	0.229	0.1-3.9
Silver	U	U	0.12 B	NA	U	U	U	U	0.032	----
Thallium	U	U	0.45 B	NA	0.58 B	U	U	U	0.737	----
Zinc	100	71	81.3	NA	35.7	23.2	203	86.2	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.
Sample NRSB1A-C confirmation analysis done by graphite furnace.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	NRSB2	NRSB2	NRSB2	FLDBLKA	FLDBLKS	FBH-1	SB FB-1	SB FB-2	INSTRUMENT	EASTERN
SAMPLE DEPTH	0 - 2'	2' - 4'	4' - 6'	--	--	--	--	--	DETECTION	USA
DATE OF COLLECTION	10/3/96	10/3/96	10/3/96	07/29/96	07/29/96	08/20/96	08/23/96	08/23/96	LIMITS	BACKGROUND
DILUTION FACTOR	1	1	1	1	1	1	1	1		LEVELS
PERCENT SOLIDS	90.2	83.3	98.0	--	--	--	--	--		
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	3.1 B	NA	U	U	0.11	----
Arsenic	9.3	4.2	1.7	U	U	U	U	4.31 B	0.282	3-12*
Beryllium	U	0.26 B	U	U	U	NA	U	U	0.01	0-1.75
Cadmium	0.95 B	2.2	0.57 B	U	U	NA	U	U	0.017	0.1-1, (10***)
Chromium	5.6	16	2.2	8.4 B	9.8 B	NA	U	5.78 B	0.058	1.5-40*, (50***)
Copper	17	9.6	2.0 B	1.7 B	2.7 B	NA	1.57 B	6.31 B	0.106	1-50
Lead	26.7	7.3	1.7	1.1 B	1.4 B	NA	1.90 B	5.06	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.1	0.001-0.2
Nickel	3.4 B	11.3	2.4 B	1.6 B	1.7 B	NA	U	1.21 B	0.137	0.5-25
Selenium	1.1	3.4	U	U	U	NA	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	NA	U	U	0.032	----
Thallium	U	U	U	U	U	NA	U	U	0.737	----
Zinc	19.5	28.3	10.8	16.5 B	1.4 B	14.3 B	U	18.6 B	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	SB FB-3	FB-1	FB-2	FB-3	FB-4	FB-5	FB-6	FB#1	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	--	--	--	--	--	--	--	--		
DATE OF COLLECTION	08/23/96	9/25/96	9/26/96	9/27/96	9/30/96	10/2/96	10/2/96	11/5/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	--	--	--	--	--	--	--	--		
UNITS	(mg/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/kg)	(mg/kg)
Antimony	U	NA	NA	NA	NA	U	U	U	0.110	----
Arsenic	U	U	U	U	U	U	U	U	0.282	3-12*
Beryllium	U	NA	NA	NA	NA	U	U	U	0.010	0-1.75
Cadmium	U	NA	NA	NA	NA	U	U	U	0.017	0.1-1, (10***)
Chromium	U	NA	NA	NA	NA	U	U	U	0.058	1.5-40*, (50***)
Copper	U	NA	NA	NA	NA	U	U	U	0.106	1-50
Lead	5.01	NA	NA	NA	NA	U	U	U	0.066	200-500**
Mercury	U	U	NA	U	U	U	U	U	0.100	0.001-0.2
Nickel	U	NA	NA	NA	NA	1.6 B	U	U	0.137	0.5-25
Selenium	U	NA	NA	NA	NA	4.4 B	U	U	0.229	0.1-3.9
Silver	U	NA	NA	NA	NA	U	U	U	0.032	----
Thallium	U	NA	NA	NA	NA	U	U	U	0.737	----
Zinc	U	9.8 B	9.7 B	9.8 B	U	44.0	U	U	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.
NA: Compound not analyzed for.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-6 (continued)
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.									
SAMPLE IDENTIFICATION	FB#2	FB#3	FB#4	FB#5	FB#6	FB#7	FB#8	FB#9	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	--	--	--	--	--	--	--	--		
DATE OF COLLECTION	11/5/96	11/6/96	11/7/96	11/7/96	11/7/96	11/11/96	11/11/96	11/14/96		
DILUTION FACTOR	1	1	1	1	1	1	1	1		
PERCENT SOLIDS	--	--	--	--	--	--	--	--		
UNITS	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/kg)	(mg/kg)
Antimony	U	U	U	U	U	U	U	U	0.110	----
Arsenic	U	U	U	U	U	U	U	U	0.282	3-12*
Beryllium	U	U	U	U	U	U	10.7	U	0.010	0-1.75
Cadmium	U	U	U	U	U	U	U	U	0.017	0.1-1, (10***)
Chromium	U	U	U	U	U	U	U	U	0.058	1.5-40*, (50***)
Copper	U	31.3	25.5	31.4	22.8 B	U	U	U	0.106	1-50
Lead	U	U	U	U	U	U	3.3	U	0.066	200-500**
Mercury	U	U	U	U	U	U	U	U	0.100	0.001-0.2
Nickel	U	U	U	U	U	U	U	U	0.137	0.5-25
Selenium	U	U	U	U	U	U	U	U	0.229	0.1-3.9
Silver	U	U	U	U	U	U	U	U	0.032	----
Thallium	U	U	U	U	U	U	U	U	0.737	----
Zinc	U	71.9	24.7	78.5	24.9	U	U	U	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
---- : Not established.
▒▒ : Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.

TABLE B-7
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
CONCRETE CORE SAMPLING RESULTS

ANALYTICAL LABORATORY	NYTEST			
SAMPLE IDENTIFICATION	NR35	NR37	NR40	REGULATORY LEVEL
SAMPLE DEPTH	0" - 5"	0" - 5"	0" - 5"	
DATE OF COLLECTION	10/02/96	10/02/96	10/01/96	
DILUTION FACTOR	1.00	1.00	1.00	
VOLATILE ORGANIC COMPOUNDS (TCLP)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Vinyl Chloride	U	U	U	0.2
1,1-Dichloroethane	U	U	U	0.7
Chloroform	U	U	U	6.0
1,2-Dichloroethane	U	U	U	0.5
2-Butanone	U	U	U	----
Carbon Tetrachloride	U	U	U	0.5
Trichloroethene	U	U	U	0.5
Benzene	U	0.01 J	U	0.5
Tetrachloroethene	U	U	U	0.7
Chlorobenzene	U	U	U	100.0
SEMIVOLATILE ORGANIC COMPOUNDS (TCLP)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
2-Methylphenol	U	U	U	----
3&4 Methylphenol	U	U	U	----
2,4-Dinitrotoluene	U	U	U	0.13
Hexachlorobenzene	U	U	U	0.13
Hexachlorobutadiene	U	U	U	0.5
Hexachloroethane	U	U	U	3.0
Nitrobenzene	U	U	U	2.0
Pentachlorophenol	U	U	U	100.0
Pyridine	U	U	0.1 J	5.0
2,4,5-Trichlorophenol	U	U	U	400.0
2,4,6-Trichlorophenol	U	U	U	2.0
1,4-Dichlorobenzene	U	U	U	7.5
PESTICIDES AND HERBICIDES (TCLP)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Chlordane	U	U	U	0.03
Endrin	U	U	U	0.02
Heptachlor & Heptachlor Epoxide	U	U	U	0.008
gamma-BHC (Lindane)	U	U	0.00004 J	0.4
Methoxychlor	U	U	U	10.0
Toxaphene	U	U	U	0.5
2,4-D	U	U	U	10.0
2,4,5-TP (Silvex)	U	U	U	400.0
METALS (TCLP)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic	U	U	U	5.0
Barium	0.570	0.248	0.238	100.0
Cadmium	U	U	U	1.0
Chromium	0.0310	0.0453	0.0575	5.0
Lead	U	U	U	5.0
Mercury	U	U	U	0.2
Selenium	U	U	U	1.0
Silver	U	U	U	5.0

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
---- : Not established.

NRUNWY\CORES\TCLP.WK4/mpr

01/14/97

TABLE B-8
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
SOIL CHARACTERIZATION SAMPLING RESULTS

ANALYTICAL LABORATORY	IEA, Inc.			
SAMPLE IDENTIFICATION	NRCOMP			
SAMPLE DEPTH	0" - 6"		INSTRUMENT DETECTION LIMITS	REGULATORY LEVELS
DATE OF COLLECTION	08/20/96			
PERCENT SOLIDS	91			
DILUTION FACTOR	1			
METALS (TCLP)	(mg/L)		(mg/L)	(mg/L)
Arsenic		U	0.200	5.0
Barium	0.486		0.200	100.0
Cadmium		U	0.025	1.0
Chromium		U	0.100	5.0
Lead		U	0.100	5.0
Mercury		U	0.0002	0.2
Selenium		U	0.200	1.0
Silver		U	0.025	5.0
PCBs	(ug/kg)		(ug/kg)	(ug/kg)
Aroclor-1016		U	33.0	1,000.0
Aroclor-1221		U	33.0	1,000.0
Aroclor-1232		U	33.0	1,000.0
Aroclor-1242		U	33.0	1,000.0
Aroclor-1248		U	33.0	1,000.0
Aroclor-1254		U	33.0	1,000.0
Aroclor-1260		U	33.0	1,000.0
PETROLEUM HYDROCARBONS	(mg/kg)		(mg/kg)	(mg/kg)
Total Petroleum Hydrocarbons		U	20	---

QUALIFIERS:
U : Analyzed for but not detected.

NOTES:
--- : Not established.

TABLE B-9
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
DRY WELL SOIL SAMPLING RESULTS
VOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.						
SAMPLE IDENTIFICATION	NRDW1	NRDW1	NRDW2	NRDW2	NRDW3	NRDW3	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0' - 2'	2' - 4'	0' - 2'	2' - 4'	0' - 2'	2' - 4'	
DATE OF COLLECTION	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	7/29/96	
PERCENT SOLIDS	72	81	92	95	95	95	
DILUTION FACTOR	1	1	1	1	1	1	
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Benzene	U	U	U	U	U	U	60
Ethylbenzene	U	U	U	U	U	U	5,500
Toluene	0.6 J	U	U	U	U	U	1,500
m&p Xylene	U	U	U	U	U	U	1,200
o-Xylene	U	U	U	U	U	U	1,200
Isopropylbenzene	U	U	U	U	U	U	----
n-Propylbenzene	U	U	U	U	U	U	----
p-Isopropyltoluene	U	U	U	U	U	U	----
1,2,4-Trimethylbenzene	0.9 J	U	U	U	U	U	----
1,3,5-Trimethylbenzene	0.5 J	U	U	U	U	U	----
n-Butylbenzene	U	U	U	U	U	U	----
sec-Butylbenzene	U	U	U	U	U	U	----
tert-Butylbenzene	U	U	U	U	U	U	----
Total VOCs	2	0	0	0	0	0	

QUALIFIERS:
U: Analyzed for but not detected.
J: Compound found below the instrument detection limit, value estimated.

NOTES:
----: Not established

TABLE B-10
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
DRY WELL SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANIC COMPOUNDS

ANALYTICAL LABORATORY	IEA, Inc.							
SAMPLE IDENTIFICATION	NRDW1	NRDW1	NRDW2	NRDW2	NRDW3	NRDW3	CONTRACT REQUIRED DETECTION LIMITS	NYSDEC TAGM 4046 APPENDIX A CRITERIA
SAMPLE DEPTH	0' - 2'	2' - 4'	0' - 2'	2' - 4'	0' - 2'	2' - 4'		
DATE OF COLLECTION	07/29/96	07/29/96	07/29/96	07/29/96	07/29/96	07/29/96		
PERCENT SOLIDS	84	89	89	94	96	96		
DILUTION FACTOR	100	4	2	1	1	1		
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	U	55 J	U	U	U	U	330	13,000
Acenaphthene	U	100 J	15 J	U	U	U	330	50,000
Fluorene	U	160 J	33 J	U	U	U	330	50,000
Phenanthrene	3,700 J	1,100 J	310 J	18 J	U	U	330	50,000
Anthracene	3,600 J	240 J	37 J	20 J	U	U	330	50,000
Fluoranthene	4,600 J	1,100 J	360 J	35 J	U	U	330	50,000
Pyrene	5,500 J	900 J	310 J	20 J	U	U	330	50,000
Benzo(a)anthracene	1,600 J	600 J	130 J	6 J	U	U	330	224 or MDL
Chrysene	2,800 J	710 J	270 J	15 J	U	U	330	400
Benzo(b)fluoranthene	1,600 J	660 J	270 J	13 J	U	U	330	1,100
Benzo(k)fluoranthene	1,400 J	580 J	280 J	9 J	U	U	330	1,100
Benzo(a)pyrene	1,600 J	690 J	160 J	10 J	U	U	330	61 or MDL
Indeno(1,2,3-cd)pyrene	990 J	70 J	16 J	U	U	U	330	3,200
Dibenzo(a,h)anthracene	U	U	U	U	U	U	330	14 or MDL
Benzo(g,h,i)perylene	1,100 J	51 J	U	U	U	U	330	50,000
TOTAL PAHs	28,490	6,916	2,211	146	0	0		100,000
TOTAL CaPAHs	9,990	3,210	1,146	53	0	0		10,000
TOTAL SVOCs	28,490	6,916	2,211	146	0	0		500,000

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound found at a concentration below the CRDL, value estimated.

NOTES:
MDL: Method Detection Limit.
: Value exceeds NYSDEC TAGM 4046 Appendix A Criteria.

TABLE B-11
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
DRY WELL SOIL SAMPLING RESULTS
GLYCOLS

SAMPLE IDENTIFICATION	SAMPLE DEPTH	DATE OF COLLECTION	RESULTS (mg/kg)
NRDW1	0' - 2'	7/29/96	< 0.61
NRDW1	2' - 4'	7/29/96	2.59
NRDW2	0' - 2'	7/29/96	2.21
NRDW2	2' - 4'	7/29/96	2.22
NRDW3	0' - 2'	7/29/96	2.10
NRDW3	2' - 4'	7/29/96	1.89

TABLE B-12
NORTHROP GRUMMAN CORPORATION
NORTH RUNWAY - PARCEL L1
DRY WELL SOIL SAMPLING RESULTS
PRIORITY POLLUTANT METALS

ANALYTICAL LABORATORY	IEA, Inc.							
SAMPLE IDENTIFICATION	NRDW1	NRDW1	NRDW2	NRDW2	NRDW3	NRDW3	INSTRUMENT DETECTION LIMITS	EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	0' - 2'	2' - 4'	0' - 2'	2' - 4'	0' - 2'	2' - 4'		
DATE OF COLLECTION	07/29/96	07/29/96	07/29/96	07/29/96	07/29/96	07/29/96		
DILUTION FACTOR	1	1	1	1	1	1		
PERCENT SOLIDS	69.1	90.6	90.0	93.8	92.7	96.4		
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Antimony	0.55 B	U	0.26 B	0.22 B	U	U	0.110	----
Arsenic	12.9	2.5	5.0	2.6	2.3	1.1	0.282	3-12*
Beryllium	0.52 B	0.13 B	0.089 B	0.078 B	0.13 B	0.074 B	0.010	0-1.75
Cadmium	3.9	0.26 B	0.18 B	U	U	U	0.017	0.1-1, (10***)
Chromium	47.9	7.4	6.4	3.4	3.8	3.2	0.058	1.5-40*, (50***)
Copper	48	6.3	5.2	2.2 B	3.7	2.6	0.106	1-50
Lead	744	42.7	28.1	3.7	1.6	1.1	0.066	200-500**
Mercury	0.31	U	U	U	U	U	0.100	0.001-0.2
Nickel	19.5	3.1 B	2.6 B	1.5 B	1.9 B	1.5 B	0.137	0.5-25
Selenium	0.70 B	U	U	U	U	U	0.229	0.1-3.9
Silver	0.25 B	U	U	U	U	U	0.032	----
Thallium	0.60 B	U	U	U	U	U	0.737	----
Zinc	289	27.9	27.7	7.1	10.5	5.4	0.734	9-50

QUALIFIERS:
U: Compound analyzed for but not detected.
B: Compound concentration is less than the CRDL but greater than the IDL.

NOTES:
: Value exceeds TAGM 4046 criteria for cadmium or chromium or Eastern USA Background Levels for all other metals.
* : New York State Background.
** : Background for metropolitan or suburban areas.
*** : Proposed revised criteria for cadmium and chromium in TAGM 4046 Appendix A.