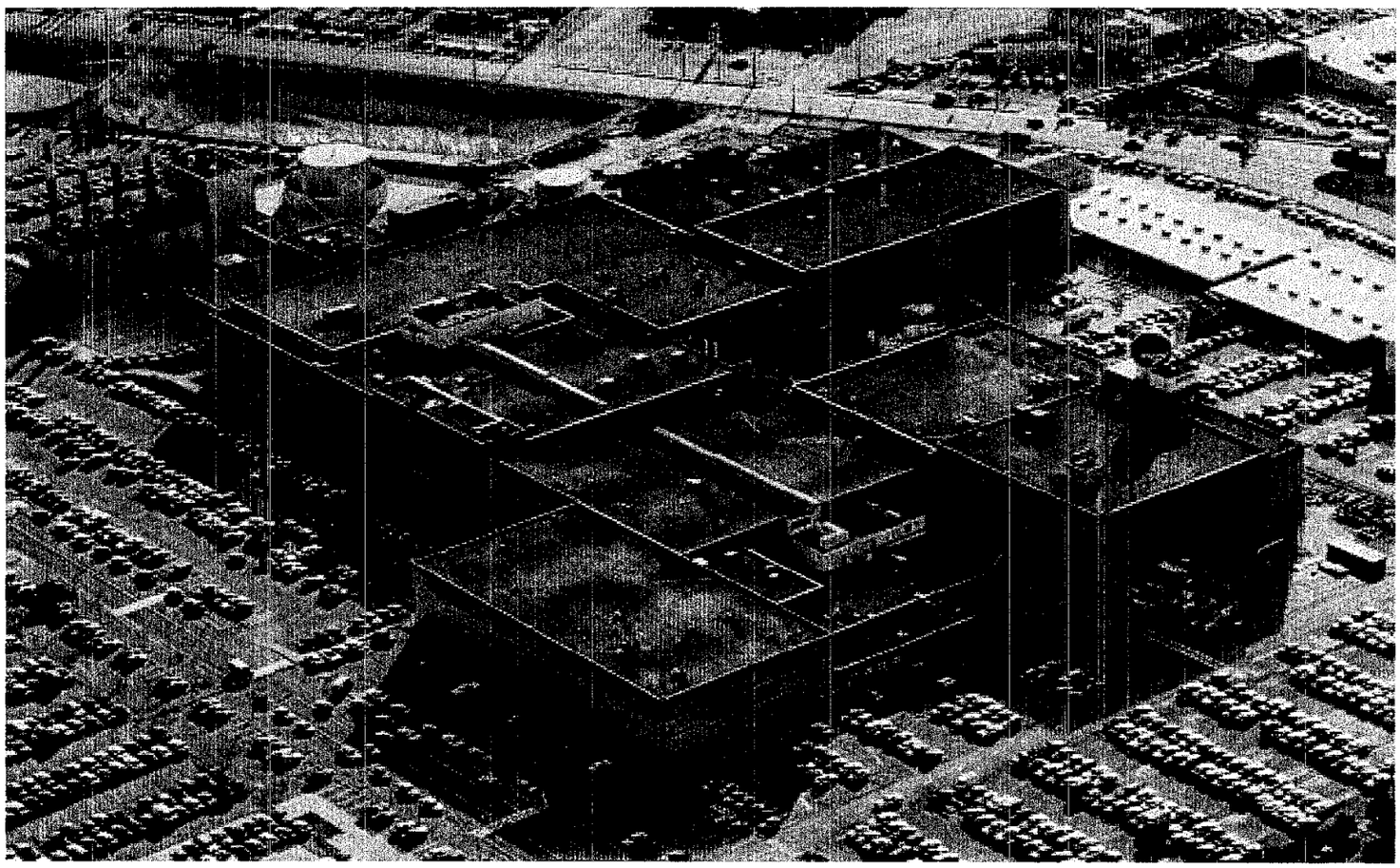
NORTHROP GRUMMAN

BETHPAGE FACILITY



PHASE II SITE ASSESSMENT - PLANT 5
VOLUME I - TECHNICAL FINDINGS

DECEMBER 1998

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

NORTHROP GRUMMAN

Electronics & Systems Integration Division
Surveillance & Battle Management Systems
Northrop Grumman Corporation
South Oyster Bay Road
Bethpage, New York 11714

January 6, 1999
ETC99-004

Mr. Stan Farkus, P.E.
Environmental Engineer III
Division of Solid & Hazardous Materials, Region I
NYS Department of Environmental Conservation
Building 40 - SUNY
Stony Brook, New York 11790-2356

Subject: **Final Phase II Environmental Assessment**
Plant 05 GOCO - Bethpage

Enclosure: Final Report, Phase II Site Assessment - Plant 05

Dear Mr. Farkus:

Please find enclosed one copy of the Final Report, Phase II Site Assessment for the Plant 05 GOCO facility located on the Northrop Grumman (NGC) Bethpage campus. This report when combined with the earlier Phase II report of the Structural Test Hanger area of Plant 05 completes the Phase II Environmental Assessment activities for the Plant 05 GOCO facility.

Please recall that the Structural Test Hanger area of the Plant 05 facility was investigated separately to avoid NGC/Navy program disruption. The final Phase I/II Site Assessment - Structural Test Hanger Report is dated October 1998 and was transmitted to your attention on December 1, 1998. Underground Injection Control (UIC) drainage features are being addressed under a separate program that will be coordinated with the remediation of Areas of Concern identified by the Phase II studies.

At your earliest convenience, NGC seeks a meeting with you to discuss the results of these studies and NGC's conceptual plan to remediate the facility.

Please call me at 516/575-2333 with any questions.

Very truly yours,

NORTHROP GRUMMAN CORPORATION

Drew B. Bennett, P.E., Manager
Environmental Technology & Compliance
M/S: D08-001

cc: w/enclosure
S. Kaminski, NYSDEC; T. Mulvihill, NCDH; T. Kelly, NCDPW; S. Snee, NYSDEC

w/o enclosure
J. Lovejoy, NCDH; B. Mackay, NCDH

bcc: w/enclosures
P. Daub (Tetra Tech NUS)
J. Colter
J. Hare
J. Kaminski
A. Taormina

bcc: w/o enclosures
P. Siegel
G. Halpern
G. Pallotta
F. Weber

Dvirka and Bartilucci
CONSULTING ENGINEERS

330 Crossways Park Drive, Woodbury, New York, 11797-2015
516-364-9890 • 718-460-3634 • Fax: 516-364-9045
e-mail: db-eng@worldnet.att.net

December 31, 1998

John Cofman, P.E.
Lead Engineer
Environmental Technology and Compliance
Northrop Grumman Corporation
Mail Stop: D08-001
Bethpage, NY 11714-3582

Re: Phase II Site Assessment
Plant 5
Bethpage, NY
D&B No. 1539

Dear Mr. Cofman:

Enclosed, please find fifteen (15) copies of Volume I – Technical Findings, and ten (10) copies of Volume II – Appendices, of the document entitled:

"Phase II Site Assessment
Plant 5
Bethpage, New York"

If you have any questions and/or comments, please do not hesitate to contact Mr. Errol Kitt or me at (516) 364-9890.

Very truly yours,

Richard M. Walka
Vice President

RMW/ASP/cmc
cc: D. Bennett (NGC)
F. Weber (NGC)
E. Kitt (D&B)
♦1539/rmw98-18.ltr

NORTHROP GRUMMAN CORPORATION

PHASE II SITE ASSESSMENT

PLANT 5

BETHPAGE, NEW YORK

PREPARED BY

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
WOODBURY, NEW YORK

DECEMBER 1998

NORTHROP GRUMMAN CORPORATION
PHASE II SITE ASSESSMENT
PLANT 5
BETHPAGE, NEW YORK

TABLE OF CONTENTS

VOLUME I - TECHNICAL FINDINGS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

List of Figures

List of Tables

VOLUME II - APPENDICES

List of Appendices

TABLE OF CONTENTS (continued)

Section 1

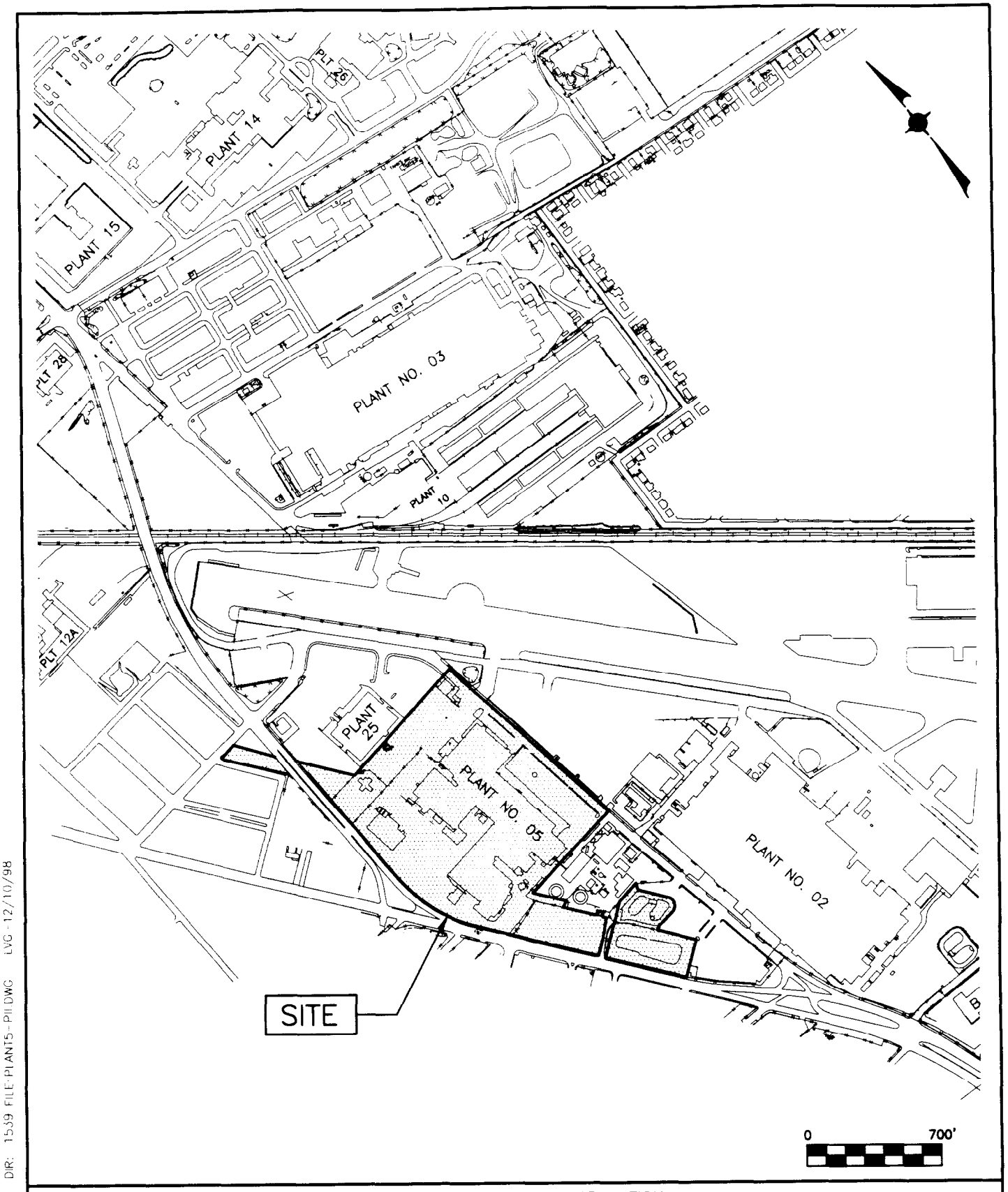
1.0 INTRODUCTION

This document presents the results of the Phase II Site Assessment undertaken for the Northrop Grumman Corporation (NGC) property known as Plant 5, located on the east side of the South Oyster Bay Extension at its intersection with Hicksville-Massapequa Road (Route 107) in Bethpage, New York. A site location map and site plan are presented on Figures 1-1 and 1-2, respectively.

The Phase II Site Assessment consisted of two field programs, an Initial Phase II Site Assessment and a Delineation Phase II Site Assessment. The results of the 1998 Phase I Site Assessment were used to identify potential areas of environmental concern (AOCs) at Plant 5. These areas, located both inside and outside of the building, were investigated as part of the Initial Phase II Site Assessment. The results from the Initial Phase II Site Assessment were used to determine those areas where additional investigation was warranted. This additional work was performed during the Delineation Phase II Site Assessment.

Section 2 of this document describes the scope of work, field program and findings, on an AOC-by-AOC basis, of the Initial Phase II Site Assessment, which was performed during June through August 1998. The scope of work, field program and findings of the October 1998 Delineation Phase II Site Assessment are described in Section 3. Section 4 discusses recommendations concerning remediation at the investigated AOCs.

Supporting data related to the Phase II Site Assessment program at Plant 5 are presented in appendices to this document. Geophysical surveys performed as part of the Initial Phase II Site Assessment are included in Appendix A. Logs for the Initial Phase II Site Assessment soil borings are included in Appendix B and tables summarizing the analytical results of samples collected during the Initial Phase II Site Assessment are included in Appendix C. For the Delineation Phase II Site Assessment, the geophysical surveys are included in Appendix D, soil boring logs are included in Appendix E and summary tables of analytical results are included in Appendix F.



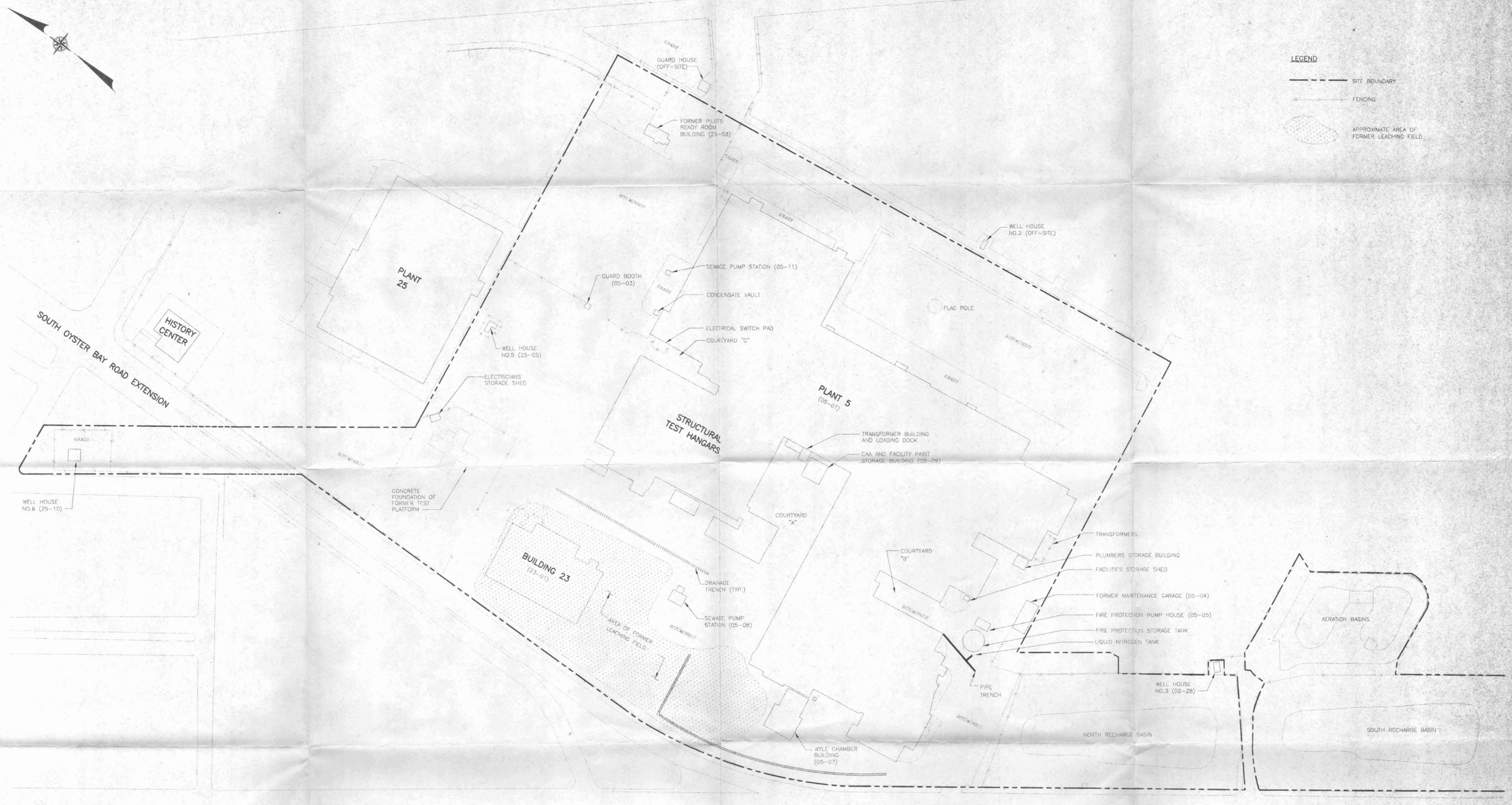
DR: 1539 FILE: PLANTS-PII.DWG LVG - 12/10/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

SITE LOCATION MAP

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

FIGURE 1–1



DIR:1539 FILE: PLANS-SITE-PII.DWG LVG/12/10/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 - PHASE II SITE ASSESSMENT

SITE PLAN

FIGURE 1-2

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

000461F01X

2.0 INITIAL PHASE II ASSESSMENT

2.1 Scope of Work

The results of the Phase I Site Assessment at Plant 5 were used to identify potential areas of environmental concern (AOCs) both inside and outside of the building. The AOCs that were to be investigated as part of the Initial Phase II Site Assessment are shown on Figures 2-1 (interior areas) and 2-2 (exterior areas) and are summarized in Tables 2-1 (interior areas) and 2-2 (exterior areas). The information in these tables includes the AOC designation and the rationale for its investigation, the number of borings and samples proposed for each AOC, and the analytical parameters for each sample. The interior and exterior programs were conducted concurrently.

2.2 Field Program

This section provides a description of the field activities conducted as part of the Initial Phase II Site Assessment at the Plant 5 site. Work performed during the Initial Phase II Site Assessment included geophysical surveys and collection and analysis of soil and concrete core samples. Descriptions of the procedures used during these activities are included in Sections 2.2.1 (Geophysical Surveys), 2.2.2 (Soil Sampling), 2.2.3 (Concrete Core Sampling) and 2.2.4 (Decontamination Procedures).

2.2.1 Geophysical Surveys

In order to pinpoint former structures and sample locations at seven potential AOCs, Conrad Geosciences Corp. of Poughkeepsie, New York was subcontracted to perform geophysical surveys at those areas. Ground penetrating radar (GPR) or magnetometry and radiometry (M/G) were used to perform the geophysical surveys. The areas investigated by Conrad Geosciences, including the area designations of both D&B and Conrad and the geophysical technique utilized, were:

LEGEND

1-1 FORMER ALODINE LINE ROOM
1-2 PAINT TUNNEL ROOM
1-3 HYDRAULIC PUMP ROOM
1-4 FORMER DROP QUENCH OVEN AREA
1-5 CONDENSATE PIT
1-6 FORMER MACHINE SHOP
1-7 FORMER MACHINE SHOP
1-8 MACHINE SHOP
1-9 CNC MACHINE/RAM ROOM
1-10 STORAGE AREA FOR SBMS
1-11 FORMS AND CENTRAL STORAGE AREA
1-12 FORMER MODEL SHOP
1-13 FORMER MODEL SHOP PAINT SPRAY ROOM
1-14 FORMER ROUTER ROOM
1-15 CAGED STORAGE AREA
1-16 MODEL AIRPLANE SHOP
1-17 SHEET METAL STORAGE AND SHEARER AREA
1-18 HIGH VOLTAGE CREW AREA
1-19 FORMER MACHINE SHOP
1-20 ELECTRICIANS STORAGE ROOM
1-21 GENERATOR ROOM
1-22 BLUE ROOM
1-23 FACILITIES MAINTENANCE SHOP
1-24 GOM STORAGE AREA
1-25 LABORERS STORAGE ROOM
1-26 FORMER PAINT TUNNEL
1-27 OAO HANGAR
1-28 GOM STORAGE AREA/FORMER SHUTTLE WING HANGAR
1-29 GSSC STORAGE AREA
1-30 LIQUID CHILLER ROOM
1-31 WYLE CHAMBER BUILDING
1-32 HIGH BAY 1 (INCL. PAINT TUNNEL, WOOD SHOP, LAY-UP ROOM AND LAY-UP AREA OFFICE)
1-33 PAINT MIXING BOOTH
1-34 PAINT TUNNEL
1-35 OPTICS LABORATORY
1-36 PAINT SPRAY AREA
1-37 PAINT AND CHEMICAL STORAGE ROOM
1-38 WELL HOUSE NO. 5
1-39 WELL HOUSE NO. 6

CAA AND FACILITY PAINT STORAGE BUILDING

STRUCTURAL TEST HANGARS

(ADDRESSED AS PART OF A SEPARATE PHASE I/PHASE II SITE ASSESSMENT FOR THE STRUCTURAL TEST HANGARS ONLY)

FIRE PROTECTION PUMP HOUSE

WELL HOUSE No.5
1-38

± 900'

WELL HOUSE No.6
1-39

BUILDING 23

WYLE CHAMBER BUILDING
1-31

0 40 80
SCALE: 1"=40'

DR: 1539 FILE: PLANS-PAOECI-PI.DWG LAST: 12:10:08

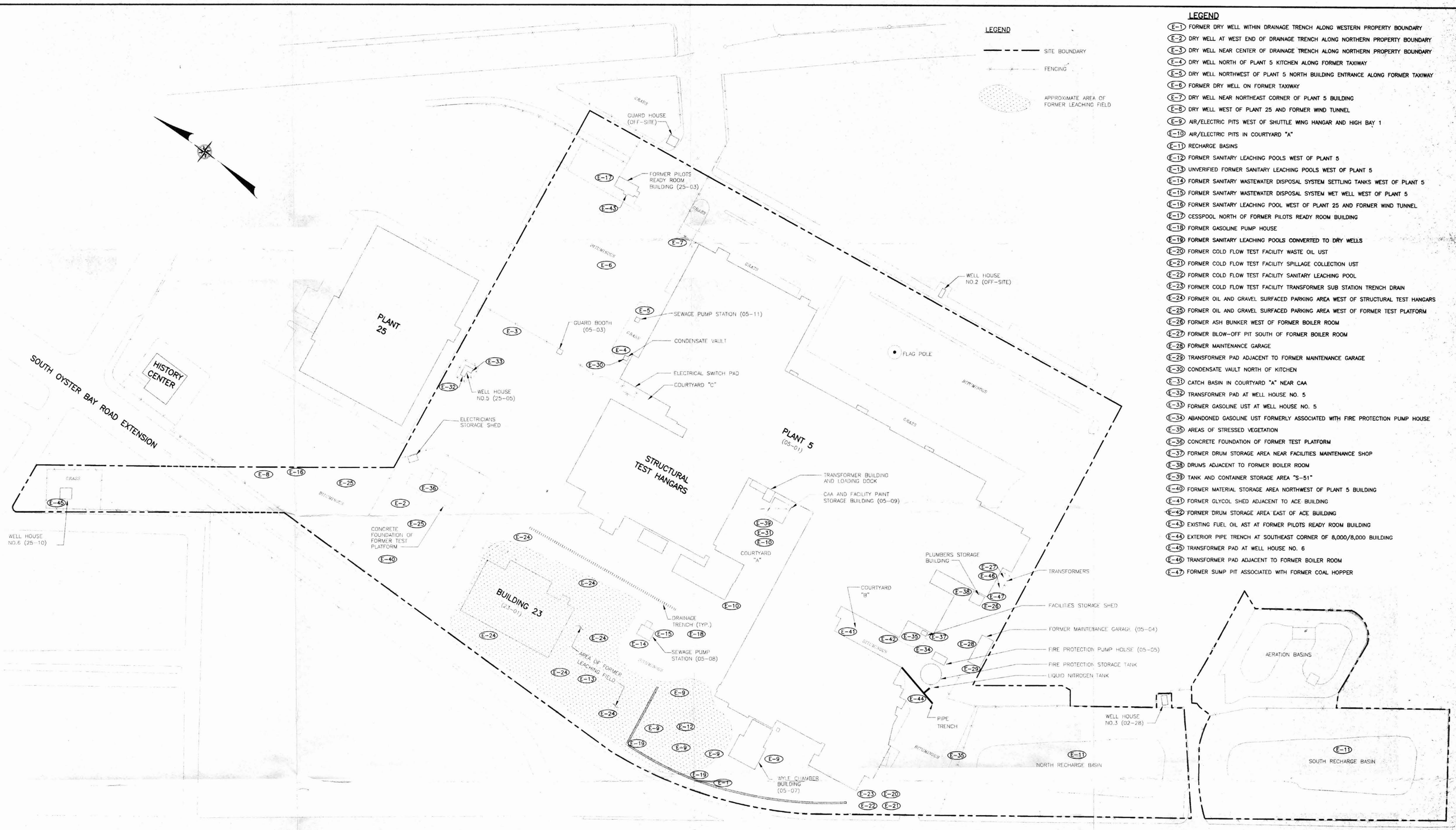
NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 - PHASE II SITE ASSESSMENT

POTENTIAL AREAS OF ENVIRONMENTAL CONCERN - INTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-1

000401FB027



LEGEND

- (E-1) FORMER DRY WELL WITHIN DRAINAGE TRENCH ALONG WESTERN PROPERTY BOUNDARY
- (E-2) DRY WELL AT WEST END OF DRAINAGE TRENCH ALONG NORTHERN PROPERTY BOUNDARY
- (E-3) DRY WELL NEAR CENTER OF DRAINAGE TRENCH ALONG NORTHERN PROPERTY BOUNDARY
- (E-4) DRY WELL NORTH OF PLANT 5 KITCHEN ALONG FORMER TAXIWAY
- (E-5) DRY WELL NORTHWEST OF PLANT 5 NORTH BUILDING ENTRANCE ALONG FORMER TAXIWAY
- (E-6) FORMER DRY WELL ON FORMER TAXIWAY
- (E-7) DRY WELL NEAR NORTHEAST CORNER OF PLANT 5 BUILDING
- (E-8) DRY WELL WEST OF PLANT 25 AND FORMER WIND TUNNEL
- (E-9) AIR/ELECTRIC PITS WEST OF SHUTTLE WING HANGAR AND HIGH BAY 1
- (E-10) AIR/ELECTRIC PITS IN COURTYARD "A"
- (E-11) RECHARGE BASINS
- (E-12) FORMER SANITARY LEACHING POOLS WEST OF PLANT 5
- (E-13) UNVERIFIED FORMER SANITARY LEACHING POOLS WEST OF PLANT 5
- (E-14) FORMER SANITARY WASTEWATER DISPOSAL SYSTEM SETTLING TANKS WEST OF PLANT 5
- (E-15) FORMER SANITARY WASTEWATER DISPOSAL SYSTEM WET WELL WEST OF PLANT 5
- (E-16) FORMER SANITARY LEACHING POOL WEST OF PLANT 25 AND FORMER WIND TUNNEL
- (E-17) CESSPOOL NORTH OF FORMER PILOTS READY ROOM BUILDING
- (E-18) FORMER GASOLINE PUMP HOUSE
- (E-19) FORMER SANITARY LEACHING POOLS CONVERTED TO DRY WELLS
- (E-20) FORMER COLD FLOW TEST FACILITY WASTE OIL UST
- (E-21) FORMER COLD FLOW TEST FACILITY SPILLAGE COLLECTION UST
- (E-22) FORMER COLD FLOW TEST FACILITY SANITARY LEACHING POOL
- (E-23) FORMER COLD FLOW TEST FACILITY TRANSFORMER SUB STATION TRENCH DRAIN
- (E-24) FORMER OIL AND GRAVEL SURFACED PARKING AREA WEST OF STRUCTURAL TEST HANGARS
- (E-25) FORMER OIL AND GRAVEL SURFACED PARKING AREA WEST OF FORMER TEST PLATFORM
- (E-26) FORMER ASH BUNKER WEST OF FORMER BOILER ROOM
- (E-27) FORMER BLOW-OFF PIT SOUTH OF FORMER BOILER ROOM
- (E-28) FORMER MAINTENANCE GARAGE
- (E-29) TRANSFORMER PAD ADJACENT TO FORMER MAINTENANCE GARAGE
- (E-30) CONDENSATE VAULT NORTH OF KITCHEN
- (E-31) CATCH BASIN IN COURTYARD "A" NEAR CAA
- (E-32) TRANSFORMER PAD AT WELL HOUSE NO. 5
- (E-33) FORMER GASOLINE UST AT WELL HOUSE NO. 5
- (E-34) ABANDONED GASOLINE UST FORMERLY ASSOCIATED WITH FIRE PROTECTION PUMP HOUSE
- (E-35) AREAS OF STRESSED VEGETATION
- (E-36) CONCRETE FOUNDATION OF FORMER TEST PLATFORM
- (E-37) FORMER DRUM STORAGE AREA NEAR FACILITIES MAINTENANCE SHOP
- (E-38) DRUMS ADJACENT TO FORMER BOILER ROOM
- (E-39) TANK AND CONTAINER STORAGE AREA "S-51"
- (E-40) FORMER MATERIAL STORAGE AREA NORTHWEST OF PLANT 5 BUILDING
- (E-41) FORMER GLYCOL SHED ADJACENT TO ACE BUILDING
- (E-42) FORMER DRUM STORAGE AREA EAST OF ACE BUILDING
- (E-43) EXISTING FUEL OIL AST AT FORMER PILOTS READY ROOM BUILDING
- (E-44) EXTERIOR PIPE TRENCH AT SOUTHEAST CORNER OF 8,000/8,000 BUILDING
- (E-45) TRANSFORMER PAD AT WELL HOUSE NO. 6
- (E-46) TRANSFORMER PAD ADJACENT TO FORMER BOILER ROOM
- (E-47) FORMER SUMP PIT ASSOCIATED WITH FORMER COAL HOPPER

DIR-1539 FILE PLANS-PAEGE-PILDWG LVG/12-10-98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

POTENTIAL AREAS OF ENVIRONMENTAL CONCERN – EXTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-2

TABLE 2-1
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-1	Former Alodine Line Room	Advance one boring at the pit located in the bermed tank area to a depth of 6' bgs. Assuming that the bottom of the pit is approx. 2' bgs, the boring should be advanced from 2' to 6' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 2' to 4' and 4' to 6' bgs) for lab analysis	1	2	2'-4' and 4'-6'	2	■	--	--	--	
		Advance one boring within the bermed tank area in an area with heavy stained and pitted concrete and collect soil samples for lab analysis. Advance one boring outside the bermed tank area and collect soil samples for lab analysis. Both soil borings should be advanced to 4' bgs with samples collected at 0 to 2' and 2' to 4' bgs at each boring for lab analysis	2	4	0-2' and 2'-4'	4	■	--	--	--	--
		Advance one boring in the former bermed holding tank area located outside the former Alodine Line Room and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	--	--	--	--
I-2	Paint Tunnel Room	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■		
		Advance one soil boring in area with heavily stained floor adjacent to wet curtain system trough behind paint tunnel and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■		--
I-3	Hydraulic Pump Room	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2		■	■	■	
I-4	Former Drop Quench Oven Area	Advance one boring at the inactive/disconnected sump with ejector pump to a depth of 8' bgs. Assuming that the bottom of the pit is approx. 4' bgs, the boring should be advanced from 4' to 8' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 4' to 6' and 6' to 8' bgs) for lab analysis	1	2	4'-6' and 6'-8'	2	--	■	■	■	■
I-5	Condensate Pit	Assuming the condensate pit contains a sump with an earthen bottom, advance one boring within the sump and collect soil samples for lab analysis. Assuming that the bottom of the pit is 7' bgs and the sump is 1' deep, the boring should be advanced from 8' - 12' bgs with soil samples collected from 0' to 2' and 2' to 4' below the sump (or 8' to 10' and 10' to 12' bgs) for lab analysis	1	2	8'-10' and 10'-12'	2	■	■	■	■	■
I-6	Former Machine Shop	Advance one boring in the approx. area of the former quench tank and collect soil samples for lab analysis. The soil boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	■	
		Advance two borings in the approx. area of the former pits associated with the former Hard Chrome Process. Assuming that the pits were 2' deep, the borings should be advanced from 2' to 6' bgs with soil samples collected at 0 to 2' and 2' to 4' below the bottom of the pits (or 2' to 4' and 4' to 6' bgs) for lab analysis.	2	4	2'-4' and 4'-6'	4	■	--	--	--	

****Target Constituents and Analytical Methods**

1 RCRA Metals (Methods 6010/7471)
2 Volatile Organic Compounds (Method 8260) including those listed in STARS
3 Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4 STARS Table 2 Semivolatile Organic Compounds by TCLP
5 Polychlorinated Biphenyls (Method 8081)

Notes:
* Refer to Figure 2-1 for AOC locations
-- Not applicable
bgs Below ground surface

TABLE 2-1 (Continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-7	Former Machine Shop	Advance three borings in areas of former machines and heavily stained and displaced wood block flooring and collect soil samples for lab analysis. All three soil borings should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs at each boring for lab analysis	3	6	0-2 and 2'-4'	6	■	■	■	■	--
I-8	Machine Shop	Advance four borings adjacent to existing machines in areas with heavily stained and displaced wood block flooring and collect soil samples for lab analysis. All four soil borings should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	4	8	0-2' and 2'-4'	8	■	■	■	■	--
I-9	CNC Machine/RAM Room	Advance one boring adjacent to existing machine in an area with heavily stained concrete flooring and collect soil samples for lab analysis. The soil boring should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-10	Storage Area for SBMS	Advance two borings along the northern perimeter and northeast corner of the storage area at locations of former machines and heavily stained and displaced wood block flooring and collect soil samples for lab analysis. Both soil borings should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	2	4	0-2' and 2'-4'	4	■	■	■	■	--
I-11	Forms and Central Storage Area	Advance one boring along the east wall in an area of heavily stained and displaced wood block flooring and collect soil samples for lab analysis. The soil boring should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-12	Former Model Shop	Advance two soil borings, one in the southeast corner of the former model shop in an area of heavily stained and displaced wood block flooring and one in another area of heavily stained and displaced wood block flooring. Collect soil samples for lab analysis. The soil borings should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	2	4	0-2' and 2'-4'	4	■	■	■	■	
I-13	Former Model Shop Paint Spray Room	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	--	--
I-14	Former Router Room	Advance two borings along the northern perimeter of the former router room in areas of former machines with heavily stained and displaced wood block flooring and collect soil samples for lab analysis. Both soil borings should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	2	4	0-2' and 2'-4'	4	■	■	■	■	--
I-15	Caged Storage Area	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-16	Model Airplane Shop	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0-2' and 2'-4'	2	■	■	■	■	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:
* Refer to Figure 2-1 for AOC locations.
-- Not applicable
bgs Below ground surface

TABLE 2-1 (Continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-17	Sheet Metal Storage and Shearer Area	Advance one soil boring in area with heavily stained floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-18	High Voltage Crew Area	Advance one boring within the manhole located along the south wall of the high voltage crew area and collect soil samples for lab analysis. Assuming that the bottom of the manhole is approx. 5' bgs, the boring should be advanced from 5' to 9' with soil samples collected at 5' to 7' and 7' to 9' bgs for lab analysis.	1	2	5'-7' and 7'-9'	2	■	■	■		--
		Advance one boring at the machine pit to a depth of 6' bgs. Assuming that the bottom of the pit is approx. 2' bgs, the boring should be advanced from 2' to 6' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 2' to 4' and 4' to 6' bgs) for lab analysis.	1	2	2'-4' and 4'-6'	2	■	■	■	■	--
		Advance one boring at paint spray booth in southwest corner of room in area of heaviest staining and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■		
I-19	Former Machine Shop	Advance one soil boring in area with heavily stained and worn floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-20	Electricians Storage Room	Advance one soil boring in area with heavily stained and worn surface and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	--	--
I-21	Generator Room	Advance one boring at each of the three tile drain pipe locations to a depth of 10' bgs. Assuming that the bottom of the drain pipe is 6' bgs, the boring should be advanced from 6' to 10' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pipe (or 6' to 8' and 8' to 10' bgs) for lab analysis.	3	6	6'-8' and 8'-10'	6	■	■	■	--	--

****Target Constituents and Analytical Methods**

1 RCRA Metals (Methods 6010/7471)
2 Volatile Organic Compounds (Method 8260) including those listed in STARS
3 Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4 STARS Table 2 Semivolatile Organic Compounds by TCLP
5 Polychlorinated Biphenyls (Method 8081)

Notes:
*: Refer to Figure 2-1 for AOC locations.
--: Not applicable
bgs: Below ground surface

TABLE 2-1 (Continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-22	Blue Room	Pipe/utility trenches inaccessible. NGC to remove equipment and storage cabinets to access steel plates covering trenches in northwest quadrant of blue room in vicinity of former hoist area. NGC to remove steel plates in order to access trenches for inspection. Advance five borings in five separate trenches. Assuming that the bottom of each trench is 3' bgs, the borings should be advanced from 3' to 7' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of each trench (or 3' to 5' and 5' to 7' bgs) for lab analysis.	5	10	3'-5' and 5'-7'	10	--	■	■	■	--
		NGC to remove steel plates which cover pits in two office areas located in the southeast quadrant of the blue room. Advance one soil boring in each pit to a depth of 6' bgs. Assuming that the bottom of each pit is approx. 2' bgs, the borings should be advanced from 2' to 6' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of each pit (or 2' to 4' and 4' to 6' bgs) for lab analysis. Four soil samples should be collected for lab analysis.	2	4	2'-4' and 4' 6'	4	■	■	■	--	--
		NGC to remove metal plate covering possible air/electric pit in northeast quadrant of the blue room. Advance one soil boring in pit to a depth of 6' bgs. Assuming that the bottom of the pit is approx. 2' bgs, the boring should be advanced from 2' to 6' with soil samples collected at 0 to 2' and 2' to 4' below the bottom of the pit (or 2' to 4' and 4' to 6' bgs) for lab analysis.	1	2	2'-4' and 4'-6'	2	■	■	■	--	--
I-23	Facilities Maintenance Shop	Advance one boring in vicinity of POG and heavily stained and worn wood block floor. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-24	GOM Storage Area	The former location of the CB&I Chamber needs to be located in the field. Advance one boring at former location of the CB&I Chamber. Assuming that the bottom of the chamber was 6' bgs, the boring should be advanced to a depth of 10 feet with continuous sampling between 2' to 10' bgs. Soil samples should be collected from 0 to 2' and 2' to 4' below the chamber bottom (or 6' to 8' and 8' to 10' bgs) for lab analysis.	1	4	2'-4', 4'-6', 6'-8' and 8'-10'	2	■	■	■	■	--
I-25	Laborers Storage Room	Advance one boring in area with heavily stained and worn floor in former paint spray booth and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	--	--
I-26	Former Paint Tunnel	Advance one boring in area with heavily stained and worn floor and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	■	--
I-27	OAO Hangar	Six former air/electric pits with earthen bottoms were located in the OAO Hangar. The former locations of these pits need to be located in the field. Assuming the bottom of each pit was approx. 1' bgs, the borings should be advanced from 0 to 5' bgs with soil samples collected from 0-2' and 2'-4' below the bottom of each former pit (or 1'-3' and 3'-5' bgs) for lab analysis.	6	12	1'-3' and 3'-5'	12	■	■	■	--	--
I-28	GOM Storage Area/Former Shuttle Wing Hangar	Pipe/utility trenches inaccessible. NGC to remove equipment and storage shelves to access steel plates covering four trenches. NGC to remove steel plates in order to access the trenches for inspection. Advance four borings in the trenches (i.e., one in each trench). Assuming that the bottom of each trench is 3' bgs, the borings should be advanced from 3' to 7' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of each trench (or 3' to 5' and 5' to 7' bgs) for lab analysis.	4	8	3'-5' and 5'-7'	8	--	■	■	■	--
I-29	GSSC Storage Area	Pipe/utility trenches inaccessible. NGC to remove equipment to access steel plates covering two trenches. NGC to remove steel plates in order to access the trenches for inspection. Advance two borings in the trenches (one in each trench). Assuming that the bottom of each trench is 3' bgs, the borings should be advanced from 3'-7' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of each trench (or 3' to 5' and 5' to 7' bgs) for lab analysis.	2	4	3'-5' and 5'-7'	4	--	■	■	■	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:
* Refer to Figure 2-1 for AOC locations
-- Not applicable
bgs Below ground surface

TABLE 2-1 (Continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-30	Liquid Chiller Room	Former oil drum and battery storage rooms. Advance two borings in areas of heavily stained and worn concrete floor and collect soil samples for lab analysis. Both soil borings should be advanced from 0 to 4 feet with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0-2' and 2'-4'	4	■	■	■	■	--
I-31	Wyle Chamber Building	Advance one boring in the location of the former drainage pit in the eastern portion of the building. Assuming that the bottom of the pit is approx. 1' bgs, the boring should be advanced from 0 to 5' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the former pit (or 1' to 3' and 3' to 5' bgs) for lab analysis.	1	2	1'-3' and 3'-5'	2	■	■	■	--	■
		Advance one boring in the location of the condensate pit in the western portion of the building. Assuming that the bottom of the pit is approx. 3' bgs, the boring should be advanced from 3' to 7' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 3' to 5' and 5' to 7' bgs) for lab analysis.	1	2	3'-5' and 5'-7'	2	■	■	■	--	■
		Advance two borings in areas with heavily stained and worn floor in the former autoclave area in the western portion of the building. The borings should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis. Also, at each boring location, collect a concrete core for lab analysis.	2	6 '	concrete cores, 0-2' and 2'-4'	6 '	--	--	--	--	■
I-32	High Bay 1 (including Paint Tunnel, Wood Shop, Lay-up Room and Lay-up Area Office)	Pipe/utility trenches inaccessible. NGC to remove equipment to access steel plates covering three trenches. NGC to remove steel plates in order to access the trenches for inspection. Advance three borings in the trenches (i.e., one in each trench). Assuming that the bottom of each trench is 3' bgs, the borings should be advanced from 3'-7' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of each trench (or 3' to 5' and 5' to 7' bgs) for lab analysis.	3	6	3'-5' and 5'-7'	6	--	■	■	■	--
I-33	Paint Mixing Booth	Advance one boring in an area with heavily stained and worn floor in paint mixing booth and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	--	--
I-34	Paint Tunnel	Advance one boring in an area with heavily stained and worn floor in former paint tunnel and collect soil samples for lab analysis. The boring should be advanced to 4' bgs with soil samples collected at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0-2' and 2'-4'	2	■	■	■	--	--
I-35	Optics Laboratory	Advance one boring in the pit to a depth of 8' bgs. Assuming that the bottom of the pit is approx. 4' bgs, the boring should be advanced from 4' to 8' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 4' to 6' and 6' to 8' bgs) for lab analysis.	1	2	4'-6' and 6'-8'	2	■	■	■		--
I-36	Paint Spray Area	Advance one boring in the trench drain to a depth of 6' bgs. Assuming that the bottom of the trench is approx. 2' bgs, the boring should be advanced from 2' to 6' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the trench (or 2' to 4' and 4' to 6' bgs) for lab analysis.	1	2	2'-4' and 4'-6'	2	■	■	■		
		Advance one boring in the metal-lined pit to a depth of 6' bgs. Assuming that the bottom of the pit is approx. 2' bgs, the boring should be advanced from 2' to 6' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 2' to 4' and 4' to 6' bgs) for lab analysis.	1	2	2'-4' and 4'-6'	2	■	■	■	--	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:
*. Refer to Figure 2-1 for AOC locations
-- Not applicable
' Four (4) soil samples and two (2) concrete core samples
bgs: Below ground surface

TABLE 2-1 (Continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **				
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5
I-37	Paint and Chemical Storage Room	Advance one boring at the sump pit to a depth of 8' bgs. Assuming that the bottom of the pit is approx. 4' bgs, the boring should be advanced from 4' to 8' bgs with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the pit (or 4' to 6' and 6' to 8' bgs) for lab analysis	1	2	4'-6' and 6'-8'	2	■	■	■	--	--
I-38	Well House No. 5	Advance one boring at the drainage trench/dry well in the basement to a depth of 5' below the basement floor. Assuming that the bottom of the drainage trench/dry well is approx. 1' below the basement floor, the boring should be advanced from 1' to 5' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the drainage trench/dry well (or 1' to 3' and 3' to 5' below the basement floor) for lab analysis	1	2	1'-3' and 3'-5'	2	■	■	■	--	--
I-39	Well House No. 6	Advance one boring at the drainage trench/dry well in the basement to a depth of 5' below the basement floor. Assuming that the bottom of the drainage trench/dry well is approx. 1' below the basement floor, the boring should be advanced from 1' to 5' with soil samples collected from 0 to 2' and 2' to 4' below the bottom of the drainage trench/dry well (or 1' to 3' and 3' to 5' below the basement floor) for lab analysis	1	2	1'-3' and 3'-5'	2	■	■	■	--	--
		TOTALS	80	164	--	162					

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:
* Refer to Figure 2-1 for AOC locations
-- Not applicable
bgs Below ground surface

TABLE 2-2
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-1	Former Dry Well within Drainage Trench along Western Property Boundary	Advance one boring within the dry well. Assuming dry well was backfilled and the former bottom of dry well was approximately 16' bgs, boring should be advanced from 12' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected at former bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	7	12' - 26' continuous	2	■	■	■	■	■	--	--	--	■
E-2	Dry Well at West End of Drainage Trench along Northern Property Boundary	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■	■	--	--	--	--
E-3	Dry Well Near Center of Drainage Trench along Northern Property Boundary	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■	■	--	--	--	--
E-4	Dry Well North of Plant 5 Kitchen along Former Taxiway	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■	--	--	--	--	--
E-5	Dry Well Northwest of Plant 5 North Building Entrance along Former Taxiway	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■					--
E-6	Former Dry Well on Former Taxiway	Advance one boring within the dry well. Assuming dry well was backfilled and the former bottom of dry well was approximately 16' bgs, boring should be advanced from 12' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected at former bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	7	12' - 26' continuous	2	■	■	■	■	--	--		--	■
E-7	Dry Well Near Northeast Corner of Plant 5 Building	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■	--	--	--	--	

****Target Constituents and Analytical Methods**

1 RCRA Metals (Methods 6010/7471)
2 Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3 Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4 STARS Table 2 Semivolatile Organic Compounds by TCLP
5 Polychlorinated Biphenyls (Method 8081)
6 Select Glycols (Method 8015)
7 STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8 Pesticides/Herbicides (Methods 8080/8150)

Notes:
* Refer to Figure 2-2 for AOC locations
-- Not Applicable
bgs Below ground surface

TABLE 2-2 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-8	Dry Well West of Plant 25 and Former Wind Tunnel	Advance one boring within the dry well. Assuming that the bottom of the dry well is approximately 16' below grade, the boring should be advanced from 16' to 26' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis. One sample should be collected from the bottom of the dry well (at 16' to 18') and the other sample should be selected based upon visual characterization and field instrumentation measurements.	1	5	16' - 26' continuous	2	■	■	■	■	■	--	--	--	--
E-9	Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1	Advance one soil boring at five of the existing pits to a depth of 6' bgs and collect soil samples at 0 - 2' and 2' - 4' below the bottom of each pit (or 2' - 4' and 4' - 6' bgs) for laboratory analysis. The bottom of each pit is assumed to be 2' bgs.	5	10	2' - 4' and 4' - 6'	10	■	■	■	--	■	--	--	--	--
E-10	Air/Electric Pits in Courtyard "A"	Advance one soil boring at each of two existing pits to a depth of 6' bgs and collect soil samples at 0 - 2' and 2' - 4' below the bottom of each pit (or 2' - 4' and 4' - 6' bgs) for laboratory analysis. The bottom of each pit is assumed to be 2' bgs.	2	4	2' - 4' and 4' - 6'	4	■	■	■	--	■	--	--	--	--
E-11	Recharge Basins	Advance two soil borings within each recharge basin to a depth of 4' below the bottom of the basin and collect soil samples at 0 - 2' and 2' - 4' below the bottom of the basin for laboratory analysis.	4	8	0 - 2' and 2' - 4'	8	■	■	■	■	■	--	--	--	--
E-12	Former Sanitary Leaching Pools West of Plant 5	Advance borings at 50% of the approx. 60 identified leaching pools. Assuming all pools were backfilled and the former bottom of each pool was approximately 12' bgs, the borings should be advanced from 8' to 22' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis at each boring, one at the former bottom of the pool (12' to 14') and the other selected based upon visual characterization and field instrumentation measurements.	30	210	8' - 22' continuous	60	■	■	■	■	■				
E-13	Unverified Former Sanitary Leaching Pools West of Plant 5	Conduct geophysical survey to verify locations of approx. 50 leaching pools. Advance borings at 50% of the identified pools. Assuming all pools were backfilled and the former bottoms were approx. 12' bgs, the borings should be advanced from 8' to 22' with continuous split spoon sampling. Two soil samples should be collected for lab analysis at each boring, one at the former bottom of the pool (12' to 14') and the other selected based upon visual characterization and field instrumentation measurements.	25	175	8' - 22' continuous	50	■	■	■	■	■	--	--	--	■
E-14	Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5	Advance two soil borings in the vicinity of the former settling tanks and collect soil samples at 0 - 2' and 2' - 4' below the bottom of the tanks for laboratory analysis. The bottom of the tanks at the east end (below sludge hopper) and west end is assumed to be 13' and 8' bgs, respectively.	2	4	East End: 13' - 15' and 15' - 17', West End: 8' - 10' and 10' - 12'	4	■	■	■	■	■	--	--	--	--
E-15	Former Sanitary Wastewater Disposal System Wet Well West of Plant 5	Advance one soil boring adjacent to the wet well to a depth of 20' and collect soil samples at 0-2' and 2'-4' below the bottom of the wet well (or 20'-22' and 22'-24' bgs) for lab analysis. The bottom of the wet well is assumed to be 21' bgs.	1	2	20'-22' and 22'-24'	2	■	■	■	■	■	--	--	--	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:
* Refer to Figure 2-2 for AOC locations
-- Not Applicable
bgs Below ground surface

TABLE 2-2 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-16	Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel	Advance one soil boring at former location of leaching pool. Assuming the pool was backfilled and the former bottom of the pool was approximately 12' bgs, the boring should be advanced from 8' to 22' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis, one at the former bottom of the pool (12' to 14' bgs) and the other selected based upon visual characterization and field instrumentation measurements	1	7	8' - 22' continuous	2	■	■	■	■	■	--	--	--	■
E-17	Cesspool North of Former Pilots Ready Room Building	Advance one soil boring at location of cesspool. Assuming the bottom of the cesspool was approximately 12' bgs, the boring should be advanced from 8' to 22' with continuous split spoon sampling. Two soil samples should be collected for lab analysis, one at the bottom of the pool (12' to 14' bgs) and the other selected based upon visual characterization and field instrumentation measurements	1	7	8' - 22' continuous	2	■	■	■	--	--	--	--	--	--
E-18	Former Gasoline Pump House	Conduct a geophysical survey to locate potential abandoned UST(s) at the former location of the gasoline pump house. Advance two soil borings, one at the location of the former gasoline pump house and one at a potential UST location. Advance both borings to a depth of 10' with continuous split spoon sampling. Two soil samples should be collected for lab analysis at each boring based upon visual characterization and field instrumentation measurements	2	10	0-10' continuous	4	lead only	--	--	--	--	--	■	--	■
E-19	Former Sanitary Leaching Pools Converted to Dry Wells	Advance one soil boring at each of two former leaching pools/dry wells. Assuming both pools/dry wells were backfilled and the former bottom of each pool/dry well was approximately 12' bgs, the borings should be advanced from 8' to 22' with continuous split spoon sampling. Two soil samples should be collected for laboratory analysis at each boring, one at the former bottom of the pool/dry well (12' - 14') and the other based upon visual characterization and field instrumentation measurements	2	14	8' - 22' continuous	4	■	■	■	■	■	--	--	--	--
E-20	Former Cold Flow Test Facility Waste Oil UST	Conduct geophysical survey to locate possible abandoned UST. Advance two borings at former location of UST to a depth of 18' bgs. Two soil samples should be collected for lab analysis from each boring, one at the bottom of the former UST and the other should be selected based upon visual characterization and field instrumentation measurements. It is assumed that the top and bottom of the former UST were 4' bgs and 9' bgs, respectively, and the UST was 18' in length	2	16	4' - 20' continuous	4	--	■	■	■	■	--	--	--	■
E-21	Former Cold Flow Test Facility Spillage Collection UST	Conduct geophysical survey to locate possible abandoned UST. Advance two borings at former location of UST to a depth of 22' bgs. Two soil samples should be collected for lab analysis from each boring, one at the bottom of the former UST (11' to 12' bgs) and the other selected based upon visual characterization and field instrumentation measurements. It is assumed that the top and bottom of the former UST were 6' to 7' bgs and 11' to 12' bgs, respectively, and the UST was 18' in length	2	16	6' - 22' continuous	4	■	■	■	■	--	--	--	--	■

****Target Constituents and Analytical Methods**

1 RCRA Metals (Methods 6010/7471)
2 Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3 Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4 STARS Table 2 Semivolatile Organic Compounds by TCLP
5 Polychlorinated Biphenyls (Method 8081)
6 Select Glycols (Method 8015)
7 STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8 Pesticides/Herbicides (Methods 8080/8150)

Notes:
* Refer to Figure 2-2 for AOC locations
-- Not Applicable
bgs Below ground surface

TABLE 2-2 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-22	Former Cold Flow Test Facility Sanitary Leaching Pool	Conduct geophysical survey to locate former leaching pool. Advance one soil boring at former location of pool. Assuming that pool was backfilled and former bottom of pool was approx. 8' bgs, the boring should be advanced from 6' to 18' bgs with continuous split spoon sampling. Two soil samples should be collected for lab analysis, one from the former bottom of the pool (8'-10' bgs) and the other selected based upon visual characterization and field instrumentation measurements.	1	2	6' - 18' continuous	2	■	■	■	■	■	--	--	--	■
E-23	Former Cold Flow Test Facility Transformer Sub Station Trench Drain	Advance one soil boring at former location of trench drain to a depth of 4' bgs and collect soil samples at 0-2' and 2'-4' bgs for laboratory analysis.	1	2	0 - 2' and 2' - 4'	2	--	--	--	--	■	--	--	--	--
E-24	Former Oil and Gravel Surfaced Parking Area West of Structural Test Hangars	Advance six soil borings in the vicinity of a former oil and gravel surfaced parking area (approx. 100,000 sq ft.) to a depth of 4' and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	6	12	0 - 2' and 2' - 4'	12	--	■	■	■	■	--	--	--	--
E-25	Former Oil and Gravel Surfaced Parking Area West of Former Test Platform	Advance two soil borings in the vicinity of a former oil and gravel surfaced parking area (approx. 40,000 sq ft.) to a depth of 4' and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0 - 2' and 2' - 4'	4	--	■	■	■	■	--	--		--
E-26	Former Ash Bunker West of Former Boiler Room	Advance one soil boring at the location of a former ash bunker to a depth of 6' bgs. Assuming that the bottom of the bunker was 2' bgs, collect soil samples at 2' to 4' and 4' to 6' bgs for lab analysis.	1	3	0-2', 2' - 4' and 4' - 6'	2	■	--	■	--	--	--	--	--	--
E-27	Former Blow-Off Pit South of Former Boiler Room	Advance one soil boring at the location of a former blow-off pit. Assuming that the bottom of the pit is approx. 10' bgs, the boring should be advanced from 8' to 20' with continuous split spoon sampling. Two soil samples should be collected for lab analysis, one from the former bottom of the pit (10' to 12') and one selected based upon visual characterization and field instrumentation measurements.	1	6	8' - 20' continuous	2	■	■	■	■	■	--	--	--	--
E-28	Former Maintenance Garage	Advance two soil borings along the north side of the existing building (at the former locations of two garage doors) to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0 - 2' and 2' - 4'	4	■	■	■	■	--	--	--	■	--
E-29	Transformer Pad Adjacent to Former Maintenance Garage	Advance two soil borings at the location of the former transformer pad to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0 - 2' and 2' - 4'	4	--	--	--	--	■	--	--	--	--
E-30	Condensate Vault North of Kitchen	Advance one boring in the drain at the bottom of the vault to a depth of 12' bgs and collect soil samples at 0 to 2' and 2' to 4' below the bottom of the drain (or 8' to 10' and 10' to 12' bgs) for lab analysis. The bottom of the drain is assumed to be 8' bgs.	1	2	8' - 10' and 10' - 12'	2	■	■	■	--	■	--	--	--	--
E-31	Catch Basin in Courtyard "A" Near CAA	Advance one boring at the location of the catch basin to a depth of 14' bgs and collect soil samples at 0 to 2' and 2' to 4' below the bottom of the basin (or 10' to 12' and 12' to 14' bgs) for lab analysis. The bottom of the catch basin is assumed to be 10' bgs.	1	2	10' - 12' and 12' - 14'	2	■	■	■	■	■	--	--	--	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:
* Refer to Figure 2-2 for AOC locations
-- Not Applicable
bgs Below ground surface

TABLE 2-2 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-32	Transformer Pad at Well House No. 5	Advance one boring adjacent to the transformer pad to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' for lab analysis.	1	2	0 - 2' and 2' - 4'	2	--	--	--	--	■	--	--	--	--
E-33	Former Gasoline UST at Well House No. 5	Advance one boring at former location of 275 gallon gasoline UST to a depth of 16' bgs. Two soil samples should be collected for lab analysis, one at the bottom of the former UST (approx. 6' bgs) and the other selected based upon visual characterization and field instrumentation measurements. It is assumed that the top and bottom of the former UST were 3' and 6' bgs, respectively.	1	7	2' - 16' continuous	2	lead only	--	--	--	--	--	■	--	--
E-34	Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House	Locate abandoned 250-gallon gasoline UST via geophysical survey, if necessary. Advance one boring at former location of UST to a depth of 16' bgs. Two soil samples should be collected for lab analysis, one at the bottom of the former UST (approx. 6' bgs) and the other selected based upon visual characterization and field instrumentation measurements. It is assumed that the top and bottom of the former UST was 3' and 6' bgs, respectively.	1	7	2' - 16' continuous	2	lead only	--	--	--	--	--	■	--	■
E-35	Areas of Stressed Vegetation	Advance one soil boring each at two areas of stressed vegetation to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0 - 2' and 2' - 4'	4	■	■	■	■	■	--	--	■	--
E-36	Concrete Foundation of Former Test Platform	Advance two soil borings at the former test platform to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	2	4	0 - 2' and 2' - 4'	4	■	■	■	■	■	--	--	--	--
E-37	Former Drum Storage Area Near Facilities Maintenance Shop	Advance one soil boring at the former drum storage area to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0 - 2' and 2' - 4'	2	■	■	■	■	■	--	--	--	--
E-38	Drums Adjacent to Former Boiler Room	Advance one soil boring at an area where drums were observed adjacent to the former boiler room. Advance the boring to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0 - 2' and 2' - 4'	2	■	■	■	■	■	--	--	--	--
E-39	Tank and Container Storage Area "S-51"	Advance five soil borings at Storage Area "S-51" to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	5	10	0 - 2' and 2' - 4'	10	■	■	■	■	■	--	--	--	--
E-40	Former Material Storage Area Northwest of Plant 5 Building	Advance one soil boring at the former storage area to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis.	1	2	0 - 2' and 2' - 4'	2	■	■	■	■	■	--	--	--	--

****Target Constituents and Analytical Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

* Refer to Figure 2-2 for AOC locations.
-- Not Applicable
bgs. Below ground surface

TABLE 2-2 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
RECOMMENDED PHASE II FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	RECOMMENDED PHASE II INVESTIGATION FIELD ACTIVITIES	Soil Borings				Recommended Analyses **								Geophysical Survey
			No. of Borings	No. of Samples	Sampling Intervals	No. of Samples for Analysis	1	2	3	4	5	6	7	8	
E-41	Former Glycol Shed Adjacent to ACE Building	Advance one soil boring at the former location of the glycol shed to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0 - 2' and 2' - 4'	2	--	--	--	--	--	■	--	--	
E-42	Former Drum Storage Area East of ACE Building	Advance one soil boring at the former location of the drum storage area to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0 - 2' and 2' - 4'	2	■	■	■	■	■	--	--	--	--
E-43	Existing Fuel Oil AST at Former Pilots Ready Room Building	Advance one soil boring adjacent to the AST to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0 - 2' and 2' - 4'	2	--	■	■	■	--	--	--	--	--
E-44	Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building	Standing liquid with "sheen" observed in pipe trench; integrity of trench bottom is unknown, potential discharge of constituents of concern to pipe trench which may have discharged to dry well, sanitary sewer or stormwater sewer system NGC to remove steel plates covering trench to access trench for further inspection Advance one boring adjacent to low point of trench Assuming the bottom of the trench is 2' bgs, the boring should be advanced from 2' to 6' bgs with soil samples collected from 0-2' and 2'-4' below the bottom of the trench (or 2'-4' and 4'-6' bgs) for lab analysis	1	2	2' - 4' and 4' - 6'	2	--	■	■	■	--	--	--	--	--
E-45	Transformer Pad at Well House No. 6	Advance one boring adjacent to the transformer pad to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0 - 2' and 2' - 4'	2	--	--	--	--	■	--	--	--	--
E-46	Transformer Pad Adjacent to Former Boiler Room	Advance one boring adjacent to the transformer pad to a depth of 4' bgs and collect soil samples at 0 to 2' and 2' to 4' bgs for lab analysis	1	2	0 - 2' and 2' - 4'	2	--	--	--	--	■	--	--	--	--
E-47	Former Sump Pit Associated with Former Coal Hopper	Advance one boring at the former location of the sump pit to a depth of 6' bgs Assuming that the bottom of the pit was 2' bgs, collect soil samples at 0 to 2' and 2' to 4' beneath the bottom of the former pit (or 2'-4' and 4'-6' bgs) for lab analysis	1	3	0-2', 2'- 4' and 4' - 6'	2	--	--	■	--	--	--	--	--	--
		TOTALS	127	623	--	254									

****Target Constituents and Analytical Methods**

1 RCRA Metals (Methods 6010/7471)
2 Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3 Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4 STARS Table 2 Semivolatile Organic Compounds by TCLP
5 Polychlorinated Biphenyls (Method 8081)
6 Select Glycols (Method 8015)
7 STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8 Pesticides/Herbicides (Methods 8080/8150)

Notes:
*: Refer to Figure 2-2 for AOC locations
-- Not Applicable
bgs: Below ground surface

- Unverified Former Sanitary Leaching Pools West of Plant 5 (D&B E13, Conrad Area 1) – GPR
- Former Gasoline Pump House (D&B E18, Conrad Area 2) – M/G
- Former Cold Flow Test Facility Waste Oil UST and Former Cold Flow Test Facility Spillage Collection UST (D&B E20 and E21, Conrad Area 3) – M/G
- Former Cold Flow Test Facility Sanitary Leaching Pool (D&B E22, Conrad Area 4) – GPR
- Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House (D&B E34, Conrad Area 5) – M/G
- Former Dry Well within Drainage Trench along Western Property Boundary and Former Sanitary Leaching Pools Converted to Dry Wells (D&B E1 and E19, Conrad Area 6) - GPR
- Former Dry Well on Former Taxiway (D&B E6, Conrad Area 7) – GPR

The locations of these areas are shown on Figure 2-3.

For both geophysical methods, a survey grid was initially laid out within the potential AOC. Readings were recorded from the instrument(s) used at intervals of 0.25 to 2 meters along the grid lines. The measured data were then downloaded and plotted, to create anomaly maps for each area investigated. The anomaly maps were used to locate soil borings. A more detailed description of the methods and instruments used during the geophysical survey is included in the reports from Conrad Geosciences, in Appendix A.

2.2.2 Soil Sampling

This section provides a description of the procedures used to collect soil samples during the Initial Phase II Site Assessment at Plant 5. Dedicated field books, which are available in the project file, provide documentation of the daily field activities conducted at the site during the field program.

LEGEND

- SITE BOUNDARY
- FENCING
- APPROXIMATE AREA OF FORMER LEACHING FIELD
- APPROXIMATE GEOPHYSICAL SURVEY AREA

GUARD HOUSE (OFF-SITE)
FORMER PILOTS READY ROOM BUILDING (25-03)
CONRAD AREA 7 D&B AREA E6
PLANT 25
HISTORY CENTER
SOUTH OYSTER BAY ROAD EXTENSION
GUARD BOOTH (05-03)
SEWAGE PUMP STATION (05-11)
CONDENSATE VAULT
ELECTRICAL SWITCH PAD
COURTYARD "C"
WELL HOUSE NO.5 (25-05)
ELECTRICIANS STORAGE SHED
WELL HOUSE NO.2 (OFF-SITE)
FLAG POLE
PLANT 5 (05-01)
STRUCTURAL TEST HANGARS
TRANSFORMER BUILDING AND LOADING DOCK
CAA AND FACILITY PAINT STORAGE BUILDING (05-09)
WELL HOUSE NO.6 (25-10)
CONCRETE FOUNDATION OF FORMER TEST PLATFORM
CONRAD AREA 1 D&B AREA E12 & E13
COURTYARD "A"
BUILDING 23 (23-01)
DRAINAGE TRENCH (TYP.)
CONRAD AREA 2 D&B AREA E18
SEWAGE PUMP STATION (05-08)
AREA OF FORMER LEACHING FIELD
CONRAD AREA 5 D&B AREA E34
COURTYARD "B"
TRANSFORMERS
PLUMBERS STORAGE BUILDING
FACILITIES STORAGE SHED
FORMER MAINTENANCE GARAGE (05-04)
FIRE PROTECTION PUMP HOUSE (05-05)
FIRE PROTECTION STORAGE TANK
LIQUID NITROGEN TANK
PIPE TRENCH
WELL HOUSE NO.3 (02-28)
AERATION BASINS
NORTH RECHARGE BASIN
SOUTH RECHARGE BASIN
CONRAD AREA 6 D&B AREA E19
WYLE CHAMBER BUILDING (05-07)
CONRAD AREA 3 & 4 D&B AREA E20, E21 & E22
HICKSVILLE – MASSAPEQUA ROAD (ROUTE 107)

GRASS
BITUMINOUS

0 80' 160'
SCALE: 1"=80'

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

INITIAL PHASE II PROGRAM – GEOPHYSICAL AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-3

00040103X

DIR: 1539 FILE: PLANS\GEO-PH-1.DWG LVG:12/11/98

The interior soil probes were advanced utilizing Geoprobe tooling and either an electric hammer-drill or, where access allowed, truck-mounted Simco 200 Earthprobe. At exterior locations, soil samples were collected utilizing a truck-mounted hollow stem auger drill rig (CME 55 or CME 75) with Geoprobe tooling, a truck-mounted Simco 200 Earthprobe with Geoprobe tooling or manual advancement of Geoprobe tooling using an electric hammer-drill.

The Geoprobe tooling consisted of drill rods and either a 1.5-inch outside diameter by 2-foot long or a 2-inch outside diameter by 4-foot long soil probe sampler. A clear polyethylene terephthalate-G (PETG) sample tube liner, dedicated to each soil probe sample, was used to contain the sample within the sampler. Each soil probe was advanced utilizing the hammer-drill, Earthprobe or drill rig's 140-pound hammer to drive the soil probe sampler, sample tube liner and drill rods to the desired depth. The soil probe sampler was retrieved using a mechanical floor jack, the Earthprobe or the drill rig.

All soil samples collected were geologically characterized, inspected for staining, discoloration or odors, and screened for volatile organic compounds (VOCs) using an organic vapor analyzer equipped with a photoionization detector (PID). This information is included on the soil boring logs in Appendix B.

During soil probe installation, a PID was used to monitor VOCs in the workers' breathing zone and at the boreholes. Air monitoring results are documented in the project field books. The PID was calibrated on at least a daily basis, using isobutylene gas at a concentration of 100 parts per million in air. Equipment calibration was documented in the project field books.

Material to be sent for laboratory analysis was placed into laboratory-supplied sample bottles, which were immediately placed into an iced cooler for subsequent transport to the laboratory under Chain of Custody procedures. Sampled material not required for analysis was returned to the borehole from which it came. The remainder of the borehole was filled with clean sand and/or bentonite pellets. Each borehole was restored at grade with the same material that was originally in place. That is, asphalt areas were restored with asphalt, concrete areas were

restored with concrete and grass and dirt areas were restored with dirt or sand. Where manholes were encountered, the covers were replaced after sampling had been completed.

2.2.3 Concrete Core Sampling

In order to evaluate whether historic activities in specific areas had impacted the concrete floors, core samples were collected at several locations within AOC I31 (Wyle chamber Building) during the interior portion of the Initial Phase II Site Assessment program. Concrete cores were collected utilizing an electric hammer-drill equipped with a 3-inch diameter concrete coring bit. The depths of the concrete cores varied from location to location. Samples were analyzed as specified in the scope of work (see Table 2-1). The sampled areas were restored with concrete.

2.2.4 Decontamination Procedures

All non-dedicated sampling equipment was decontaminated between sample locations. Decontamination procedures consisted of:

- external wash with a solution of non-phosphate detergent and potable water;
- potable water rinse; and
- distilled/deionized water rinse.

Decontamination fluids were contained for proper disposal.

2.3 Findings

As previously described, the Initial Phase II Site Assessment consisted of sampling at 39 interior AOCs and 47 exterior AOCs. A description of the investigative activities performed at each AOC is provided below. The samples collected as part of the interior and exterior

investigations are summarized on Tables 2-3 and 2-4, respectively. Boring locations are shown on Figures 2-4 (interior locations), 2-5 (exterior locations) and 2-6 (exterior leaching pools).

Analytical results for all samples analyzed during the Initial Phase II Site Assessment are summarized in tables included in Appendix C. These values were 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"). Those samples analyzed for total VOCs/MTBE and/or SVOCs listed in Tables 1 and 2 of Appendix B in the NYSDEC's Spill Technology and Remediation Series (STARS) Memo #1 were compared to the STARS Tables 1 and 2 Human Health guidance values. Also, those samples analyzed for SVOCs listed in Tables 1 and 2 of Appendix B in the NYSDEC's STARS Memo #1 by Toxicity Characteristic Leaching Procedure (TCLP) were compared to the STARS Tables 1 and 2 TCLP Extraction guidance values.

In addition to the criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg, as presented in the TAGM, were utilized.

Although there are no NYSDEC TAGM criteria for glycols (i.e., ethylene glycol and propylene glycol), discussions with NYSDEC representatives indicate that a level of 50,000 ug/kg has been utilized. In addition, the NYSDEC TAGM criteria for cyanide is identified as "SB" (site background) and there are no Eastern USA background concentration levels for cyanide. Therefore, the NYSDEC "Contained-In" action level of 1,600 mg/kg for total cyanide has been utilized.

TABLE 2-3
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **				
					1	2	3	4	5
I-1	Former Alodine Line Room	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	--	--	--	--
		B03	3.5-5.5' and 5.5-7.5'	3.5-5.5' and 5.5-7.5'	■	--	--	--	--
		B04	1-3' and 3-5'	1-3' and 3-5'	■	--	--	--	--
I-2	Paint Tunnel Room	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	--	--
I-3	Hydraulic Pump Room	B01	0-2' and 2-4'	0-2' and 2-4'	--	■	■	■	--
I-4	Former Drop Quench Oven Area	B01	4-6' and 6-8'	4-6' and 6-8'	--	■	■	■	■
I-5	Condensate Pit	B01	7.5-9.5' and 9.5-11.5'	7.5-9.5' and 9.5-11.5'	■	■	■	■	■
I-6	Former Machine Shop	B01	2.5-4.5' and 4.5-6.5'	2.5-4.5' and 4.5-6.5'	■	--	--	--	--
		B02	4-6' and 6-8'	4-6' and 6-8'	■	--	--	--	--
		B03	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-7	Former Machine Shop	B01, B02, B03	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-8	Machine Shop	B01, B02, B03, B04	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:

Boring locations are shown on Figure 2-4.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-3 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **				
					1	2	3	4	5
I-9	CNC Machine/RAM Room	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-10	Storage Area for SBMS	B01, B02	1-3' and 3-5'	1-3' and 3-5'	■	■	■	■	--
I-11	Forms and Central Storage Area	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-12	Former Model Shop	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-13	Former Model Shop Paint Spray Room	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	--	--
I-14	Former Router Room	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-15	Caged Storage Area	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-16	Model Airplane Shop	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-17	Sheet Metal Storage and Shearer Area	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-18	High Voltage Crew Area	B01	5-7' and 7-9'	5-7' and 7-9'	■	■	■	--	--
		B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	--	--
		B03	4-6' and 6-8'	4-6' and 6-8'	■	■	■	■	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:

Boring locations are shown on Figure 2-4.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-3 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **				
					1	2	3	4	5
I-19	Former Machine Shop	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-20	Electricians Storage Area	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	--	--
I-21	Generator Room	B01	3.5-5.5'	3.5-5.5'	■	■	■	--	--
		B02	3-5'	3-5'	■	■	■	--	--
I-22	Blue Room	B01	1.5-3.5' and 3.5-5.5'	1.5-3.5' and 3.5-5.5'	■	■	■	--	--
		B02, B03	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	--
		B04	2-4' and 4-6'	2-4' and 4-6'	--	■	■	■	--
		B05, B07, B09	2.5-4.5' and 4.5-6.5'	2.5-4.5' and 4.5-6.5'	--	■	■	■	--
		B06	5-7' and 7-9'	5-7' and 7-9'	--	■	■	■	--
		B08	6-8' and 8-10'	6-8' and 8-10'	--	■	■	■	--
I-23	Facilities Maintenance Shop	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-24	GOM Storage Area	B01	6-8' and 8-10'	6-8' and 8-10'	■	■	■	■	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:

Boring locations are shown on Figure 2-4.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-3 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **				
					1	2	3	4	5
I-25	Laborers Storage Room	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	--	--
I-26	Former Paint Tunnel	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-27	OAO Hangar	B01, B04, B05	1-3' and 3-5'	1-3' and 3-5'	■	■	■	--	--
		B02	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	--
		B03	3-5' and 5-7'	3-5' and 5-7'	■	■	■	--	--
I-28	GOM Storage Area/Former Shuttle Wing Hangar	No samples collected (see text for discussion)			--	--	--	--	--
I-29	GSSC Storage Area	No samples collected (see text for discussion)			--	--	--	--	--
I-30	Liquid Chiller Room	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--
I-31	Wyle Chamber Building	B01	5-7' and 7-9'	5-7' and 7-9'	■	■	■	--	■
		B02, B03	2-4', 4-6' and concrete core	2-4', 4-6' and concrete core	--	--	--	--	■
		B04	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	■
I-32	High Bay 1	No samples collected (see text for discussion)			--	--	--	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:

Boring locations are shown on Figure 2-4.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-3 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - INTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **				
					1	2	3	4	5
I-33	Paint Mixing Booth	B01	1.5-3.5' and 3.5-5.5'	1.5-3.5' and 3.5-5.5'	■	■	■	--	--
I-34	Paint Tunnel	B01	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	--
I-35	Optics Laboratory	B01	4-6' and 6-8'	4-6' and 6-8'	■	■	■	--	--
I-36	Paint Spray Area	B01	2.5-4.5' and 4.5-6.5'	2.5-4.5' and 4.5-6.5'	■	■	■	--	--
		B02	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	--
I-37	Paint and Chemical Storage Room	B01	3-5'	3-5'	■	■	■	--	--
I-38	Well House No. 5	B01	1-3' and 3-5'	1-3' and 3-5'	■	■	■	--	--
I-39	Well House No. 6	B01	1-3' and 3-5'	1-3' and 3-5'	■	■	■	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)

Notes:

Boring locations are shown on Figure 2-4.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-4
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-1	Former Dry Well within Drainage Trench along Western Property Boundary	B01	8-24' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
E-2	Dry Well at West End of Drainage Trench along Northern Property Boundary	B01	10-20' continuous	10-12' and 16-18'	■	■	■	■	■	--	--	--	--
E-3	Dry Well Near Center of Drainage Trench along Northern Property Boundary	B01	11-21' continuous	11-13' and 19-21'	■	■	■	■	■	--	--	--	--
E-4	Dry Well North of Plant 5 Kitchen along Former Taxiway	B01	15-25' continuous	15-17' and 21-23'	■	■	■	■	--	--	--	--	--
E-5	Dry Well Northwest of Plant 5 North Building Entrance along Former Taxiway	B01	18-28' continuous	18-20' and 22-24'	■	■	■	■	--	--	--	--	--
E-6	Former Dry Well on Former Taxiway	B01	0-26' continuous	16-18' and 20-22'	■	■	■	■	--	--	--	--	■
E-7	Dry Well Near Northeast Corner of Plant 5 Building	DW01	11-21' continuous	11-13' and 15-17'	■	■	■	■	--	--	--	--	--
E-8	Dry Well West of Plant 25 and Former Wind Tunnel	B01	14-24' continuous	14-16' and 20-22'	■	■	■	■	■	--	--	--	--
E-9	Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1	B01, B03, B04, B05	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	■	--	--	--	--
		B02	3-5' and 5-7'	3-5' and 5-7'	■	■	■	--	■	--	--	--	--
E-10	Air/Electric Pits in Courtyard "A"	B01	6-8' and 8-10'	6-8' and 8-10'	■	■	■	--	■	--	--	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6. --: Not Applicable. Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-10	Air/Electric Pits in Courtyard "A"	B02	2-4' and 4-6'	2-4' and 4-6'	■	■	■	--	■	--	--	--	--
E-11	Recharge Basins	BN1, BN2, BS1, BS2	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--
E-12	Former Sanitary Leaching Pools West of Plant 5	B01	8-22' continuous	10-12' and 12-14'	■	■	■	■	■	--	--	--	■
		B02, B03, B05, B06, B07, B10, B12, B14, B17, B18, B21, B22, B24, B25, B26, B27	8-22' continuous	10-12' and 14-16'	■	■	■	■	■	--	--	--	■
		B04	8-22' continuous	11-13' and 14-16'	■	■	■	■	■	--	--	--	■
		B08	8-20' continuous	14-16' and 18-20'	■	■	■	■	■	--	--	--	■
		B09, B11	8-22' continuous	11-13' and 16-18'	■	■	■	■	■	--	--	--	■
		B13	11-22' continuous	11-13' and 15-17'	■	■	■	■	■	--	--	--	■
		B15	8-22' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	■
		B16, B19, B28	8-24' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	■

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6. --: Not Applicable. Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-12	Former Sanitary Leaching Pools West of Plant 5	B20	8-20' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
		B23	8-22' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
		B29, B30	13-23' continuous	13-15' and 17-19'	■	■	■	■	■	--	--	--	■
E-13	Unverified Former Sanitary Leaching Pools West of Plant 5	B01, B02, B05, B07, B10, B11, B23, B24, B25	11-21' continuous	11-13' and 15-17'	■	■	■	■	■	--	--	--	■
		B03	10-20' continuous	10-12' and 16-18'	■	■	■	■	■	--	--	--	■
		B04, B13, B16, B18	8-22' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	■
		B06, B12	12-22' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	■
		B08, B15, B19, B20, B21, B22	8-22' continuous	10-12' and 14-16'	■	■	■	■	■	--	--	--	■
		B09	8-24' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	■
		B14	8-20' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
		B17	10-20' continuous	10-12' and 14-16'	■	■	■	■	■	--	--	--	■

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-14	Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5	B01	13-15' and 15-17'	13-15' and 15-17'	■	■	■	■	■	--	--	--	--
		B02	8-10' and 10-12'	8-10' and 10-12'	■	■	■	■	■	--	--	--	--
E-15	Former Sanitary Wastewater Disposal System Wet Well West of Plant 5	B01	20-22' and 22-24'	20-22' and 22-24'	■	■	■	■	■	--	--	--	--
E-16	Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel	B01	8-22' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	--
E-17	Cesspool North of Former Pilots Ready Room Building	B01	10-20' continuous	10-12' and 14-16'	■	■	■	--	--	--	--	--	--
E-18	Former Gasoline Pump House	B01	0-10' continuous	1-3' and 6-8'	lead only	--	--	--	--	--	■	--	■
		B02	0-10' continuous	6-8' and 8-10'	lead only	--	--	--	--	--	■	--	■
E-19	Former Sanitary Leaching Pools Converted to Dry Wells	B01	12-22' continuous	12-14' and 16-18'	■	■	■	■	■	--	--	--	--
		B02	10-20' continuous	10-12' and 14-16'	■	■	■	■	■	--	--	--	--
E-20	Former Cold Flow Test Facility Waste Oil UST	B01	6-22' continuous	10-12' and 14-16'	■	■	■	■	--	--	--	--	■
		B02	4-20' continuous	8-10' and 12-14'	--	■	■	■	■	--	--	--	■

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6. --: Not Applicable. Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-21	Former Cold Flow Test Facility Spillage Collection UST	No samples collected (see text for discussion)			--	--	--	--	--	--	--	--	■
E-22	Former Cold Flow Test Facility Sanitary Leaching Pool	B01	8-18' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
		B02	8-18' continuous	8-10' and 12-14'	■	■	■	■	■	--	--	--	■
E-23	Former Cold Flow Test Facility Transformer Sub Station Trench Drain	B01	8-20' continuous	0-2' and 2-4'	--	--	--	--	■	--	--	--	--
E-24	Former Oil and Gravel Surfaced Parking Area West of Structural Test Hangars	B01, B02, B03, B04, B05, B06	0-2' and 2-4'	0-2' and 2-4'	--	■	■	■	■	--	--	--	--
E-25	Former Oil and Gravel Surfaced Parking Area West of Former Test Platform	B01, B02	0-2' and 2-4'	0-2' and 2-4'	--	■	■	■	■	--	--	--	--
E-26	Former Ash Bunker West of Former Boiler Room	B01	2-4' and 4-6'	2-4' and 4-6'	■	--	■	--	--	--	--	--	--
E-27	Former Blow-Off Pit South of Former Boiler Room	B01	8-19' continuous	13-15' and 17-19'	■	■	■	■	■	--	--	--	--
E-28	Former Maintenance Garage	B01, B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	--	--	--	■	--
E-29	Transformer Pad Adjacent to Former Maintenance Garage	B01, B02	0-2' and 2-4'	0-2' and 2-4'	--	--	--	--	■	--	--	--	--
E-30	Condensate Vault North of Kitchen	B01	8-10' and 10-12'	8-10' and 10-12'	■	■	■	--	■	--	--	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6.

--: Not Applicable.

Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-31	Catch Basin in Courtyard "A" Near CAA	B01	8-10' and 10-12'	8-10' and 10-12'	■	■	■	■	■	--	--	--	--
E-32	Transformer Pad at Well House No. 5	B01	0-2' and 2-4'	0-2' and 2-4'	--	--	--	--	■	--	--	--	--
E-33	Former Gasoline UST at Well House No. 5	B01	2-14' continuous	5-7' and 9-11'	lead only	--	--	--	--	--	■	--	--
E-34	Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House	B01	2-16' continuous	6-8' and 10-12'	lead only	--	--	--	--	--	■	--	■
E-35	Areas of Stressed Vegetation	B01 and B02	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	■	--
E-36	Concrete Foundation of Former Test Platform	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--
		B02	5-7' and 7-9'	5-7' and 7-9'	■	■	■	■	■	--	--	--	--
E-37	Former Drum Storage Area Near Facilities Maintenance Shop	B01	1-3' and 3-5'	1-3' and 3-5'	■	■	■	■	■	--	--	--	--
E-38	Drums Adjacent to Former Boiler Room	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--
E-39	Tank and Container Storage Area "S-51"	B01, B02, B03, B04, B05	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6. --: Not Applicable. Depths are feet below grade.

TABLE 2-4 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE II SITE ASSESSMENT
INITIAL PHASE II SITE ASSESSMENT FIELD PROGRAM ACTIVITIES - EXTERIOR AREAS

AOC	Description	Boring Number	Samples Collected	Samples Analyzed	Analytical Parameters **								Geophysical Survey
					1	2	3	4	5	6	7	8	
E-40	Former Material Storage Area Northwest of Plant 5 Building	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--
E-41	Former Glycol Shed Adjacent to ACE Building	B01	0-2' and 2-4'	0-2' and 2-4'	--	--	--	--	--	■	--	--	--
E-42	Former Drum Storage Area East of ACE Building	B01	0-2' and 2-4'	0-2' and 2-4'	■	■	■	■	■	--	--	--	--
E-43	Existing Fuel Oil AST at Former Pilots Ready Room Building	B01	0-2' and 2-4'	0-2' and 2-4'	--	■	■	■	--	--	--	--	--
E-44	Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building	B01	4-14' continuous	4-6' and 10-12'	--	■	■	■	--	--	--	--	--
E-45	Transformer Pad at Well House No. 6	B01	0-2' and 2-4'	0-2' and 2-4'	--	--	--	--	■	--	--	--	--
E-46	Transformer Pad Adjacent to Former Boiler Room	B01	0-2' and 2-4'	0-2' and 2-4'	--	--	--	--	■	--	--	--	--
E-47	Former Sump Pit Associated with Former Coal Hopper	B01	4-10' continuous	4-6' and 6-8'	--	--	■	--	--	--	--	--	--

****Analytical Parameters and Methods**

1. RCRA Metals (Methods 6010/7471)
2. Volatile Organic Compounds (Method 8260) including those listed in STARS Table 1
3. Semivolatile Organic Compounds (Method 8270) including those listed in STARS Table 2
4. STARS Table 2 Semivolatile Organic Compounds by TCLP
5. Polychlorinated Biphenyls (Method 8081)
6. Select Glycols (Method 8015)
7. STARS Table 1 Volatile Organic Compounds/MTBE (Method 8021)
8. Pesticides/Herbicides (Methods 8080/8150)

Notes:

Boring locations are shown on Figures 2-5 and 2-6. --: Not Applicable. Depths are feet below grade.

LEGEND

I01B01 ● SOIL BORING LOCATION AND DESIGNATION

STRUCTURAL TEST HANGARS
(ADDRESSED AS PART OF A SEPARATE PHASE I/PHASE II SITE ASSESSMENT FOR THE STRUCTURAL TEST HANGARS ONLY)

WELL HOUSE No.5

WELL HOUSE No.6

+ 900'

BUILDING 23

0 40 80
SCALE IN FEET

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

INITIAL PHASE II PROGRAM SOIL BORING LOCATION MAP – INTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-4

DIR:1539 FILE: PLAI5-1.DWG LVG-12/10/98

000401FB04X

LEGEND

- SITE BOUNDARY
- FENCING
- APPROXIMATE AREA OF FORMER LEACHING FIELD
- E01B01 SOIL BORING LOCATION AND DESIGNATION

GUARD HOUSE (OFF-SITE)
E17B01
FORMER PILOTS READY ROOM BUILDING (25-03)
E43B01
E07B01
E06B01
E05B01
SEWAGE PUMP STATION (05-11)
CONDENSATE VAULT
E30B01
ELECTRICAL SWITCH PAD
COURTYARD "C"
WELL HOUSE NO.2 (OFF-SITE)
FLAG POLE
PLANT 25
E03B01
GUARD BOOTH (05-03)
E04B01
E33B01
E32B01
WELL HOUSE NO.5 (25-05)
ELECTRICIANS STORAGE SHED
HISTORY CENTER
SOUTH OYSTER BAY ROAD EXTENSION
PLANT 5 (05-01)
STRUCTURAL TEST HANGARS
TRANSFORMER BUILDING AND LOADING DOCK
CAA AND FACILITY PAINT STORAGE BUILDING (05-09)
E39B01
E39B02
E31B01
E39B03
E10B01
E39B04
E39B05
COURTYARD "A"
E45B01
E16B01
E08B01
E36B01
E36B02
E25B01
E02B01
E25B02
CONCRETE FOUNDATION OF FORMER TEST PLATFORM
E40B01
WELL HOUSE NO.6 (25-10)
E24B01
DRAINAGE TRENCH (TYP.)
E10B02
BUILDING 23 (23-01)
E24B02
E24B06
E24B03
E14B01
E15B01
E18B01
E18B02
SEWAGE PUMP STATION (05-08)
E14B02
E24B05
E09B01
E24B04
E09B02
E19B01
E09B03
E09B04
E19B02
E01B01
AREA OF FORMER LEACHING FIELD (REFER TO FIGURE 3 FOR SOIL BORING LOCATIONS AND DESIGNATIONS)
E09B05
WYLE CHAMBER BUILDING (05-07)
E23B01
E20B02
E20B01
E22B01
E21B01
PLUMBERS STORAGE BUILDING
E38B01
TRANSFORMERS
E27B01
E46B01
E47B01
E26B01
FACILITIES STORAGE SHED
COURTYARD "B"
E41B01
E35B01
E37B01
E42B01
E34B01
FORMER MAINTENANCE GARAGE (05-04)
E28B01
FIRE PROTECTION PUMP HOUSE (05-05)
E28B02
E29B01
FIRE PROTECTION STORAGE TANK
LIQUID NITROGEN TANK
E29B02
E44B01
PIPE TRENCH
WELL HOUSE NO.3 (02-28)
AERATION BASINS
E35B02
E11BN01
E11BN02
NORTH RECHARGE BASIN
E11BS01
E11BS02
SOUTH RECHARGE BASIN

HICKSVILLE – MASSAPEQUA ROAD (ROUTE 107)

0 80 160
SCALE IN FEET

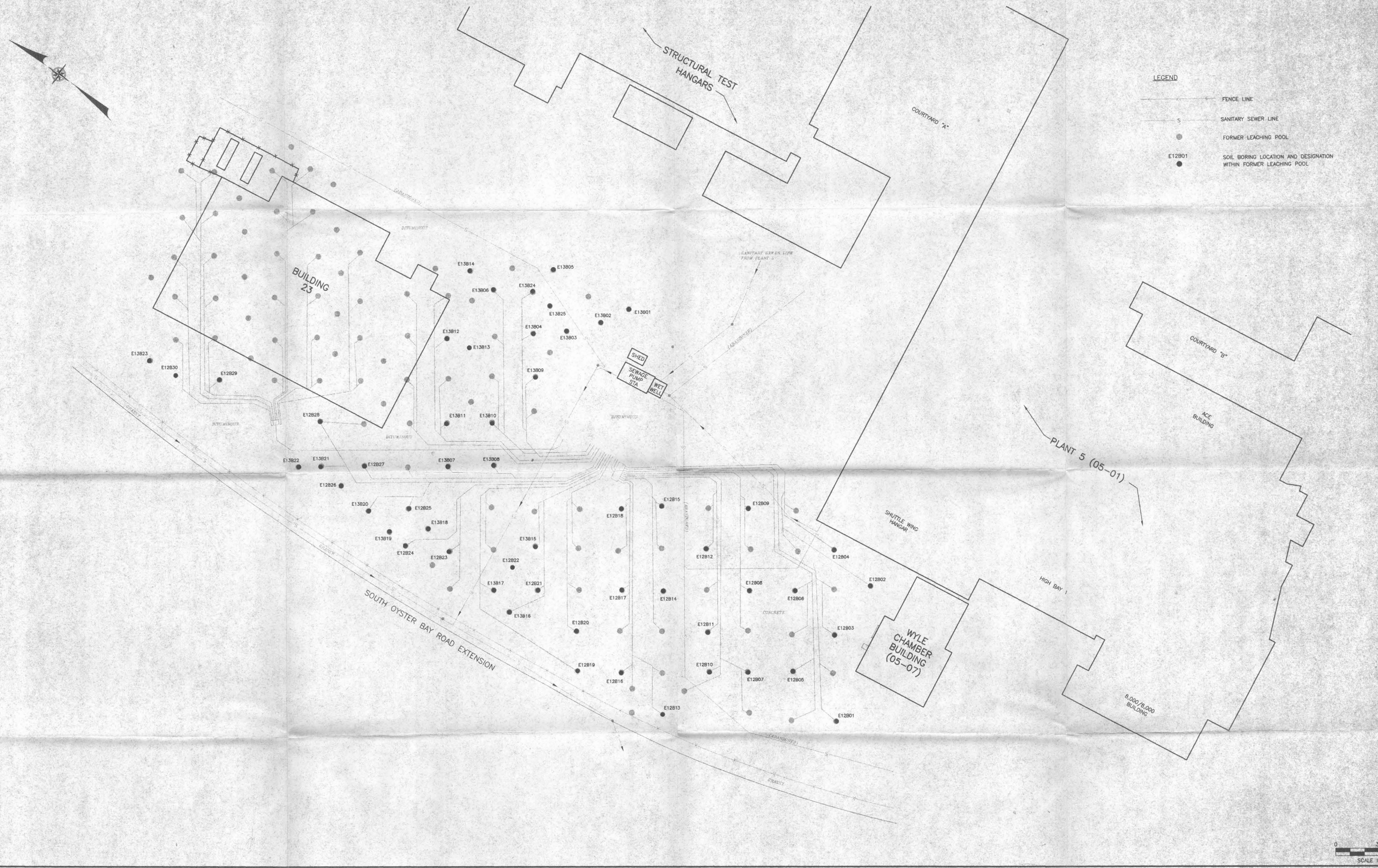
DIR: 1539 FILE: PLAN5-NEW.DWG LVG/12/10/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

INITIAL PHASE II PROGRAM SOIL BORING LOCATION MAP – EXTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-5



NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

INITIAL PHASE II PROGRAM SOIL BORING LOCATION MAP – AREA OF FORMER LEACHING FIELD

FIGURE 2-6

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

DIR:1539
FILE: PLANS-G.DWG
LVG/12/18/98

In addition, for screening purposes, the analytical results of the concrete core samples obtained during Initial Phase I Site Assessment were compared to the results of a study published by the Portland Cement Association (PCA) entitled, "An Analysis of Trace Metals in Cement and Cement Kiln Dust." The study presents a "normal" or average concentration range of total trace metals in a "typical" cement. The table that follows presents the results of the study. In addition, the results of the PCA study were converted to estimated total trace metal concentrations in concrete based on an assumed density and cement content of concrete (i.e., 4,000 lbs/cy and 650 lbs/cy, respectively).

Trace Metals	Range of Concentrations in Cement (mg/kg)	Estimated Range of Concentrations in Concrete (mg/kg)
Antimony	0.7 – 4	0.1 - 0.6
Arsenic	5 – 71	0.8 - 11.4
Beryllium	91 - 1,402	14.6 – 224.3
Cadmium	0.32 - 3.05	0.051 - 0.49
Chromium	25 – 422	4 - 67.4
Lead	1 – 75	0.16 – 12
Mercury	<0.001 - 0.04	<0.0002 - 0.006
Nickel	10 – 129	1.6 - 20.6
Selenium	0.62 - 2.23	0.10 - 0.36
Silver	6.75 - 19.9	1.08 - 3.2
Thallium	0.01 - 2.58	0.002 - 0.41

It should be noted that the results of the PCA study presented above do not represent any type of regulatory threshold; and, the study results are used in the discussion of the findings which follow only as a benchmark with respect to "typical" contaminant ranges in concrete.

2.3.1 Interior Investigation

As previously discussed, the Initial Phase II Site Assessment interior investigation activities were conducted in June, July, and August 1998 at the following areas at the site:

- Former Alodine Room (I1)
- Paint Tunnel Room (I2)

- Hydraulic Pump Room (I3)
- Former Drop Quench Oven Area (I4)
- Condensate Pit (I5)
- Former Machine Shop (I6)
- Former Machine Shop (I7)
- Machine Shop (I8)
- CNC/RAM Room (I9)
- Storage Area for SBMS (I10)
- Forms and Central Storage Area (I11)
- Former Model Shop (I12)
- Former Model Shop Paint Spray Room (I13)
- Former Router Room (I14)
- Caged Storage Area (I15)
- Model Airplane Shop (I16)
- Sheet Metal Storage and Shearer Area (I17)
- High Voltage Crew Area (I18)
- Former Machine Shop (I19)
- Electricians Storage Room (I20)
- Generator Room (I21)
- Blue Room (I22)
- Facilities Maintenance Shop (I23)
- GOM Storage Area (I24)
- Laborers Storage Room (I25)
- Former Paint Tunnel (I26)
- OAO Hangar (I27)
- GOM Storage Area/Former Shuttle Wing Hangar (I28)
- GSSC Storage Area (I29)
- Liquid Chiller Room (I30)
- Wyle Chamber (I31)

- High Bay 1 (I32)
- Paint Mixing Booth (I33)
- Paint Tunnel (I34)
- Optics Laboratory (I35)
- Paint Spray Area (I36)
- Paint and Chemical Storage Room (I37)
- Well House No. 5 (I38)
- Well House No. 6 (I39)

An area by area discussion of the Initial Phase II Site Assessment interior investigation activity findings is presented below. A brief description of each interior area of concern is provided in Table 2-5.

I1 - Former Alodine Room

Eight soil samples were collected at soil boring locations I01B01, I01B02, I01B03 and I01B04 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Table C-5 in Appendix C and are summarized as follows:

- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I01B01 (0-2), I01B01 (2-4), I01B02 (0-2), I01B02 (2-4), I01B03 (3.5-5.5), I01B03 (5.5-7.5), I01B04 (1-3) and I01B04 (3-5).

I2 - Paint Tunnel Room

Four soil samples were collected at soil boring locations I02B01 and I02B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

TABLE 2-5
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
I-1	Former Alodine Line Room	Pit located in the Former Alodine Line Room (also former Plexiglass Room) within a heavily stained and pitted concrete bermed tank area; pit contains liquid; integrity of pit floor is unknown; potential discharges of constituents of concern to pit and soil.
I-2	Paint Tunnel Room	Paint tunnel; use and storage of paints, solvents, thinners and other chemicals; POG area identified; stained floor adjacent to wet curtain system trough behind paint tunnel; potential discharges of constituents of concern to underlying soil.
I-3	Hydraulic Pump Room	Surficial staining; oily residue on floor; according to NGC personnel, several spills occurred in this room; potential discharges of constituents of concern to underlying soil.
I-4	Former Drop Quench Oven Area	Inactive/disconnected sump with ejector pump in northwest corner of the Former Drop Quench Oven Area (also former Router Room); bottom of sump is rusted/pitted; integrity of pit floor unknown; pit in close proximity to former TCE degreasing tank; potential discharges of constituents of concern to the pit and soil underlying pit.
I-5	Condensate Pit	Surficial staining, oily residue and dirt/debris observed on floor of condensate pit; integrity of pit floor is unknown; pit may contain a sump or floor drain with an earthen bottom; pit in close proximity to former TCE degreasing tank and other processes including former Drop Quench oven Area (also former Motor Mounts and Landing Gear Areas.
I-6	Former Machine Shop	Location of a former quench tank and location of former hard chrome process line pits; potential discharges of constituents of concern to underlying soil.
I-7	Former Machine Shop	Heavily stained and displaced wood block flooring observed in areas of former machines; potential discharges of constituents of concern to underlying soil.
I-8	Machine Shop	Heavily stained and displaced wood block flooring observed around existing machines in Machine Shop; potential discharges of constituents of concern to underlying soil.
I-9	CNC Machine/RAM Room	Heavily stained and displaced wood block flooring observed around existing machine in CNC Machine/RAM Room; potential discharges of constituents of concern to underlying soil.
I-10	Storage Area for SBMS	Heavily stained and displaced wood block flooring observed along northern perimeter and northeast corner of the Storage Area for SBMS (also part of former Model Shop); potential discharges of constituents of concern to underlying soil.
I-11	Forms and Central Storage Area	Heavily stained and displaced wood block flooring observed along east wall of Forms and Central Storage Area (also part of former Model Shop); potential discharges of constituents of concern to underlying soil.
I-12	Former Model Shop	Heavily stained and displaced wood block flooring observed in the southeast corner and other areas of the Former Model Shop; potential discharges of constituents of concern to underlying soil.
I-13	Former Model Shop Paint Spray Room	Former paint spray room; potential discharges of constituents of concern to underlying soil.
I-14	Former Router Room	Heavily stained and displaced wood block flooring observed along the northern perimeter of the Former Router Room (also former Tail Surfaces Area) in areas of former machines; potential discharges of constituents of concern to underlying soil.
I-15	Caged Storage Area	Former machining and minor manufacturing area; former brush Alodine and spray painting area; potential discharges of constituents of concern to underlying soil.

Notes:

*: Refer to Figure 2-1 for AOC locations.

TABLE 2-5 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
I-16	Model Airplane Shop	Former machine shop; storage of paints, solvents, etc.; former brush Alodine and spray painting area; potential discharges of constituents of concern to underlying soil.
I-17	Sheet Metal Storage and Shearer Area	Former and existing machining area; surficial staining; according to NGC personnel, several spills occurred in this area; potential discharges of constituents of concern to underlying soil.
I-18	High Voltage Crew Area	Manhole cover to dry well located along south wall of the High Voltage Crew Area (also former Carpentry Shop); integrity and use of dry well unknown; large steel plate (possible former machine pit) observed in center of High Voltage Crew Area; integrity of pit is unknown; paint spray booth located in southwest corner of room; potential discharges of constituents of concern to underlying soil.
I-19	Former Machine Shop	Former and existing machine shop; storage cabinets with solvents and primers; potential discharges of constituents of concern to underlying soil.
I-20	Electricians Storage Room	Former paint storage area; potential discharges of constituents of concern to underlying soil.
I-21	Generator Room	Three "drain pits" with tile pipes in compressor foundations of Generator Room (former Mechanical Equipment Room). Tile drain pipes discharge to soil beneath compressor foundations; potential discharges containing constituents of concern to underlying soil.
I-22	Blue Room	An oily residue, metal filings & dirt/debris observed in the pipe/utility trenches located in the southwest quadrant of Blue Room (also former Main Assembly Area); integrity of trench floor is unknown; steel plates covering pits observed in two office areas located along southwest quadrant of Blue Room; steel plate covering possible air/electric pit in northeast quadrant; potential discharges containing constituents of concern to underlying soil.
I-23	Facilities Maintenance Shop	Former and existing machine shop in northern portion of area; location of POG; heavily stained wood block floor. According to NGC personnel, mercury and oil spills occurred in this area; potential discharges of constituents of concern to underlying soil.
I-24	GOM Storage Area	Former location of CB&I Chamber in northwest corner of the area. According to NGC personnel, oil leaks occurred in the chamber area; potential discharges of constituents of concern to underlying soil.
I-25	Laborers Storage Area	Former paint spray booth; potential discharges of constituents of concern to underlying soil.
I-26	Former Paint Tunnel	Former location paint spray tunnel; evidence of former drum storage; paint staining on floor; potential discharges of constituents of concern to underlying soil.
I-27	OAO Hangar	Six former air/electric pits with earthen bottoms were located in the OAO Hangar; potential discharges of constituents of concern to pits; potential impact to underlying soil.
I-28	GOM Storage Area/Former Shuttle Wing Hangar	An oily residue, metal filings and dirt/debris were observed in four pipe/utility trenches of the GOM Storage Area/Former Shuttle Wing Hangar; integrity of the trench floors is unknown; potential discharges of constituents of concern to underlying soil.
I-29	GSSC Storage Area	An oily residue, metal filings and dirt/debris were observed in two pipe/utility trenches bisecting the GSSC Storage Area (also part of former Shuttle Wing Hangar); integrity of the trench floors is unknown; potential discharges of constituents of concern
I-30	Liquid Chiller Room	Former location of Oil Storage and Battery Rooms; heavily stained and worn/chipped concrete floor observed in the Liquid Chiller Room; potential discharges of constituents of concern to underlying soil.

Notes:
*: Refer to Figure 2-1 for AOC locations.

TABLE 2-5 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - INTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
I-31	Wyle Chamber Building	Former drainage pit located in east side of building; pit contained drain with earthen bottom; potential discharges of constituents of concern to underlying soil; existing condensate pit located near garage door along west wall of building; potential discharges of constituents of concern to underlying soil.
I-32	High Bay 1 (including Paint Tunnel, Wood Shop, Lay-up Room and Lay-up Area Office)	An oily residue, metal filings and dirt/debris were observed in the three pipe/utility trenches located in High Bay 1; integrity of the trench floors are unknown; potential discharges of constituents of concern to underlying soil.
I-33	Paint Mixing Booth	Former paint mixing booth; stained and worn floor; potential discharges of constituents of concern to underlying soil.
I-34	Paint Tunnel	Former paint tunnel; potential discharges of constituents of concern to underlying soil.
I-35	Optics Laboratory	Pit located in center of lab; integrity of pit bottom is unknown; potential discharges of constituents of concern to pit and underlying soil.
I-36	Paint Spray Area	Former paint spray area; metal-lined pit located in spray area is heavily coated with residual paint; trench drain contains sludge material; integrity of pit bottom and trench drain bottom is unknown; potential discharges of constituents of concern to pit, trench and underlying soil.
I-37	Paint and Chemical Storage Room	A paint stained sump pit is located along the north wall of the Paint and Chemical Storage Room; integrity of the sump pit is unknown; potential discharges of constituents of concern to underlying soil.
I-38	Well House No. 5	Drainage trench/dry well in basement; potential discharges of constituents of concern to underlying soil.
I-39	Well House No. 6	Drainage trench/dry well in basement; potential discharges of constituents of concern to underlying soil.

Notes:

*: Refer to Figure 2-1 for AOC locations.

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I02B01 (0-2), I02B01 (2-4), I02B02 (0-2) and I02B02 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I02B01 (0-2), I02B01 (2-4), I02B02 (0-2) and I02B02 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I02B01 (0-2), I02B01 (2-4), I02B02 (0-2) and I02B02 (2-4).

I3 - Hydraulic Pump Room

Two soil samples were collected at soil boring location I03B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I03B01 (0-2) and I03B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I03B01 (0-2) and I03B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil sample I03B01 (0-2).

I4 - Former Drop Quench Oven Area

Three soil samples were collected at soil boring location I04B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-4 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I04B01 (4-6) and I04B01 (6-8).
- Semivolatile Organic Compounds
  - Dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I04B01 (4-6) and I04B01 (6-8). In addition, phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I04B01 (4-6).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I04B01 (4-6) and I04B01 (6-8).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I04B01 (4-6) and I04B01 (6-8).

I5 - Condensate Pit

Two soil samples were collected at soil boring location I05B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1 through C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I05B01 (7.5-9.5) and I05B01 (9.5-11.5).
- Semivolatile Organic Compounds
  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I05B01 (7.5-9.5). In addition, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was also exceeded in soil sample I05B01 (7.5-9.5).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I05B01 (7.5-9.5) and I05B01 (9.5-11.5).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I05B01 (7.5-9.5) and I05B01 (9.5-11.5).
- RCRA Metals
  - Mercury was detected at a concentration exceeding Eastern USA background levels in soil sample I05B01 (7.5-9.5).

I6 - Former Machine Shop

Six soil samples were collected at soil boring locations I06B01, I06B02 and I06B03 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I06B03 (0-2) and I06B03 (2-4).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I06B03 (2-4). In addition, dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I06B03 (0-2) and I06B03 (2-4).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I06B03 (0-2) and I06B03 (2-4).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I06B01 (2.5-4.5), I06B01 (4.5-6.5), I06B02 (4-6), I06B02 (6-8), I06B03 (0-2) and I06B03 (2-4).

I7 - Former Machine Shop

Six soil samples were collected at soil boring locations I07B01, I07B02 and I07B03 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I07B01 (0-2), I07B01 (2-4), I07B02 (0-2), I07B02 (2-4), I07B03 (0-2) and I07B03 (2-4).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene, dibenzo(a,h)anthracene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I07B03 (0-2).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I07B01 (0-2), I07B01 (2-4), I07B02 (0-2), I07B02 (2-4), I07B03 (0-2) and I07B03 (2-4).
- RCRA Metals
  - Mercury was detected at a concentration exceeding Eastern USA background levels in soil sample I07B03 (2-4).

I8 - Machine Shop

Eight soil samples were collected at soil boring locations I08B01, I08B02, I08B03 and I08B04 during the June through August 1998 Initial Phase II Site Assessment field investigation.

Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I08B01 (0-2), I08B01 (2-4), I08B02 (0-2), I08B02 (2-4), I08B03 (0-2), I08B03 (2-4), I08B04 (0-2) and I08B04 (2-4).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I08B01 (0-2), I08B01 (2-4), I08B02 (0-2), I08B02 (2-4), I08B03 (0-2), I08B03 (2-4), I08B04 (0-2) and I08B04 (2-4).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I08B01 (0-2), I08B01 (2-4), I08B02 (0-2), I08B02 (2-4), I08B03 (0-2), I08B03 (2-4), I08B04 (0-2) and I08B04 (2-4).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I08B01 (0-2), I08B01 (2-4), I08B02 (0-2), I08B02 (2-4), I08B03 (0-2), I08B03 (2-4), I08B04 (0-2) and I08B04 (2-4).

I9 - CNC/RAM Room

Two soil samples were collected at soil boring location I09B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I09B01 (0-2) and I09B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I09B01 (0-2) and I09B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I09B01 (0-2) and I09B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I09B01 (0-2) and I09B01 (2-4).

I10 - Storage Area for SBMS

Four soil samples were collected at soil boring locations I10B01 and I10B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I10B01 (1-3), I10B01 (3-5), I10B02 (1-3) and I10B02 (3-5).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(a)pyrene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I10B01 (1-3) and I10B02 (1-3). In addition, benzo(a)pyrene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil samples I10B01 (1-3), I10B02 (1-3), and I10B02 (3-5).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion

for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I10B01 (1-3), I10B01 (3-5), I10B02 (1-3) and I10B02 (3-5).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I10B01 (1-3), I10B01 (3-5), I10B02 (1-3) and I10B02 (3-5).

I11 - Forms and Central Storage Area

Two soil samples were collected at soil boring location I11B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I11B01 (0-2) and I11B01 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I11B01 (0-2) and I11B01 (2-4). In addition, dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I11B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I11B01 (0-2) and I11B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I11B01 (0-2) and I11B01 (2-4).

I12 - Former Model Shop

Four soil samples were collected at soil boring locations I12B01 and I12B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I12B01 (0-2), I12B01 (2-4), I12B02 (0-2) and I12B02 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene and chrysene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I12B02 (2-4). In addition, benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I12B01 (0-2), I12B01 (2-4) and I12B02 (2-4). Also, dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I12B02 (2-4) and phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I12B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I12B01 (0-2), I12B01 (2-4), I12B02 (0-2) and I12B02 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I12B01 (0-2), I12B01 (2-4), I12B02 (0-2) and I12B02 (2-4).

I13 - Former Model Shop Paint Spray Room

Two soil samples were collected at soil boring location I13B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I13B01 (0-2) and I13B01 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I13B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I13B01 (0-2) and I13B01 (2-4).

I14 - Former Router Room

Four soil samples were collected at soil boring locations I14B01 and I14B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I14B01 (0-2), I14B01 (2-4), I14B02 (0-2) and I14B02 (2-4).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I14B01 (0-2), I14B01 (2-4), I14B02 (0-2) and I14B02 (2-4).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I14B01 (0-2), I14B01 (2-4), I14B02 (0-2) and I14B02 (2-4).
- RCRA Metals
  - Arsenic was detected at a concentration exceeding Eastern USA background levels in soil sample I14B02 (0-2).

I15 - Caged Storage Area

Two soil samples were collected at soil boring location I15B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I15B01 (0-2) and I15B01 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I15B01 (0-2).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I15B01 (0-2) and I15B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I15B01 (0-2) and I15B01 (2-4).

I16 – Model Airplane Shop

Two soil samples were collected at soil boring location I16B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I16B01 (0-2) and I16B01 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I16B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I16B01 (0-2) and I16B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I16B01 (0-2) and I16B01 (2-4).

I17 - Sheet Metal Storage and Shearer Area

Two soil samples were collected at soil boring locations I17B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I17B01 (0-2) and I17B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I17B01 (0-2) and I17B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I17B01 (0-2) and I17B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I17B01 (0-2) and I17B01 (2-4).

I18 - High Voltage Crew Area

Six soil samples were collected at soil boring locations I18B01, I18B02 and I18B03 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I18B01 (5-7), I18B01 (7-9), I18B02 (0-2), I18B02 (2-4), I18B03 (4-6) and I18B03 (6-8).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B01 (7-9). In addition, benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B02 (0-2).

  - Benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B02 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample I18B01 (7-9).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I18B03 (4-6) and I18B03 (6-8).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I18B01 (5-7), I18B01 (7-9), I18B02 (0-2), I18B02 (2-4), I18B03 (4-6) and I18B03 (6-8).

I19 - Former Machine Shop

Two soil samples were collected at soil boring location I19B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I19B01 (0-2) and I19B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I19B01 (0-2) and I19B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I19B01 (0-2) and I19B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I19B01 (0-2) and I19B01 (2-4).

I20 - Electricians Storage Room

Two soil samples were collected at soil boring location I20B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I20B01 (0-2) and I20B01 (2-4).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I20B01 (0-2) and I20B01 (2-4). In addition, benzo(a)anthracene and chrysene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I20B01 (2-4).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I20B01 (0-2) and I20B01 (2-4).

I21 - Generator Room

Two soil samples were collected at soil boring locations I21B01 and I21B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I21B01 (3.5-5.5) and I21B02 (3-5).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I21B01 (3.5-5.5) and I21B02 (3-5).

- RCRA Metals

  - Barium, cadmium and mercury were detected at concentrations exceeding Eastern USA background levels in soil sample I21B02 (3-5). In addition, mercury was detected at a concentration exceeding Eastern USA background levels in soil sample I21B01 (3.5-5.5).

I22 - Blue Room

Eighteen soil samples were collected at soil boring locations I22B01, I22B02, I22B03, I22B04, I22B05, I22B06, I22B07, I22B08 and I22B09 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I22B01 (1.5-3.5), I22B01 (3.5-5.5), I22B02 (2-4), I22B02 (4-6), I22B03 (2-4), I22B03 (4-6), I22B04 (2-4), I22B04 (4-6), I22B05 (2.5-4.5), I22B05 (4.5-6.5), I22B06 (5-7), I22B06 (7-9), I22B07 (2.5-4.5), I22B07 (4.5-6.5), I22B08 (6-8), I22B08 (8-10), I22B09 (2.5-4.5) and I22B09 (4.5-6.5).

- Semivolatile Organic Compounds

  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I22B01 (3.5-5.5).

- As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I22B04 (2-4), I22B04 (4-6), I22B05 (2.5-4.5), I22B05 (4.5-6.5), I22B06 (5-7), I22B06 (7-9), I22B07 (2.5-4.5), I22B07 (4.5-6.5), I22B08 (6-8), I22B08 (8-10), I22B09 (2.5-4.5) and I22B09 (4.5-6.5).

- RCRA Metals

  - Cadmium was detected at a concentration exceeding Eastern USA background levels in soil sample I22B01 (3.5-5.5).

I23 - Facilities Maintenance Shop

Two soil samples were collected at soil boring location I23B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I23B01 (0-2) and I23B01 (2-4).

- Semivolatile Organic Compounds

  - Phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I23B01 (0-2).

  - As indicated above, although there was one SVOC detected at a concentration that exceeded the NYSDEC TAGM criteria for an *individual* compound, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I23B01 (0-2) and I23B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I23B01 (0-2) and I23B01 (2-4).

I24 - GOM Storage Area

Two soil samples were collected at soil boring location I24B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I24B01 (6-8) and I24B01 (8-10).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I24B01 (6-8) and I24B01 (8-10).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I24B01 (6-8) and I24B01 (8-10).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I24B01 (6-8) and I24B01 (8-10).

I25 - Laborers Storage Room

Two soil samples were collected at soil boring location I25B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I25B01 (0-2) and I25B01 (2-4).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I25B01 (0-2) and I25B01 (2-4).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I25B01 (0-2) and I25B01 (2-4).

I26 - Former Paint Tunnel

Two soil samples were collected at soil boring location I26B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I26B01 (0-2) and I26B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I26B01 (0-2) and I26B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I26B01 (0-2) and I26B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I26B01 (0-2) and I26B01 (2-4).

I27 - OAO Hangar

Eleven soil samples were collected at soil boring locations I27B01, I27B02, I27B03, I27B04 and I27B05 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I27B01 (1-3), I27B01 (3-5), I27B02 (2-4), I27B02 (4-6), I27B03 (3-5), I27B03 (5-7), I27B04 (1-3), I27B04 (3-5), I27B05 (1-3) and I27B05 (3-5).

- Semivolatile Organic Compounds

  - Benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I27B04 (1-3), I27B04 (3-5), I27B05 (1-3) and I27B05 (3-5). In addition, dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I27B04 (3-5) and I27B05 (3-5).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion

for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- RCRA Metals

  - Mercury was detected at concentrations exceeding Eastern USA background levels in soil samples I27B01 (1-3), I27B01 (3-5) and I27B04 (1-3). In addition, chromium was detected at concentrations exceeding Eastern USA background levels in soil samples I27B04 (1-3), I27B05 (1-3) and I27B05 (3-5). Also, cadmium was detected at concentrations exceeding Eastern USA background levels in soil samples I27B05 (1-3) and I27B05 (3-5).

I28 – GOM Storage Area/Former Shuttle Wing Hangar

During visual inspection, the floor drains located in the utility trenches of the GOM Storage Area/Former Shuttle Wing Hangar were observed to have earthen bottoms. As a result, NGC decided not to conduct soil sampling as originally planned. These areas are required to be closed pursuant to the Underground Injection Control (UIC) regulations.

I29 - GSSC Storage Area

During visual inspection, the floor drains located in the utility trenches of the GSSC Storage Area were observed to have earthen bottoms. As a result, NGC decided not to conduct soil sampling as originally planned. These areas are required to be closed pursuant to the Underground Injection Control (UIC) regulations.

I30- Liquid Chiller Room

Four soil samples were collected at soil boring locations I30B01 and I30B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2, C-3 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I30B01 (0-2), I30B01 (2-4), I30B02 (0-2) and I30B02 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I30B01 (0-2), I30B01 (2-4), I30B02 (0-2) and I30B02 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples I30B01 (0-2), I30B01 (2-4), I30B02 (0-2) and I30B02 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I30B01 (0-2), I30B01 (2-4), I30B02 (0-2) and I30B02 (2-4).

I31 - Wyle Chamber

Two concrete core samples were collected at concrete coring locations I31B02 and I31B03 and eight soil samples were collected at soil boring locations I31B01, I31B02, I31B03 and I31B04 during the June through August 1998 Initial Phase II Site Assessment field investigation. Concrete core and soil samples were analyzed as described on Table 2-3. The analytical results are presented on Table C-1, C-2, C-4 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I31B01 (5-7), I31B01 (7-9), I31B04 (2-4) and I31B04 (4-6).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I31B01 (5-7), I31B01 (7-9), I31B04 (2-4) and I31B04 (4-6).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I31B01 (5-7), I31B01 (7-9), I31B02 (2-4), I31B02 (4-6), I31B03 (2-4), I31B03 (4-6), I31B04 (2-4) and I31B04 (4-6). In addition, PCBs were not detected in the concrete core samples I31B02 (CORE), I31B03 (CORE).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I31B01 (5-7), I31B01 (7-9), I31B04 (2-4) and I31B04 (4-6).

I32 - High Bay 1

During visual inspection, the floor drains located in the utility trenches of High Bay 1 were observed to have earthen bottoms. As a result, NGC decided not to conduct soil sampling as originally planned. These areas are required to be closed pursuant to the Underground Injection Control (UIC) regulations.

I33 - Paint Mixing Booth

Two soil samples were collected at soil boring location I33B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I33B01 (1.5-3.5) and I33B01 (3.5-5.5).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I33B01 (1.5-3.5) and I33B01 (3.5-5.5).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I33B01 (1.5-3.5) and I33B01 (3.5-5.5).

I34 - Paint Tunnel

Two soil samples were collected at soil boring location I34B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I34B01 (2-4) and I34B01 (4-6).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I34B01 (2-4) and I34B01 (4-6).

- RCRA Metals

  - Arsenic was detected at a concentration exceeding Eastern USA background levels in soil sample I34B01 (2-4).

I35 - Optics Laboratory

Two soil samples were collected at soil boring location I35B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as

described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I35B01 (4-6) and I35B01 (6-8).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I35B01 (6-8).
  - As indicated above, although there was one SVOC detected at a concentrations that exceeded the NYSDEC TAGM criteria for an *individual* compound, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- RCRA Metals
  - Mercury was detected at a concentration exceeding Eastern USA background levels in soil sample I35B01 (6-8).

I36 - Paint Spray Area

Four soil samples were collected at soil boring locations I36B01 and I36B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I36B01 (2.5-4.5), I36B01 (4.5-6.5), I36B02 (2-4) and I36B02 (4-6).

- Semivolatile Organic Compounds

  - Phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample I36B02 (2-4).

  - As indicated above, although there was one SVOC detected at a concentrations that exceeded the NYSDEC TAGM criteria for an *individual* compound, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- RCRA Metals

  - Mercury was detected at a concentration exceeding Eastern USA background levels in soil sample I36B02 (2-4).

I37 - Paint and Chemical Storage Room

One soil sample was collected at soil boring location I37B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. The soil sample was analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I37B01 (3-5).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I37B01 (3-5).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil sample I37B01 (3-5).

I38 - Well House No. 5

Two soil samples were collected at soil boring location I38B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I38B01 (1-3) and I38B01 (3-5).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I38B01 (1-3) and I38B01 (3-5).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I38B01 (1-3) and I38B01 (3-5).

I39 - Well House No. 6

Two soil samples were collected at soil boring location I39B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-3. The analytical results are presented on Tables C-1, C-2 and C-5 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I39B01 (1-3) and I39B01 (3-5).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I39B01 (1-3) and I39B01 (3-5).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding Eastern USA background levels in soil samples I39B01 (1-3) and I39B01 (3-5).

2.3.2 Exterior Investigation

As previously discussed, the Initial Phase II Site Assessment exterior investigation activities were conducted in June, July, and August 1998 at the following areas at the site:

- Former Dry Well within Drainage Trench along Western Property Boundary (E1)
- Dry Well at West End of Drainage Trench along Northern Property Boundary (E2)
- Dry Well Near Center of Drainage Trench along Northern Property Boundary (E3)
- Dry Well North of Plant 5 Kitchen along Former Taxiway (E4)
- Dry Well Northwest of Plant 5 North Building Entrance Along Former Taxiway (E5)
- Former Dry Well on Former Taxiway (E6)
- Dry Well Near Northeast Corner of Plant 5 Building (E7)
- Dry Well West of Plant 25 and Former Wind Tunnel (E8)
- Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1 (E9)
- Air/Electric Pits in Court Yard "A" (E10)
- Recharge Basins (E11)
- Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5 (E14)
- Former Sanitary Wastewater Disposal System Wet Well West of Plant 5 (E15)
- Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel (E16)

- Cesspool North of Former Pilots Ready Room Building (E17)
- Former Gasoline Pump House (E18)
- Former Sanitary Leaching Pools Converted to Dry Wells (E19)
- Former Cold Flow Test Facility Waste Oil UST (E20)
- Former Cold Flow Test Facility Spillage Collection UST (E21)
- Former Cold Flow Test Facility Sanitary Leaching Pool (E22)
- Former Cold Flow Test Facility Transformer Sub-station Trench Drain (E23)
- Former Oil and Gravel Surfaced Parking Areas West of Structural Test Hangars (E24)
- Former Oil and Gravel Surfaced Parking Areas West of Former Test Platform (E25)
- Former Ash Bunker West of Former Boiler Room (E26)
- Former Blow-off Pit South of Former Boiler Room (E27)
- Former Maintenance Garage (E28)
- Transformer Pad Adjacent to Former Maintenance Garage (E29)
- Condensate Vault North of Kitchen (E30)
- Catch Basin in Court Yard "A" Near CAA (E31)
- Transformer Pad at Well House No. 5 (E32)
- Former Gasoline UST at Well House No. 5 (E33)
- Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House (E34)
- Areas of Stressed Vegetation (E35)
- Concrete Foundation of Former Test Platform (E36)
- Former Drum Storage Area Near Facilities Maintenance Shop (E37)
- Drums Adjacent to Former Boiler Room (E38)
- Tank and Container Storage Area "S-51" (E39)
- Former Material Storage Area Northwest of Plant 5 Building (E40)

- Former Glycol Shed Adjacent to ACE Building (E41)
- Former Drum Storage Area East of ACE Building (E42)
- Existing Fuel Oil AST at Former Pilots Ready Room Building (E43)
- Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building (E44)
- Transformer Pad at Well House No. 6 (E45)
- Transformer Pad Adjacent to Former Boiler Room (E46)
- Former Sump Pit Associated with Former Coal Hopper (E47)

An area by area discussion of the Initial Phase II Site Assessment exterior investigation activity findings is presented below. A brief description of each exterior area of concern is provided in Table 2-6.

E1 - Former Dry Well within Drainage Trench along Western Property Boundary

Two soil samples were collected at soil boring location E01B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E01B01 (8-10) and E01B01 (12-14).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E01B01 (8-10) and E01B01 (12-14).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E01B01 (8-10) and E01B01 (12-14).

TABLE 2-6
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
E-1	Former Dry Well within Drainage Trench along Western Property Boundary	Based upon a review of construction drawings, a dry well was formerly located within the existing drainage trench located along the western property boundary. It is assumed that the dry well was backfilled. The dry well may have received discharges containing constituents of concern.
E-2	Dry Well at West End of Drainage Trench along Northern Property Boundary	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located at the west end of the former drainage trench located along the northern property boundary. The dry well may have received discharges containing constituents of concern.
E-3	Dry Well Near Center of Drainage Trench along Northern Property Boundary	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located near the center of the drainage trench located along the northern property boundary. The dry well may have received discharges containing constituents of concern.
E-4	Dry Well North of Plant 5 Kitchen along Former Taxiway	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located north of the Plant 5 kitchen along the former taxiway. The dry well may have received discharges containing constituents of concern.
E-5	Dry Well Northwest of Plant 5 North Building Entrance along Former Taxiway	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located northwest of the Plant 5 north building entrance along the former taxiway. The dry well may have received discharges containing constituents of concern.
E-6	Former Dry Well on Former Taxiway	Based upon a review of construction drawings, a dry well was formerly located within the former taxiway. The dry well may have received discharges containing constituents of concern.
E-7	Dry Well Near Northeast Corner of Plant 5 Building	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located near the northeast corner of the Plant 5 building. The dry well may have received discharges containing constituents of concern.
E-8	Dry Well West of Plant 25 and Former Wind Tunnel	Based upon a review of construction drawings and the results of the site inspection activities, a dry well is located west of Plant 25 and the former Wind Tunnel facility. The dry well may have received discharges containing constituents of concern.
E-9	Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1	Based upon a review of construction drawings, several air/electric pits were located west of the Shuttle Wing Hangar and High Bay 1. These pits appear to have earthen bottoms. Based on the site inspections, metal and dirt/debris were observed in the pits. These pits may have received discharges containing constituents of concern.
E-10	Air/Electric Pits in Courtyard "A"	Based on a review of construction drawings, air/electric pits were located in the courtyard. These pits appear to have earthen bottoms. Based upon the site inspections, metal and dirt/debris were observed in the pits. These pits may have received discharges containing constituents of concern.
E-11	Recharge Basins	Based upon a review of construction drawings and the results of the site inspection activities, two recharge basins are located at the south end of the Plant 5 property. The recharge basins may have received discharges containing constituents of concern
E-12	Former Sanitary Leaching Pools West of Plant 5	Based upon a review of construction drawings and the results of the site inspection activities, approximately 60 sanitary leaching pools were identified and are located west of Plant 5. It is assumed that the pools were backfilled. The sanitary leaching pools may have received discharges containing constituents of concern.
E-13	Unverified Former Sanitary Leaching Pools West of Plant 5	Based upon a review of construction drawings and the results of the site inspection activities, it is assumed that approximately 50 sanitary leaching pools are located west of Plant 5. These pools were not visible during the site inspections. It is assumed that the pools were backfilled. The sanitary leaching pools may have received discharges containing constituents of concern.
E-14	Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5	Based upon a review of construction drawings, sanitary wastewater disposal system settling tanks were formerly located west of Plant 5 adjacent to the existing sewage pump station. The settling tanks received discharges containing constituents of concern.

Notes:

*: Refer to Figure 2-2 for AOC locations.

TABLE 2-6 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
E-15	Former Sanitary Wastewater Disposal System Wet Well West of Plant 5	Based upon a review of construction drawings and the results of the site inspection activities, a former sanitary wastewater disposal system wet well is located west of Plant 5. The wet well received discharges containing constituents of concern from the Plant 5 building.
E-16	Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel	Based upon a review of construction drawings, a sanitary leaching pool was formerly located west of Plant 25 and the Former Wind Tunnel Facility. It is assumed that the leaching pool was backfilled. The leaching pool may have received discharges containing constituents of concern.
E-17	Cesspool North of Former Pilots Ready Room Building	Based upon a review of construction drawings and the results of the site inspection activities, a cesspool is located north of the former Pilots Ready Room Building. The cesspool may have received discharges containing constituents of concern from the former pilots ready room.
E-18	Former Gasoline Pump House	Based upon a review of construction drawings, a gasoline pump house was formerly located southeast of the existing sewage pump station. Constituents of concern may have impacted the soil surrounding this area and it is not known whether underground gasoline storage tank(s) were once utilized during past operations.
E-19	Former Sanitary Leaching Pools Converted to Dry Wells	Based upon a review of construction drawings, two former sanitary leaching pools located along the western property boundary were converted to dry wells for stormwater. It is assumed that both leaching pools/dry wells were backfilled. The leaching pool may have received discharges containing constituents of concern.
E-20	Former Cold Flow Test Facility Waste Oil UST	Based upon a review of construction drawings, an abandoned Waste Oil UST is possibly located near the southwest corner of the existing 8,000/8,000 Building. Constituents of concern may have impacted underlying soil in this area.
E-21	Former Cold Flow Test Facility Spillage Collection UST	Based upon a review of construction drawings, an abandoned "Spillage Collection UST" is possibly located near the southwest corner of the existing 8,000/8,000 Building. Constituents of concern may have impacted underlying soil in this area.
E-22	Former Cold Flow Test Facility Sanitary Leaching Pool	Based upon a review of construction drawings, a former sanitary leaching pool is possibly located near the southwest corner of the existing 8,000/8,000 Building. It is assumed that the leaching pool was backfilled. The leaching pool may have received discharges containing constituents of concern.
E-23	Former Cold Flow Test Facility Transformer Sub Station Trench Drain	Based upon a review of construction drawings, a Transformer Sub Station with trench drain with earthen bottom was once located near the southwest corner of the existing 8,000/8,000 Building. It is assumed that the trench drain was backfilled. The trench may have received discharges containing constituents of concern.
E-24	Former Oil and Gravel Surfaced Parking Area West of Structural Test Hangars	Based upon a review of construction drawings, a former oil and gravel surfaced parking area was located west of the Structural Test Hangars. Constituents of concern including oil, may have impacted the underlying soil.
E-25	Former Oil and Gravel Surfaced Parking Area West of Former Test Platform	Based upon a review of construction drawings, a former oil and gravel surfaced parking area was located west of the former test platform. Constituents of concern including oil, may have impacted the underlying soil.
E-26	Former Ash Bunker West of Former Boiler Room	Based upon a review of construction drawings, a former Ash Bunker was located west of the Former Boiler Room. It is assumed that the Ash Bunker was backfilled. The Ash Bunker received ash from the former Boiler Room containing constituents of concern.
E-27	Former Blow-Off Pit South of Former Boiler Room	Based upon a review of construction drawings, a former Blow-Off Pit was located south of the former Boiler Room. It is assumed that the Blow-Off Pit was backfilled. The Blow-Off Pit may have received discharges containing constituents of concern from the former boiler room.
E-28	Former Maintenance Garage	According to construction drawings, the former maintenance garage was initially a plumbing and tin shop. Based upon interviews with NGC representatives, the garage was utilized by facility landscapers. It is not known whether underlying soil has been impacted by past operations, including pesticides and herbicides from former landscaping activities.

Notes:

*: Refer to Figure 2-2 for AOC locations.

TABLE 2-6 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
E-29	Transformer Pad Adjacent to Former Maintenance Garage	Based upon a review of construction drawings and interviews with NGC representatives, a transformer pad was located adjacent (west side) to the former maintenance garage. As a result, the area along the west side of the former maintenance garage building may have received discharges containing constituents of concern, including PCBs, from the former transformer pad.
E-30	Condensate Vault North of Kitchen	Based upon a review of construction drawings and the results of the site inspection activities, a condensate vault containing a drain is located north of the Kitchen. The drain discharges to the underlying soil. The drain may have received discharges containing constituents of concern.
E-31	Catch Basin in Courtyard "A" Near CAA	Based upon a review of construction drawings and the results of the site inspection activities, a catch basin is located in Courtyard "A" near the CAA and Facility Paint Storage Building. The catch basin may have received discharges containing constituents of concern.
E-32	Transformer Pad at Well House No. 5	Based upon the results of the site inspection activities, transformers are mounted on a transformer pad located along the western exterior of Well House No. 5. The concrete pad does not have secondary containment and was heavily stained but no cracks were evident. Soil surrounding the pad may have been impacted by PCBs.
E-33	Former Gasoline UST at Well House No. 5	Based upon a review of construction drawings, a former 275-gallon gasoline UST was located along the southern exterior of Well House No. 5. Soil underlying the UST may have been impacted.
E-34	Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House	Based upon the results of the file review activities, an abandoned gasoline UST formerly associated with the fire protection pump house is located along the western exterior of the Facilities Maintenance Shop. Soil underlying the UST may have been impacted.
E-35	Areas of Stressed Vegetation	Based upon the results of the site inspection activities, areas of stressed vegetation and/or lack of vegetation were observed at the south end of Plant 5 and along the western exterior of the Facilities Maintenance Building. Constituents of concern may
E-36	Concrete Foundation of Former Test Platform	Based upon the results of the site inspection activities, heavily stained, cracked and pitted concrete was observed in the concrete foundation of the former test platform. Constituents of concern may have been discharged and impacted the underlying soil.
E-37	Former Drum Storage Area Near Facilities Maintenance Shop	Based upon the results of the file reviews and site inspection activities, it appears that a former drum storage area was located along the west exterior of the Facilities Maintenance Shop. Constituents of concern may have discharged to the surface in this area and impacted the underlying soil.
E-38	Drums Adjacent to Former Boiler Room	Based upon the results of file reviews and site inspection activities, drums were observed near the former Boiler Room. Constituents of concern may have discharged to the surface in this area and impacted underlying soil.
E-39	Tank and Container Storage Area "S-51"	Based upon the results of the file reviews, aerial photographs and site inspection activities, a tank and container storage area, identified as "S-51", was located in Courtyard "A". Constituents of concern may have discharged to the surface in this area.
E-40	Former Material Storage Area Northwest of Plant 5 Building	Based upon a review of aerial photographs, a former material storage area was identified and located northwest of the Plant 5 building. Potential releases of contaminants of concern may have occurred in the storage area.
E-41	Former Glycol Shed Adjacent to ACE Building	Based upon the results of the file reviews and construction drawings, a former glycol shed was located adjacent to the ACE Building. Constituents of concern may have discharged to the surface in this area and impacted underlying soil.

Notes:

*: Refer to Figure 2-2 for AOC locations.

TABLE 2-6 (continued)
NORTHROP GRUMMAN CORPORATION
PLANT 5 - PHASE I SITE ASSESSMENT
AREAS OF ENVIRONMENTAL CONCERN - EXTERIOR AREAS

AOC * NUMBER	POTENTIAL AREA OF ENVIRONMENTAL CONCERN	ENVIRONMENTAL CONCERN(S)
E-42	Former Drum Storage Area East of ACE Building	Based upon a review of aerial photographs, a former drum storage area was located east of the ACE Building in Courtyard "B". Constituents of concern may have discharged to the surface and impacted underlying soil.
E-43	Existing Fuel Oil AST at Former Pilots Ready Room Building	Based on file reviews and site inspections, a fuel oil AST exists along the west exterior wall of the Former Pilots Ready Room Building. The AST is underlain by gravel and there is no containment pad. Constituents of concern may have discharged to the surface and impacted underlying soil.
E-44	Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building	Based on site inspections, an exterior pipe trench is located near the southeast corner of the 8,000/8,000 Building. The pipe trench contained a liquid with a sheen. The discharge point of the trench is unknown. The integrity of the trench floor is unknown.
E-45	Transformer Pad at Well House No. 6	Based upon the results of the site inspection activities, transformers are mounted on a transformer pad located along the west side of Well House No. 6. The concrete pad does not have secondary containment and was stained. Soil surrounding the pad may have been impacted by PCBs.
E-46	Transformer Pad Adjacent to Former Boiler Room	Based upon the results of the site inspection activities, transformers are mounted on a transformer pad located along the southern exterior wall of the Former Boiler Room. The pad is bermed and contains crushed stone. The integrity of the pad is unknown.
E-47	Former Sump Pit Associated with Former Coal Hopper	Based upon a review of construction drawings, a coal hopper and associated sump pit were once located adjacent to a coal silo that was formerly located off the southwest corner of the Former Boiler Room. Constituents of concern may have discharged to the sump pit and impacted underlying soil.

Notes:
*: Refer to Figure 2-2 for AOC locations.

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E01B01 (8-10) and E01B01 (12-14).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E01B01 (8-10) and E01B01 (12-14).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Dry Well within Drainage Trench along Western Property Boundary. The location of boring E01B01 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E2 - Dry Well at West End of Drainage Trench along Northern Property Boundary

Two soil samples were collected at soil boring location E02B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E02B01 (10-12) and E02B01 (16-18).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E02B01 (10-12).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E02B01 (10-12) and E02B01 (16-18).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E02B01 (10-12) and E02B01 (16-18).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E02B01 (10-12) and E02B01 (16-18).

E3 - Dry Well Near Center of Drainage Trench along Northern Property Boundary

Two soil samples were collected at soil boring location E03B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E03B01 (11-13) and E03B01 (19-21).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E03B01 (11-13).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E03B01 (11-13) and E03B01 (19-21).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E03B01 (11-13) and E03B01 (19-21).

- RCRA Metals

  - Mercury was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E03B01 (19-21).

E4 - Dry Well North of Plant 5 Kitchen along Former Taxiway

Two soil samples were collected at soil boring location E04B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E04B01 (15-17) and E04B01 (21-23).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E04B01 (15-17).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample E04B01 (15-17).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E04B01 (15-17) and E04B01 (21-23).

- RCRA Metals

  - Mercury was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E04B01 (15-17).

E5 - Dry Well Northwest of Plant 5 North Building Entrance Along Former Taxiway

Two soil samples were collected at soil boring location E05B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E05B01 (18-20) and E05B01 (22-24).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E05B01 (18-20).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E05B01 (18-20) and E05B01 (22-24).

- RCRA Metals

  - Mercury was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E05B01 (18-20).

E6 - Former Dry Well on Former Taxiway

Two soil samples were collected at soil boring location E06B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E06B01 (16-18) and E06B01 (20-22).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E06B01 (16-18) and E06B01 (20-22).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E06B01 (16-18) and E06B01 (20-22).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E06B01 (16-18) and E06B01 (20-22).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Dry Well on Former Taxiway. The location of boring E06B01 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E7 - Dry Well Near Northeast Corner of Plant 5 Building

Two soil samples were collected at soil boring location E07B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E07B01 (11-13) and E07B01 (15-17).
- Semivolatile Organic Compounds
  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E07B01 (11-13).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample E07B01 (11-13).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E07B01 (11-13) and E07B01 (15-17).
- RCRA Metals
  - Arsenic was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E07B01 (11-13).

E8 - Dry Well West of Plant 25 and Former Wind Tunnel

Two soil samples were collected at soil boring location E08B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as

described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E08B01 (14-16) and E08B01 (20-22).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E08B01 (14-16) and E08B01 (20-22).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E08B01 (14-16) and E08B01 (20-22).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E08B01 (14-16) and E08B01 (20-22).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E08B01 (14-16) and E08B01 (20-22).

E9 - Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1

Ten soil samples were collected at soil boring locations E09B01, E09B02, E09B03, E09B04 and E09B05 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B01 (2-4), E09B01 (4-6), E09B02 (3-5), E09B02 (5-

7), E09B03 (2-4), E09B03 (4-6), E09B04 (2-4), E09B04 (4-6), E09B05 (2-4) and E09B05 (4-6).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B02 (3-5), E09B03 (2-4), E09B04 (2-4) and E09B05 (2-4). In addition, phenanthrene, fluoranthene and pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E09B05 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was also exceeded in soil sample E09B05 (2-4) and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil samples E09B02 (3-5), E09B03 (2-4), E09B04 (2-4) and E09B05 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B01 (2-4), E09B01 (4-6), E09B02 (3-5), E09B02 (5-7), E09B03 (2-4), E09B03 (4-6), E09B04 (2-4), E09B04 (4-6), E09B05 (2-4) and E09B05 (4-6).

- RCRA Metals

  - Arsenic, cadmium, chromium, lead, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B02 (3-5) and E09B04 (2-4). In addition, mercury was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E09B03 (2-4) and barium was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E09B04 (2-4).

  - Arsenic, chromium, lead, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E09B05 (2-4).

E10 - Air/Electric Pits in Court Yard "A"

Four soil samples were collected at soil boring locations E10B01 and E10B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were

analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E10B01 (6-8), E10B01 (8-10), E10B02 (2-4) and E10B02 (4-6).
- Semivolatile Organic Compounds
  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E10B02 (2-4).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample E10B02 (2-4).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E10B01 (6-8), E10B01 (8-10), E10B02 (2-4) and E10B02 (4-6).
- RCRA Metals
  - Cadmium and chromium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E10B02 (2-4).

E11 - Recharge Basins

Eight soil samples were collected at soil boring locations E11BN01, E11BN02, E11BS01 and E11BS02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E11BN01 (0-2), E11BN01 (2-4), E11BN02 (0-2), E11BN02 (2-4), E11BS01 (0-2), E11BS01 (2-4), E11BS02 (0-2) and E11BS02 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E11BN02 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E11BN01 (0-2), E11BN01 (2-4), E11BN02 (0-2), E11BN02 (2-4), E11BS01 (0-2), E11BS01 (2-4), E11BS02 (0-2) and E11BS02 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E11BN01 (0-2), E11BN01 (2-4), E11BN02 (0-2), E11BN02 (2-4), E11BS01 (0-2), E11BS01 (2-4), E11BS02 (0-2) and E11BS02 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E11BN01 (0-2), E11BN01 (2-4), E11BN02 (0-2), E11BN02 (2-4), E11BS01 (0-2), E11BS01 (2-4), E11BS02 (0-2) and E11BS02 (2-4).

E14 - Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5

Four soil samples were collected at soil boring locations E14B01 and E14B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E14B01 (13-15), E14B01 (15-17), E14B02 (8-10) and E14B02 (10-12).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E14B01 (13-15), E14B01 (15-17), E14B02 (8-10) and E14B02 (10-12).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E14B01 (13-15), E14B01 (15-17), E14B02 (8-10) and E14B02 (10-12).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E14B01 (13-15), E14B01 (15-17), E14B02 (8-10) and E14B02 (10-12).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E14B01 (13-15), E14B01 (15-17), E14B02 (8-10) and E14B02 (10-12).

E15 - Former Sanitary Wastewater Disposal System Wet Well West of Plant 5

Two soil samples were collected at soil boring location E15B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E15B01 (20-22) and E15B01 (22-24).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E15B01 (20-22) and E15B01 (22-24).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E15B01 (20-22) and E15B01 (22-24).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E15B01 (20-22) and E15B01 (22-24).

- RCRA Metals

  - Arsenic was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E15B01 (22-24).

E16 - Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel

Two soil samples were collected at soil boring location E16B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E16B01 (12-14) and E16B01 (16-18).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E16B01 (12-14) and E16B01 (16-18).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E16B01 (12-14) and E16B01 (16-18).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E16B01 (12-14) and E16B01 (16-18).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E16B01 (12-14) and E16B01 (16-18).

E17 - Cesspool North of Former Pilots Ready Room Building

Two soil samples were collected at soil boring location E17B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E17B01 (10-12) and E17B01 (14-16).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E17B01 (10-12) and E17B01 (14-16).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E17B01 (10-12) and E17B01 (14-16).

E18 - Former Gasoline Pump House

Four soil samples were collected at soil boring locations E18B01 and E18B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-7 and C-13 in Appendix C and are summarized as follows:

- STARS Table 1 VOCs (total)
  - STARS total VOCs were not detected at concentrations exceeding STARS Table 1 Human Health guidance values in soil samples E18B01 (1-3), E18B01 (6-8), E18B02 (6-8) and E18B02 (8-10).
- RCRA Metals
  - Lead was not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E18B01 (1-3), E18B01 (6-8), E18B02 (6-8) and E18B02 (8-10).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Gasoline Pump House. The locations of borings E18B01 and E18B02 were selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E19 - Former Sanitary Leaching Pools Converted to Dry Wells

Four soil samples were collected at soil boring locations E19B01 and E19B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E19B01 (12-14), E19B01 (16-18), E19B02 (10-12) and E19B02 (14-16).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E19B01 (12-14).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E19B01 (12-14), E19B01 (16-18), E19B02 (10-12) and E19B02 (14-16).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E19B01 (12-14), E19B01 (16-18), E19B02 (10-12) and E19B02 (14-16).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E19B01 (12-14), E19B01 (16-18) and E19B02 (14-16). Cadmium, chromium, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E19B02 (10-12).

E20 - Former Cold Flow Test Facility Waste Oil UST

Four soil samples were collected at soil boring locations E20B01 and E20B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized below.

It should be noted that the Former Cold Flow Test Facility Spillage Collection UST was initially identified as E20, and samples from E20B01 were analyzed for RCRA metals, VOCs,

SVOCs and STARS SVOCs by TCLP. However, the Spillage Collection UST was encountered at boring E21B01 (which targeted the Former Cold Flow Test Facility Waste Oil UST). The Former Cold Flow Test Facility Spillage Collection UST was redesignated as AOC E21 and the Former Cold Flow Test Facility Waste Oil UST was redesignated as AOC E20. Therefore, E20B02 was installed to investigate the Waste Oil UST and samples were analyzed for VOCs, SVOCs, STARS SVOCs by TCLP and PCBs.

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E20B01 (10-12), E20B01 (14-16), E20B02 (8-10) and E20B02 (12-14).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E20B01 (10-12), E20B01 (14-16), E20B02 (8-10) and E20B02 (12-14).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E20B01 (10-12), E20B01 (14-16), E20B02 (8-10) and E20B02 (12-14).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E20B02 (8-10) and E20B02 (12-14).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E20B01 (10-12) and E20B01 (14-16).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Cold Flow Test Facility Spillage Collection UST. The locations of borings E20B01 and E20B02 were selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E21 - Former Cold Flow Test Facility Spillage Collection UST

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Cold Flow Test Facility Spillage Collection UST. The location of boring E21B01 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

Accordingly, the Former Cold Flow Test Facility Spillage Collection UST was discovered during the advancement of soil boring E21B01. As a result, no soil samples were collected at this soil boring location during the June through August 1998 Initial Phase II Site Assessment field investigation. In addition, a separate report prepared by D&B, "Underground Storage Tank Closure Program-Plant 5 Spillage Collection Tank," December 10, 1998, addresses the program that was conducted for the removal of the Former Cold Flow Test Facility Spillage Collection UST.

E22 - Former Cold Flow Test Facility Sanitary Leaching Pool

Four soil samples were collected at soil boring locations E22B01 and E22B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E22B01 (8-10), E22B01 (12-14), E22B02 (8-10) and E22B02 (12-14).
- Semivolatile Organic Compounds
  - Benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E22B01 (8-10).

- As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg and the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E22B01 (8-10), E22B01 (12-14), E22B02 (8-10) and E22B02 (12-14).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E22B01 (8-10), E22B01 (12-14), E22B02 (8-10) and E22B02 (12-14).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E22B01 (8-10), E22B01 (12-14), E22B02 (8-10) and E22B02 (12-14).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Former Cold Flow Test Facility Sanitary Leaching Pool. The location of boring E22B01 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E23 - Former Cold Flow Test Facility Transformer Sub-station Trench Drain

Two soil samples were collected at soil boring location E23B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-12 in Appendix C and are summarized as follows:

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E23B01 (0-2) and E23B01 (2-4).

E24 - Former Oil and Gravel Surfaced Parking Areas West of Structural Test Hangars

Twelve soil samples were collected at soil boring locations E24B01, E24B02, E24B03, E24B04, E24B05 and E24B06 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-12 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E24B01 (0-2), E24B01 (2-4), E24B02 (0-2), E24B02 (2-4), E24B03 (0-2), E24B03 (2-4), E24B04 (0-2), E24B04 (2-4), E24B05 (0-2), E24B05 (2-4), E24B06 (0-2) and E24B06 (2-4).
- Semivolatile Organic Compounds
  - Dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E24B03 (2-4).
  - As indicated above, although there was one SVOC detected at a concentration that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E24B01 (0-2), E24B01 (2-4), E24B02 (0-2), E24B02 (2-4), E24B03 (0-2), E24B03 (2-4), E24B04 (0-2), E24B04 (2-4), E24B05 (0-2), E24B05 (2-4), E24B06 (0-2) and E24B06 (2-4).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E24B01 (0-2), E24B01 (2-4), E24B02 (0-2), E24B02 (2-4), E24B03 (0-2), E24B03 (2-4), E24B04 (0-2), E24B04 (2-4), E24B05 (0-2), E24B05 (2-4), E24B06 (0-2) and E24B06 (2-4).

E25 - Former Oil and Gravel Surfaced Parking Areas West of Former Test Platform

Four soil samples were collected at soil boring locations E25B01 and E25B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9 and C-12 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E25B01 (0-2), E25B01 (2-4), E25B02 (0-2) and E25B02 (2-4).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E25B01 (0-2), E25B01 (2-4), E25B02 (0-2) and E25B02 (2-4).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E25B01 (0-2), E25B01 (2-4), E25B02 (0-2) and E25B02 (2-4).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E25B01 (0-2), E25B01 (2-4), E25B02 (0-2) and E25B02 (2-4).

E26 - Former Ash Bunker West of Former Boiler Room

Two soil samples were collected at soil boring location E26B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-8 and C-13 in Appendix C and are summarized as follows:

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E26B01 (2-4) and E26B01 (4-6).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E26B01 (2-4) and E26B01 (4-6).

E27 - Former Blow-off Pit South of Former Boiler Room

Two soil samples were collected at soil boring location E27B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E27B01 (13-15) and E27B01 (17-19).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E27B01 (13-15) and E27B01 (17-19).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E27B01 (13-15) and E27B01 (17-19).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E27B01 (13-15) and E27B01 (17-19).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E27B01 (13-15) and E27B01 (17-19).

E28 - Former Maintenance Garage

Four soil samples were collected at soil boring locations E28B01 and E28B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-10, C-11 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).
- Pesticides
  - Pesticides were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).
- Herbicides
  - Herbicides were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E28B01 (0-2), E28B01 (2-4), E28B02 (0-2) and E28B02 (2-4).

E29 - Transformer Pad Adjacent to Former Maintenance Garage

Four soil samples were collected at soil boring locations E29B01 and E29B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-12 in Appendix C and are summarized as follows:

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E29B01 (0-2), E29B01 (2-4), E29B02 (0-2) and E29B02 (2-4).

E30 - Condensate Vault North of Kitchen

Two soil samples were collected at soil boring location E30B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E30B01 (8-10) and E30B01 (10-12).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E30B01 (8-10) and E30B01 (10-12).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E30B01 (8-10) and E30B01 (10-12).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E30B01 (8-10) and E30B01 (10-12).

E31 - Catch Basin in Court Yard "A" Near CAA

Two soil samples were collected at soil boring location E31B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E31B01 (8-10) and E31B01 (10-12).

- Semivolatile Organic Compounds

  - Benzo(a)pyrene and dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E31B01 (8-10).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E31B01 (8-10) and E31B01 (10-12).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E31B01 (8-10) and E31B01 (10-12).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E31B01 (8-10) and E31B01 (10-12).

E32 - Transformer Pad at Well House No. 5

Two soil samples were collected at soil boring location E32B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-12 in Appendix C and are summarized as follows:

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E32B01 (0-2) and E32B01 (2-4).

E33 - Former Gasoline UST at Well House No. 5

Two soil samples were collected at soil boring location E33B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-7 and C-13 in Appendix C and are summarized as follows:

- STARS Table 1 VOCs (total)

  - STARS total VOCs were not detected at concentrations exceeding STARS Table 1 Human Health guidance values in soil samples E33B01 (5-7) and E33B01 (9-11).

- RCRA Metals

  - Lead was not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E33B01 (5-7) and E33B01 (9-11).

E34 - Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House

Two soil samples were collected at soil boring location E34B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-7 and C-13 in Appendix C and are summarized as follows:

- STARS Table 1 VOCs (total)
  - STARS total VOCs were not detected at concentrations exceeding STARS Table 1 Human Health guidance values in soil samples E34B01 (6-8) and E34B01 (10-12).
- RCRA Metals
  - Lead was not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E34B01 (6-8) and E34B01 (10-12).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House. The location of boring E34B01 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E35 - Areas of Stressed Vegetation

Four soil samples were collected at soil boring locations E35B01 and E35B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-10, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2), E35B01 (2-4), E35B02 (0-2) and E35B02 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2) and E35B01 (2-4). In addition, chrysene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E35B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E35B01 (0-2), E35B01 (2-4), E35B02 (0-2) and E35B02 (2-4).

- Pesticides

  - Pesticides were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2), E35B01 (2-4), E35B02 (0-2) and E35B02 (2-4).

- Herbicides

  - Herbicides were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2), E35B01 (2-4), E35B02 (0-2) and E35B02 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2), E35B01 (2-4), E35B02 (0-2) and E35B02 (2-4).

- RCRA Metals

  - Arsenic was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E35B01 (0-2).

E36 - Concrete Foundation of Former Test Platform

Four soil samples were collected at soil boring locations E36B01 and E36B02 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E36B01 (0-2), E36B01 (2-4), E36B02 (5-7) and E36B02 (7-9).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E36B01 (0-2), E36B01 (2-4), E36B02 (5-7) and E36B02 (7-9).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E36B01 (0-2), E36B01 (2-4), E36B02 (5-7) and E36B02 (7-9).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E36B01 (0-2), E36B01 (2-4), E36B02 (5-7) and E36B02 (7-9).
- RCRA Metals
  - Arsenic was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E36B01 (0-2).

E37 - Former Drum Storage Area Near Facilities Maintenance Shop

Two soil samples were collected at soil boring location E37B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as

described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E37B01 (1-3) and E37B01 (3-5).
- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E37B01 (1-3) and E37B01 (3-5).
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E37B01 (1-3) and E37B01 (3-5).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E37B01 (1-3) and E37B01 (3-5).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E37B01 (1-3) and E37B01 (3-5).

E38 - Drums Adjacent to Former Boiler Room

Two soil samples were collected at soil boring location E38B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E38B01 (0-2) and E38B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E38B01 (0-2) and E38B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E38B01 (0-2) and E38B01 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E38B01 (0-2) and E38B01 (2-4).

- RCRA Metals

  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E38B01 (0-2) and E38B01 (2-4).

E39 - Tank and Container Storage Area "S-51"

Ten soil samples were collected at soil boring locations E39B01, E39B02, E39B03, E39B04 and E39B05 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E39B01 (0-2), E39B01 (2-4), E39B02 (0-2), E39B02 (2-4), E39B03 (0-2), E39B03 (2-4), E39B04 (0-2), E39B04 (2-4), E39B05 (0-2) and E39B05 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E39B01 (0-2).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E39B01 (0-2), E39B01 (2-4), E39B02 (0-2), E39B02 (2-4), E39B03 (0-2), E39B03 (2-4), E39B04 (0-2), E39B04 (2-4), E39B05 (0-2) and E39B05 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E39B01 (0-2), E39B01 (2-4), E39B02 (0-2), E39B02 (2-4), E39B03 (0-2), E39B03 (2-4), E39B04 (0-2), E39B04 (2-4), E39B05 (0-2) and E39B05 (2-4).

- RCRA Metals

  - Mercury was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E39B02 (0-2).

E40 - Former Material Storage Area Northwest of Plant 5 Building

Two soil samples were collected at soil boring location E40B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E40B01 (0-2) and E40B01 (2-4).

- Semivolatile Organic Compounds

  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E40B01 (0-2) and E40B01 (2-4).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E40B01 (0-2) and E40B01 (2-4).

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E40B01 (0-2) and E40B01 (2-4).

- RCRA Metals

  - Arsenic was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E40B01 (2-4).

E41 - Former Glycol Shed Adjacent to ACE Building

Two soil samples were collected at soil boring location E41B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-14 in Appendix C and are summarized as follows:

- Select Glycols

  - Select glycols were not detected above the method detection limits in soil samples E41B01 (0-2) and E41B01 (2-4).

E42 - Former Drum Storage Area East of ACE Building

Two soil samples were collected at soil boring location E42B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as

described on Table 2-4. The analytical results are presented on Tables C-6, C-8, C-9, C-12 and C-13 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E42B01 (0-2) and E42B01 (2-4).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E42B01 (0-2).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.
- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E42B01 (0-2) and E42B01 (2-4).
- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E42B01 (0-2) and E42B01 (2-4).
- RCRA Metals
  - RCRA Metals were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E42B01 (0-2) and E42B01 (2-4).

E43 - Existing Fuel Oil AST at Former Pilots Ready Room Building

Two soil samples were collected at soil boring location E43B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8 and C-9 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E43B01 (0-2) and E43B01 (2-4).

- Semivolatile Organic Compounds

  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E43B01 (0-2) and E43B01 (2-4).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E43B01 (0-2) and E43B01 (2-4).

E44 - Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building

Two soil samples were collected at soil boring location E44B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-6, C-8 and C-9 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - VOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E44B01 (4-6) and E44B01 (10-12).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E44B01 (4-6).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion

for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample E44B01 (4-6).

- STARS SVOCs by TCLP
  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in soil samples E44B01 (4-6) and E44B01 (10-12).

E45 - Transformer Pad at Well House No. 6

Two soil samples were collected at soil boring location E45B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-12 in Appendix C and are summarized as follows:

- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E45B01 (0-2) and E45B01 (2-4).

E46 - Transformer Pad Adjacent to Former Boiler Room

Two soil samples were collected at soil boring location E46B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-12 in Appendix C and are summarized as follows:

- PCBs
  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E46B01 (0-2) and E46B01 (2-4).

E47 - Former Sump Pit Associated with Former Coal Hopper

Two soil samples were collected at soil boring location E47B01 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Table C-8 in Appendix C and are summarized as follows:

- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E47B01 (4-6) and E47B01 (6-8).

2.3.3 Leaching Pools

As previously discussed, the Initial Phase II Site Assessment leaching pool investigation activities were conducted in June, July, and August 1998 at the following areas at the site:

- Former Sanitary Leaching Pools West of Plant 5 (E12)
- Unverified Former Sanitary Leaching Pools West of Plant 5 (E13)

An area by area discussion of the Initial Phase II Site Assessment leaching pool investigation activity findings is presented below.

E12 - Former Sanitary Leaching Pools West of Plant 5

A total of 60 soil samples were collected at soil boring locations E12B01 through E12B30 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-15 through C-19 in Appendix C and are summarized as follows:

- Volatile Organic Compounds

  - Acetone was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E12B18 (10-12).

- Semivolatile Organic Compounds

  - Benzo(a)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B04 (11-13), E12B07 (10-12), E12B09 (11-13), E12B10 (10-12), E12B10 (12-14), E12B12 (10-12), E12B15 (12-14), E12B16 (12-14), E12B18 (10-12), E12B20 (8-10), E12B21 (10-12), E12B28 (12-14), E12B29 (13-15) and E12B30 (13-15).

  - Chrysene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B09 (11-13), E12B10 (10-12), E12B10 (12-14), E12B15 (12-14), E12B16 (12-14), E12B18 (10-12) and E12B30 (13-15).

  - Benzo(b)fluoranthene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B10 (12-14), E12B15 (12-14), E12B16 (12-14), E12B18 (10-12) and E12B30 (13-15).

  - Benzo(k)fluoranthene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B10 (12-14), E12B15 (12-14), E12B16 (12-14), E12B18 (10-12) and E12B30 (13-15).

  - Benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B01 (10-12), E12B02 (10-12), E12B04 (11-13), E12B07 (10-12), E12B09 (11-13), E12B10 (10-12), E12B10 (12-14), E12B12 (10-12), E12B15 (12-14), E12B16 (12-14), E12B17 (10-12), E12B18 (10-12), E12B20 (8-10), E12B21 (10-12), E12B28 (12-14), E12B29 (13-15) and E12B30 (13-15).

  - Dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B04 (11-13), E12B10 (12-14), E12B15 (12-14), E12B16 (12-14), E12B20 (8-10), E12B28 (12-14) and E12B30 (13-15).

  - Indeno(1,2,3-cd)pyrene, fluoranthene and pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E12B30 (13-15).

  - Bis(2-ethylhexyl)phthalate was detected at concentrations exceeding NYSDEC TAGM criteria in soil sample E12B05 (10-12).

  - Phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E12B26 (10-12).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion

for *total* SVOCs of 500,000 ug/kg was exceeded in soil sample E12B30 (13-15). In addition, the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil samples E12B10 (12-14), E12B15 (12-14), E12B18 (10-12) and E12B30 (13-15).

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in the soil samples collected at soil boring locations E12B01 through E12B30 during the June through August 1998 Initial Phase II Site Assessment field investigation.

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in the soil samples collected at soil boring locations E12B01 through E12B30 during the June through August 1998 Initial Phase II Site Assessment field investigation.

- RCRA Metals

  - Arsenic was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B05 (10-12), E12B10 (10-12) and E12B12 (10-12).

  - Cadmium was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B07 (10-12), E12B09 (11-13), E12B10 (10-12), E12B12 (10-12), E12B18 (10-12) and E12B29 (13-15).

  - Chromium was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B07 (10-12), E12B09 (11-13), E12B10 (10-12), E12B12 (10-12), E12B18 (10-12) and E12B29 (13-15).

  - Lead was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E12B12 (10-12).

  - Mercury was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E12B01 (10-12), E12B02 (10-12), E12B03 (10-12), E12B04 (11-13), E12B04 (14-16), E12B05 (10-12), E12B07 (10-12), E12B10 (10-12), E12B12 (10-12), E12B15 (12-14), E12B18 (10-12), E12B23 (8-10), E12B27 (10-12), E12B29 (13-15) and E12B30 (13-15).

  - Selenium was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E12B12 (10-12), E12B29 (13-15).

E13 - Unverified Former Sanitary Leaching Pools West of Plant 5

A total of 50 soil samples were collected at soil boring locations E13B01 through E13B25 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil samples were analyzed as described on Table 2-4. The analytical results are presented on Tables C-15 through C-19 in Appendix C and are summarized as follows:

- Volatile Organic Compounds
  - Acetone was detected at a concentration exceeding the NYSDEC TAGM criteria in soil samples E13B09 (12-14), E13B12 (12-14) and E13B13 (12-14). In addition, 2-Butanone was detected at a concentration exceeding the NYSDEC TAGM criteria in soil samples E13B09 (12-14) and E13B12 (12-14).
- Semivolatile Organic Compounds
  - Benzo(a)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B07 (11-13) and E13B20 (10-12).
  - Chrysene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B07 (11-13) and E13B20 (10-12).
  - Benzo(b)fluoranthene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E13B07 (11-13).
  - Benzo(k)fluoranthene was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E13B07 (11-13).
  - Benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B03 (10-12), E13B07 (11-13), E13B19 (10-12), E13B20 (10-12), E13B21 (10-12), E13B22 (10-12), E13B23 (11-13) and E13B24 (11-13).
  - Dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B07 (11-13), E13B20 (10-12) and E13B21 (10-12).
  - 2,4,5-Trichlorophenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E13B23 (11-13).
  - 2,4-Dichlorophenol was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B07 (11-13), E13B19 (10-12), E13B23 (11-13) and E13B25 (11-13).

- Phenol was detected at a concentration exceeding the NYSDEC TAGM criteria in soil sample E13B23 (11-13).

- As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were not exceeded.

- STARS SVOCs by TCLP

  - STARS SVOCs by TCLP were not detected at concentrations exceeding STARS Tables 1 and 2 TCLP Extraction guidance values in the soil samples collected at soil boring locations E13B01 through E13B25 during the June through August 1998 Initial Phase II Site Assessment field investigation.

- PCBs

  - PCBs were not detected at concentrations exceeding the NYSDEC TAGM criteria in the soil samples collected at soil boring locations E13B01 through E13B25 during the June through August 1998 Initial Phase II Site Assessment field investigation.

- RCRA Metals

  - Arsenic, cadmium, chromium and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E13B24 (11-13).

  - Mercury was detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E13B03 (10-12), E13B06 (12-14), E13B07 (11-13), E13B09 (12-14), E13B10 (11-13), E13B11 (11-13), E13B12 (12-14), E13B19 (10-12), E13B20 (10-12), E13B23 (11-13) and E13B24 (11-13).

As discussed in Section 2.2.1, a geophysical survey was conducted in this area in order to locate the Unverified Former Sanitary Leaching Pools West of Plant 5. The location of borings E13B01 through E13B25 were selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

2.4 Data Validation

Soil samples were collected from the Northrop Grumman Plant 5 site in support of a Phase II field investigation. The analyses were performed in accordance with USEPA SW846

methodologies and NYSDEC Quality Assurance/Quality Control (QA/QC) requirements by Severn Trent Laboratories (STL), a subcontractor to Dvirka and Bartilucci Consulting Engineers. In accordance with contract requirements, 20 percent of the sample results in the data packages submitted by STL have been reviewed in accordance with NYSDEC QA/QC requirements yielding a "20% validation." The findings of the validation process are summarized below.

Sample analyses were performed within the method specified holding times and all QA/QC measures (i.e., surrogate recoveries, blanks, calibrations, etc.) met method requirements.

Acetone and methylene chloride results, which are flagged with a B on the data tables, have been qualified as nondetect due to laboratory contamination. That is, the method blank associated with the samples also contained that compound and the concentration found in the sample was less than five times the concentration found in the blank.

Several samples required reanalysis due to surrogate recoveries and/or internal standard area counts being outside of QC limits. The samples were reanalyzed and both sets of data reported. The "best" set of data (i.e., most compliant) is contained in the data summary tables.

The concentration of Aroclor-1254 has been qualified as estimated possibly biased high due to matrix interferences.

The semivolatile fraction of E43B01 (0-2) was re-extracted outside of holding time due to poor surrogate and internal standard area recoveries. The re-extract had better surrogate and internal standard recoveries but significant low compound concentrations. Therefore, the results of the initial analysis are deemed to be the "best" set.

One PCB sample, E10B02 (4-6), was analyzed outside of the 12-hour window for the PCB standard, however, since no PCBs were present, reanalysis was not deemed necessary.

The mercury results for samples E12B10 (10-12), E12B22 (10-12) and E12B24 (10-12) have been qualified as estimated possibly biased high due to a high recovery in the final continuing calibration verification (CCV) sample.

Several mercury samples were split and sent to both STL and Mitkem Corporation for confirmation. The results from both laboratories were comparable.

All sample data has been deemed valid and usable for environmental purposes as qualified above.

2.5 Groundwater

As discussed in the Plant 5 Phase I Site Assessment, groundwater quality beneath the Plant 5 site and surrounding industrial areas is a documented area of environmental concern.

The findings of a USGS hydrogeological and groundwater quality study conducted between 1985 and 1987 indicated that a plume of groundwater contamination primarily consisting of several VOCs (TCE, PCE, 1,1,1-TCA, 1,2-DCE, 1,1-DCA and vinyl chloride) was present beneath and extended southward from the Ruco Polymer, Navy (NWIRP/Plant 3), and Grumman (NGC) Bethpage Facility sites. The study indicated that a portion of the plume extended beneath the Plant 5 property and contained 1,1,1-TCA, vinyl chloride and 1,2-DCE.

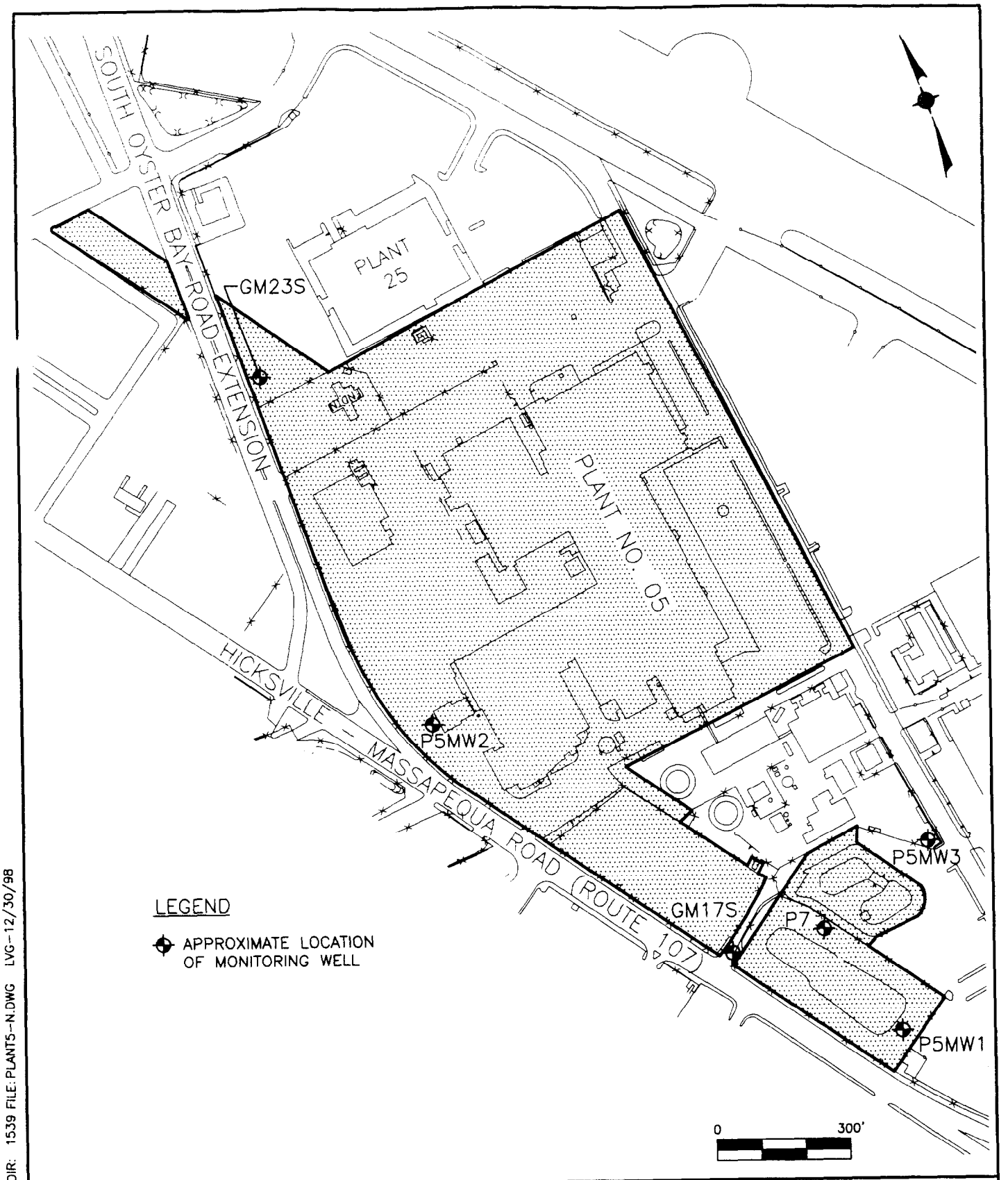
The results of the NGC Bethpage Facility RI indicated that the western plume of groundwater contamination, primarily consisting of TCE, is defined by several off-site monitoring wells located in close proximity of the Plant 5 site including GM-12S, GM-12I and NGC production wells GP-1 and GP-2. NGC production well GP-2 is located immediately adjacent to the eastern boundary of the Plant 5 property.

The PRAP for the NWIRP site, issued in 1994, indicated that, for the remediation of shallow groundwater contamination, a portion of the estimated areal extent of "On-site/Near Site

NWIRP-Derived Groundwater Contamination" was located beneath the eastern boundary line of the Plant 5 property.

Also, the results of groundwater samples collected from on-site monitoring wells P5MW-1, P5MW-2, P5MW-3, GM17S and GM23S, in February 1993 as part of a Delisting Petition, indicated that TCE was detected at or above the NYSDOH Drinking Water Standard of 5 ug/l in P5MW-2 (7 ug/l), P5MW-3 (5 ug/l) and GM17S (20 ug/l) and that PCE was detected at the standard of 5 ug/l in GM17S. Groundwater monitoring wells located on-site and immediately adjacent to the site are shown in Figure 2-7. The Delisting Petition indicated that the groundwater samples may have been obtained from the wells at a time when they were within the zone of influence of localized mounding from the two on-site recharge basins, which receive non-contact cooling water and storm water runoff. The Delisting Petition noted that the well closest to the recharge basins (GM17S) exhibited the highest concentration of TCE and that concentrations of TCE detected during the sampling event were not inconsistent with previous laboratory analysis of non-contact cooling water at this location. The Delisting Petition indicated that the cooling water utilized (influent) was pumped from groundwater in the vicinity of the site that previous sampling had shown to contain TCE. As a result, the Delisting Petition noted that the elevated concentrations of TCE were characteristic of localized ambient groundwater conditions and were not attributable to the non-contact cooling operations at the site.

Therefore, based upon the above, there are several off-site sources of groundwater contamination and groundwater quality on-site is a potential area of environmental concern. However, ongoing investigations are expected to further delineate the existing groundwater contamination. In particular, NYSDEC and EPA are involved in the active oversight of the remedial investigations, feasibility studies and the remediation of all operable units, including groundwater plumes associated with adjacent properties. Therefore, further investigation and/or monitoring of groundwater does not appear to be warranted at the time.



DIR: 1539 FILE: PLANT5-N.DWG LVG-12/30/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

MONITORING WELL LOCATION MAP

FIGURE 2-7

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

Section 3

3.0 DELINEATION PHASE II SITE ASSESSMENT

3.1 Scope of Work

The results of the Initial Phase II Site Assessment at Plant 5 were used to identify those AOCs, both inside and outside of the building, where additional delineation sampling was warranted. Delineation sampling was conducted to determine the horizontal and vertical extent of impacted soils. The AOCs that were to be investigated as part of the Delineation Phase II Site Assessment are summarized in Tables 3-1 (interior areas) and 3-2 (exterior areas). The information in these tables includes the AOC designation and the rationale for its investigation, the number of borings and samples proposed for each AOC, and the analytical parameters for each sample. The interior and exterior programs were conducted concurrently.

3.2 Field Program

This section provides a description of the field activities conducted as part of the Delineation Phase II Site Assessment at Plant 5. Work performed during the Delineation Phase II Site Assessment included geophysical surveys and collection and analysis of soil and concrete core samples. Descriptions of the procedures used during these activities are included in Sections 3.2.1 (Geophysical Surveys), 3.2.2 (Soil Sampling), 3.2.3 (Concrete Core Sampling) and 3.2.4 (Decontamination Procedures).

3.2.1 Geophysical Surveys

As previously described, 50 percent of the sanitary leaching pools (AOCs E12 and E13) were investigated during the Initial Phase II Site Assessment. Based on the initial results, it appeared that a number of sanitary pools were impacted by constituents of concern. Therefore, it was determined that the balance of the sanitary leaching pools warranted investigation. Because the remaining unsampled leaching pools were not visible from grade, a geophysical survey was performed to locate these former structures.

TABLE 3-1
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
RECOMMENDED PHASE II DELINEATION SAMPLING PROGRAM - INTERIOR AREAS

AOC No.	Location	Initial Phase II Probe/Boring ID	SOIL PROBES				Delineation Program Soil Probe/Boring ID	Soil Sampling Interval	Recommended Analyses * (Soil)				Laboratory Turnaround	Comments
			No. of Probes	No. of Geoprobe Samples	No. of Corings	No. of Core Samples			1	2	3	4		
I-1	Former Alodine Line Room	--	--	--	3	3	I01C01, I01C02 and I01C03	--	--	--	--	3	2 week	*Collect 2 core samples in bermed tank area and 1 core sample in floor outside of bermed tank area (under wood block floor).*
I-5	Condensate Pit	I05B01	--	--	--	--	--	--	--	--	--	--	--	*Sump in Condensate Pit shall be closed in accordance with USEPA UIC Program.*
I-14	Former Router Room	I14B02	1	1	--	--	I14B02A	0-2' bgs	1 [1]	--	--	--	24 - 48 hr.	--
			4	*12*	--	--	*I14B02N7, I14B02S7, I14B02E7 and I14B02W7*	*0-2', 2'-4' and 4'-6' bgs*	*12*	--	--	--	*2 week*	*Advance borings, collect samples and analyze based on results of 0-2' sample at I14B02A.*
I-18	High Voltage Crew Area	I18B01	1	2	--	--	I18B01A	9'-11' and 11'-13' bgs	--	2	--	--	2 week	*Dry well shall be closed in accordance with USEPA UIC Program.*
I-21	Generator Room	I21B01 and I21B02	--	--	--	--	--	--	--	--	--	--	--	*Tile drain pipes shall be closed in accordance with USEPA UIC Program.*
I-22	Blue Room	I22B01	1	2	--	--	I22B01A	5.5'-7.5' and 7.5'-9.5' bgs	--	--	2	--	2 week	*Air/Electric Pit shall be closed in accordance with USEPA UIC Program.*
			4	12	--	--	I22B01N7, I22B01S7, I22B01E7 and I22B01W7	1.5'-3.5', 3.5'-5.5' and 5.5'-7.5' bgs	--	--	12	--	1 week	
			--	4	--	--		7.5'-9.5' bgs	--	--	*4*	--	*1 week*	*Hold 7.5'-9.5' samples and analyze based on results of the 5.5'-7.5' samples at I22B01N7, I22B01S7, I22B01E7 and I22B01W7.*

***Recommended Target Compounds (and Analyses)**

1 Arsenic (Method 6010)
2 Semivolatile Organic Compounds (Method 8270) incl those listed in STARS Table 2
3 Cadmium (Method 6010)
4 RCRA Metals (Methods 6010/7471)

NOTES:
[1] The sample(s) shall be split and analyzed by two independent laboratories.
bgs: below ground surface

TABLE 3-1 (continued)
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
RECOMMENDED PHASE II DELINEATION SAMPLING PROGRAM - INTERIOR AREAS

AOC No.	Location	Initial Phase II Probe/Boring ID	SOIL PROBES				Delineation Program Soil Probe/Boring ID	Soil Sampling Interval	Recommended Analyses * (Soil)				Laboratory Turnaround	Comments
			No. of Probes	No. of Geoprobe Samples	No. of Corings	No. of Core Samples			1	2	3	4		
I-22	Blue Room	I22B01	*4*	*12*	--	--	*I22B01N14, I22B01S14, I22B01E14 and I22B01W14*	*3.5'-5.5', 5.5'-7.5' and 7.5'-9.5' bgs*	--	--	*12*	--	*2 week*	*Advance borings, collect samples and analyze based on the results of the samples at I22B01N7, I22B01S7, I22B01E7 and I22B01W7.*
I-27	OAO Hangar	I27B05	1	2	--	--	I27B05A	5'-7' and 7'-9' bgs	--	--	2	--	1 week	
			3	6	--	--	I27B05N7, I27B05E7 and I27B05W7	1'-3' and 3'-5' bgs	--	--	6	--	1 week	*Boring cannot be advanced south due to proximity to interior wall.*
			--	6	--	--		5'-7' and 7'-9' bgs	--	--	*6*	--	*1 week*	*Hold 5'-7' and 7'-9' samples and analyze based on results of 3'-5' sample at I27B05N7, I27B05E7 and I27B05W7.*
			3	*12*	--	--	*I27B05N14, I27B05E14 and I27B05W14*	*1'-3', 3'-5', 5'-7' and 7'-9' bgs*	--	--	*12*	--	*2 week*	*Advance borings, collect samples and analyze based on the results of the samples at I27B05N7, I27B05E7 and I27B05W7.*
I-34	Paint Tunnel	I34B01	1	1	--	--	I34B01A	2'-4' bgs	1 [1]	--	--	--	24 - 48 hr.	
			3	*9*	--	--	*I34B01N7, I34B01E7 and I34B01W7*	*0-2', 2'-4' and 4'-6' bgs*	*9*	--	--	--	*2 week*	*Advance borings, collect samples and analyze based on results of 2'-4' sample at I34B01A. Boring cannot be advanced south due to proximity to interior wall.*
		TOTALS	**26**	**81**	**3**	**3**			**25**	**2**	**56**	**3**		

***Recommended Target Compounds (and Analyses)**

1 Arsenic (Method 6010)
2 Semivolatile Organic Compounds (Method 8270) incl those listed in STARS Table 2
3 Cadmium (Method 6010)
4 RCRA Metals (Methods 6010/7471)

NOTES:
[1] The sample(s) shall be split and analyzed by two independent laboratories
bgs below ground surface

TABLE 3-2
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
RECOMMENDED PHASE II DELINEATION SAMPLING PROGRAM - EXTERIOR AREAS

AOC No.	Location	Initial Phase II Probe/Boring ID	SOIL PROBES				Delineation Program Soil Probe/Boring ID	Soil Sampling Interval	Recommended Analyses * (Soil)					Laboratory Turnaround	Comments	Geophysical Survey
			No. of Probes	No. of Geoprobe Samples	No. of Corings	No. of Core Samples			1	2	3	4	5			
E-4	Dry Well North of Plant 5 Kitchen along Former Taxiway	E04B01	1	2	--	--	E04B01A	17'-19' and 19'-21' bgs	--		2	--	--	2 week		--
E-7	Dry Well Near Northeast Corner of Plant 5 Building	E07B01	1	1			E07B01A	13'-15' bgs	1		1	--	--	2 week	--	--
E-9	Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1	E09B02	--	--	--	--	--	--	--	--	--	--	--	--	*Vertical extent of contamination has been determined at E09B02. All five air/electric pits (those at boring locations E09B01 through E09B05) shall be closed in accordance with USEPA UIC Program.*	--
		E09B03	--	--	--	--	--	--	--	--	--	--	--	--	*Vertical extent of contamination has been determined at E09B03. All five air/electric pits (those at boring locations E09B01 through E09B05) shall be closed in accordance with USEPA UIC Program.*	--
		E09B04	--	--	--	--	--	--	--	--	--	--	--	--	*Vertical extent of contamination has been determined at E09B04. All five air/electric pits (those at boring locations E09B01 through E09B05) shall be closed in accordance with USEPA UIC Program.*	--
		E09B05	--	--	--	--	--	--	--	--	--	--	--	--	*Vertical extent of contamination has been determined at E09B05. All five air/electric pits (those at boring locations E09B01 through E09B05) shall be closed in accordance with USEPA UIC Program.*	--
E-10	Air/Electric Pits in Courtyard "A"	E10B02	--	--	--	--	--	--	--	--	--	--	--	--	*Vertical extent of contamination has been determined at E10B02. Both air/electric pits (those at boring locations E10B01 and E10B02) shall be closed in accordance with USEPA UIC Program.*	--
E-12	Former Sanitary Leaching Pools West of Plant 5	E12B05	1	1	--	--	E12B05A	10'-12' bgs	1 [1]		--	--	--	1 week	--	--
			--	1	--	--		12'-14' bgs	*1*	--	--	--	--	*1 week*	*Hold 12'-14' sample and analyze based on results of 10'-12' sample.*	
		E12B07	1	1	--	--	E12B07A	12'-14' bgs	--	1	--	--	--	2 week	--	--
		E12B09	1	1	--	--	E12B09A	13'-15' bgs	--	1	--	--	--	2 week	--	--
		E12B10	1	2	--	--	E12B10A	14'-16' and 16'-18' bgs	--	--	2	--	--	2 week	--	--

***Recommended Target Compounds (and Analyses)**

1 Arsenic (Method 6010)
2 Cadmium (Method 6010)
3 Semivolatile Organic Compounds (Method 8270) incl those listed in STARS Table 2
4 RCRA Metals (Methods 6010/7471)
5 Lead (Method 6010)

NOTES:
[1] The sample(s) shall be split and analyzed by two independent laboratories
bgs below ground surface

TABLE 3-2 (continued)
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
RECOMMENDED PHASE II DELINEATION SAMPLING PROGRAM - EXTERIOR AREAS

AOC No.	Location	Initial Phase II Probe/Boring ID	SOIL PROBES				Delineation Program Soil Probe/Boring ID	Soil Sampling Interval	Recommended Analyses * (Soil)					Laboratory Turnaround	Comments	Geophysical Survey
			No. of Probes	No. of Geoprobe Samples	No. of Corings	No. of Core Samples			1	2	3	4	5			
E-12	Former Sanitary Leaching Pools West of Plant 5	E12B12	1	1	--	--	E12B12A	12'-14' bgs	--	--	--	1	--	2 week		
		E12B15	1	1	--	--	E12B15A	14'-16' bgs	--	--	1	--	--	2 week		
		E12B18	1	1	--	--	E12B18A	12'-14' bgs	--	1	1	--	1	2 week		
		E12B29	1	1	--	--	E12B29A	15'-17' bgs	--	--	--	1	--	2 week		
		E12B30	1	1	--	--	E12B30A	15'-17' bgs	--	--	1	--	--	2 week		
E-12	Remaining 50% of Former Sanitary Leaching Pools West of Plant 5		30	210		--	E12B31 - E12B60	8'-22' bgs	--		60	60	--	2 week	***Based on the results of the samples selected for analysis, these leaching pools may require additional sampling to determine the vertical extent of soil contamination.***	
E-13	Unverified Former Sanitary Leaching Pools West of Plant 5	E13B24	1	1	--	--	E13B24A	13'-15' bgs	--	--	--	1	--	2 week		
E-13	Remaining 50% of Unverified Former Sanitary Leaching Pools West of Plant 5	--	25	175	--	--	E13B26 - E13B50	8'-22' bgs	--	--	50	50	--	2 week	***Use geophysical survey (combination of magnetometry and GPR) to locate former leaching pools possibly located immediately north, east and west of Building 23. Based on the results of the samples selected for analysis, these leaching pools may require additional sampling to determine the vertical extent of soil contamination.***	■
E-15	Former Sanitary Wastewater Disposal System Wet Well West of Plant 5	E15B01	1	1	--	--	E15B01A	22'-24' bgs	1 [1]	--	--	--	--	1 week		
			--	2	--	--		24'-26' and 26'-28' bgs	*2*	--	--	--	--	*2 week*	***Hold 24'-26' and 26'-28' samples and analyze based on results of 22'-24' sample.***	

***Recommended Target Compounds (and Analyses)**

1 Arsenic (Method 6010)
2 Cadmium (Method 6010)
3 Semivolatile Organic Compounds (Method 8270) incl. those listed in STARS Table 2
4 RCRA Metals (Methods 6010,7471)
5 Lead (Method 6010)

NOTES:
[1] The sample(s) shall be split and analyzed by two independent laboratories
bgs below ground surface

TABLE 3-2 (continued)
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
RECOMMENDED PHASE II DELINEATION SAMPLING PROGRAM - EXTERIOR AREAS

AOC No.	Location	Initial Phase II Probe/Boring ID	SOIL PROBES: No. of Probes	No. of Geoprobe Samples	No. of Corings	No. of Core Samples	Delineation Program Soil Probe/Boring ID	Soil Sampling Interval	Recommended Analyses * (Soil): 1	2	3	4	5	Laboratory Turnaround	Comments	Geophysical Survey
E-35	Areas of Stressed Vegetation	E35B01	1	1	--	--	E35B01A	0 - 2' bgs	1 ¹	--	--	--	--	24 - 48 hr		
			3	*6*	--	--	*E35B01S7, E35B01E7 and E35B01W7*	*0-2' and 2'-4' bgs*	*6*	--	--	--	--	*1 week*	*Advance borings, collect samples and analyze based on results of 0-2' sample at E35B01A. Cannot advance borings north due to proximity to building wall.*	
			3	*6*	--	--	*E35B01S14, E35B01E14 and E35B01W14*	*0-2' and 2'-4' bgs*	*6*	--	--	--	--	*2 week*	*Advance borings, collect samples and analyze based on the results of the samples at E35B01S7, E35B01E7 and E35B01W7. Cannot advance borings north due to proximity to building wall.*	
E-36	Concrete Foundation of Former Test Platform	E36B01	1	1	--	--	E36B01A	0 - 2' bgs	1 ¹	--	--	--	--	24 - 48 hr	--	
			4	*8*	--	--	*E36B01N7, E36B01S7, E36B01E7 and E36B01W7*	*0-2' and 2'-4' bgs*	*8*	--	--	--	--	*1 week*	*Advance borings, collect samples and analyze based on results of 0-2' sample at E36B01A.*	
			4	*8*	--	--	*E36B01N14, E36B01S14, E36B01E14 and E36B01W14*	*0-2' and 2'-4' bgs*	*8*	--	--	--	--	*2 week*	*Advance borings, collect samples and analyze based on the results of the samples at E36B01N7, E36B01S7, E36B01E7 and E36B01W7.*	
E-40	Former Material Storage Area Northwest of Plant 5 Building	E40B01	1	1	--	--	E40B01A	2'-4' bgs	1 ¹	--	--	--	--	24 - 48 hr	--	
			--	2	--	--		4'-6' and 6'-8' bgs	*2*	--	--	--	--	*2 week*	*Hold 4'-6' and 6'-8' samples and analyze based on results of 2'-4' sample.*	
			4	*16*	--	--	*E40B01N7, E40B01S7, E40B01E7 and E40B01W7*	*0-2', 2'-4', 4'-6' and 6'-8' bgs*	*16*	--	--	--	--	*1 week*	*Advance borings, collect samples and analyze based on the results of the samples at E40B01A.*	
			4	*16*	--	--	*E40B01N14, E40B01S14, E40B01E14 and E40B01W14*	*0-2', 2'-4', 4'-6' and 6'-8' bgs*	*16*	--	--	--	--	*2 week*	*Advance borings, collect samples and analyze based on the results of the samples at E40B01N7, E40B01S7, E40B01E7 and E40B01W7.*	
E-44	Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building	E44B01	1	2	--	--	E44B01A	6'-8' and 8'-10' bgs	--	--	2	--	--	2 week	*Dry well at Exterior Pipe Trench shall be closed in accordance with USEPA UIC Program.*	
		TOTALS	**94**	**470**	**0**	**0**			**76**	**3**	**120**	**113**	1			

***Recommended Target Compounds (and Analyses)**

1 Arsenic (Method 6010)
2 Cadmium (Method 6010)
3 Semivolatile Organic Compounds (Method 8270) incl those listed in STARS Table 2
4 RCRA Metals (Methods 6010/7471)
5 Lead (Method 6010)

NOTES:
¹ The sample(s) shall be split and analyzed by two independent laboratories
bgs below ground surface

In order to establish sample locations at AOC E12, Conrad Geosciences Corp. of Poughkeepsie, New York was subcontracted to perform geophysical surveys at two areas around Building 23. Ground penetrating radar (GPR) and magnetometry/gradiometry (M/G) were used to perform the geophysical surveys. The areas investigated by Conrad Geosciences, including the area designations of both D&B and Conrad, are shown on Figure 3-1.

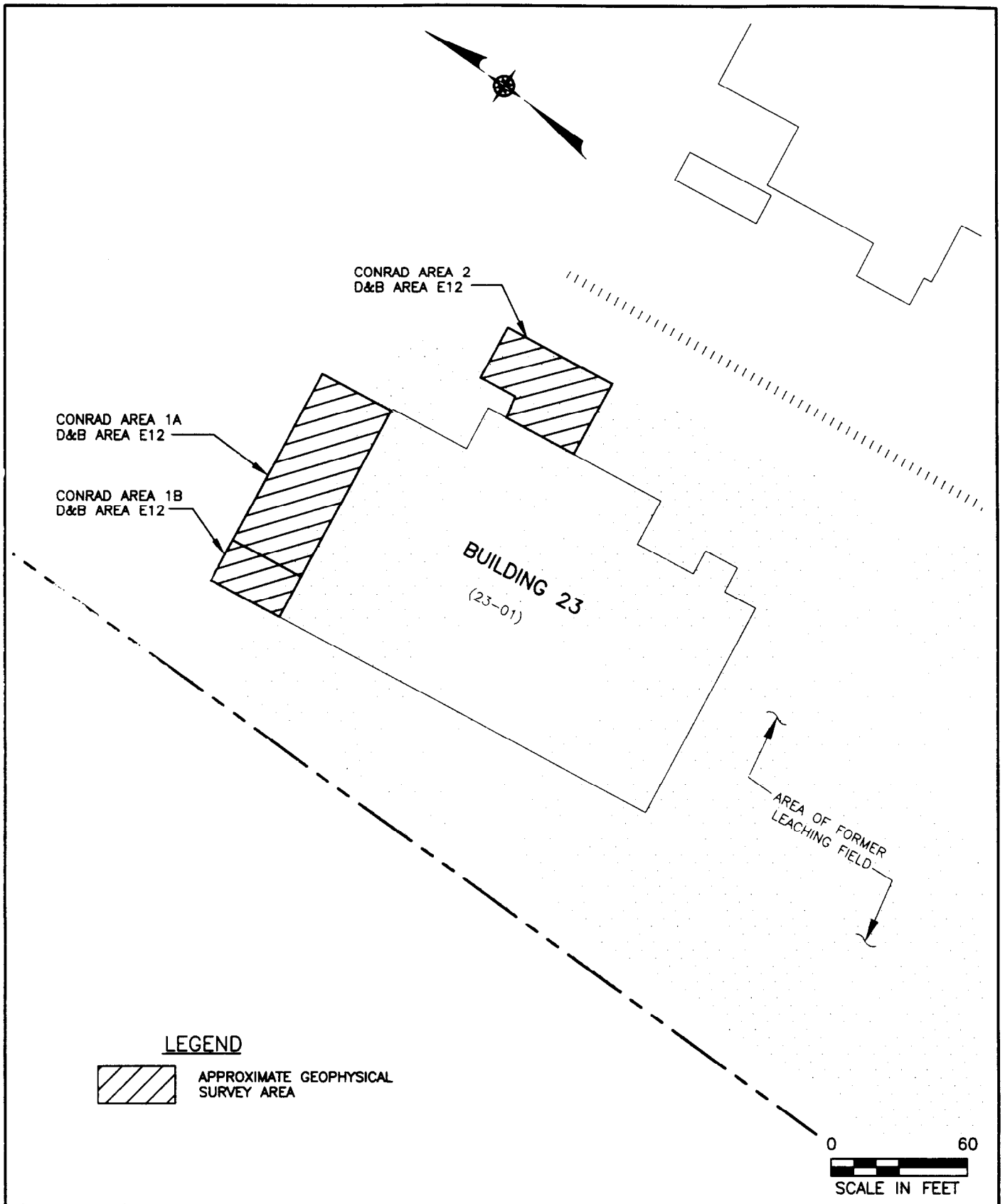
For both geophysical methods, a survey grid was initially laid out within the potential AOC. Readings were recorded from the instrument(s) used at intervals of 0.25 to 2 meters along the grid lines. The measured data were then downloaded and plotted, to create anomaly maps for each investigated area. The anomaly maps were used to locate soil borings. A more detailed description of the methods and instruments used during the geophysical survey is included in the reports from Conrad Geosciences, in Appendix D.

3.2.2 Soil Sampling

This section provides a description of the procedures used to collect soil samples during the Delineation Phase II Site Assessment at Plant 5. Dedicated field books, which are available in the project file, provide documentation of the daily field activities conducted at the site during the field program.

The interior soil probes were advanced utilizing Geoprobe tooling and either an electric hammer-drill or, where access allowed, truck-mounted Simco 200 Earthprobe. At exterior locations, soil samples were collected utilizing a truck-mounted hollow stem auger drill rig (CME 55) with Geoprobe tooling, a truck-mounted Simco 200 Earthprobe with Geoprobe tooling or manual advancement of Geoprobe tooling using an electric hammer-drill.

The Geoprobe tooling consisted of drill rods and either a 1.5-inch outside diameter by 2-foot long or a 2-inch outside diameter by 4-foot long soil probe sampler. A clear polyethylene PETG sample tube liner, dedicated to each soil probe sample, was used to contain the sample within the sampler. Each soil probe was advanced utilizing the hammer-drill, Earthprobe or drill



DIR: 1539 FILE: PLANS-GEO-PII.DWG LVG/12/17/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

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

PHASE II DELINEATION PROGRAM – GEOPHYSICAL SURVEY AREAS

FIGURE 3-1

rig's 140-pound hammer to drive the soil probe sampler, sample tube liner and drill rods to the desired depth. The soil probe sampler was retrieved using a mechanical floor jack, the Earthprobe or the drill rig.

All soil samples collected were geologically characterized, inspected for staining, discoloration or odors, and screened for VOCs using a PID. This information is included on the soil boring logs in Appendix E.

During soil probe installation, a PID was used to monitor VOCs in the workers' breathing zone and at the boreholes. Air monitoring results are documented in the project field books. The PID was calibrated on at least a daily basis, using isobutylene gas at a concentration of 100 parts per million in air. Equipment calibration was documented in the project field books.

Material to be sent for laboratory analysis was placed into laboratory-supplied sample bottles. The filled bottles were immediately placed into an iced cooler for subsequent shipment to the laboratory under Chain of Custody procedures. Sampled material not required for analysis was returned to the borehole from which it came. The remainder of the borehole was filled with clean sand and/or bentonite pellets. Each borehole was restored at grade with the same material that was originally in place. That is, asphalt areas were restored with asphalt, concrete areas were restored with concrete and grass and dirt areas were restored with dirt or sand. Where manholes were encountered, the covers were replaced after sampling had been completed.

3.2.3 Concrete Core Sampling

In order to evaluate whether historic activities in specific areas had impacted the concrete floors, core samples were collected at AOC I1 (Former Alodine Line Room) during the Delineation Phase II Site Assessment program. Concrete cores were collected utilizing an electric hammer-drill equipped with a 3-inch diameter concrete coring bit. The depths of the concrete cores varied from location to location. Samples were analyzed as specified in the scope of work (see Table 3-1). The sampled areas were restored with concrete.

3.2.4 Decontamination Procedures

All non-dedicated sampling equipment was decontaminated between sample locations. Decontamination procedures consisted of:

- external wash with a solution of non-phosphate detergent and potable water;
- potable water rinse; and
- distilled/deionized water rinse.

Decontamination fluids were contained for proper disposal.

3.3 Findings

As previously described, the Delineation Phase II Site Assessment consisted of sampling at 9 interior AOCs and 14 exterior AOCs. A description of the investigative activities performed at each AOC is provided below. The samples collected as part of the interior and exterior investigations are summarized on Tables 3-3 and 3-4, respectively. Boring locations are shown on Figures 3-2 (interior locations), 3-3 (exterior locations) and 3-4 (exterior leaching pools).

Analytical results for all samples analyzed during the Delineation Phase II Site Assessment are summarized in tables included in Appendix F. As with the Initial Phase II Site Assessment program, these values were 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").

TABLE 3-3
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
PHASE II DELINEATION SAMPLING PROGRAM - INTERIOR AREAS

AOC No.	Location	Soil Probe/Boring ID	Soil/Core Samples		Analytical Parameters * (Soil or Concrete)				
			Collected	Analyzed	1	2	3	4	5
I-1	Former Alodine Line Room	I01C01, I01C02 and I01C03	I01C01, I01C02 and I01C03	I01C01, I01C02 and I01C03	--	--	--	--	■
I-5	Condensate Pit	*Sump in Condensate Pit shall be closed in accordance with USEPA UIC Program.*							
I-14	Former Router Room	I14B02A	0-2' bgs	0-2' bgs (1)	--	■	--	--	--
I-18	High Voltage Crew Area	I18B01A	9'-11' and 11'-13' bgs	9'-11' and 11'-13' bgs	--	--	■	--	--
I-21	Generator Room	*Tile drain pipes shall be closed in accordance with USEPA UIC Program.*							
I-22	Blue Room	I22B01A	5.5'-7.5' and 7.5'-9.5' bgs	5.5'-7.5' and 7.5'-9.5' bgs	--	--	--	■	--
		I22B01N7, I22B01S7, I22B01E7 and I22B01W7	1.5'-3.5', 3.5'-5.5', 5.5'-7.5' and 7.5'-9.5' bgs	1.5'-3.5', 3.5'-5.5' and 5.5'-7.5' bgs	--	--	--	■	--
I-27	OAO Hangar	I27B05A	5'-7' and 7'-9' bgs	5'-7' and 7'-9' bgs	--	--	--	■	--
		I27B05W7	1'-3', 3'-5', 5'-7' and 7'-9' bgs	1'-3' and 3'-5' bgs	--	--	--	■	--
		I27B05N7, I27B05N14, I27B05E7 and I27B05E14	1'-3', 3'-5', 5'-7' and 7'-9' bgs	1'-3', 3'-5', 5'-7' and 7'-9' bgs	--	--	--	■	--
		I27B05N14 and I27B05E14	--	5'-7' and 7'-9' bgs	■	--	■	--	--
I-34	Paint Tunnel	I34B01A	2'-4' bgs	2'-4' bgs (1)	--	■	--	--	--

***Analytical Parameters (Method)**

1. Volatile Organic Compounds (Method 8260)
2. Arsenic (Method 6010)
3. Semivolatile Organic Compounds (Method 8270) incl. those listed in STARS Table 2
4. Cadmium (Method 6010)
5. RCRA Metals (Methods 6010/7471)

NOTES:

(1) The sample was split and analyzed by two independent laboratories.
bgs: below ground surface.

TABLE 3-4
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
PHASE II DELINEATION SAMPLING PROGRAM - EXTERIOR AREAS

AOC No.	Location	Soil Probe/Boring ID	Soil Samples		Analytical Parameters * (Soil)					Geophysical Survey
			Collected	Analyzed	1	2	3	4	5	
E-4	Dry Well North of Plant 5 Kitchen along Former Taxiway	E04B01A	17'-19' and 19'-21' bgs	17'-19' and 19'-21' bgs	--	--	■	--	--	--
E-7	Dry Well Near Northeast Corner of Plant 5 Building	E07B01A	13'-15' bgs	13'-15' bgs	■	--	■	--	--	--
E-9	Air Electric Pits West of Shuttle Wing Hangar and High Bay 1	*The vertical extent of contamination has been determined at all five air electric pits (those at boring locations E09B01 through E09B05) and shall be closed in accordance with USEPA UIC Program.*								
E-10	Air Electric Pits in Courtyard "A"	*The vertical extent of contamination has been determined at both air electric pits (those at boring locations E10B01 through E10B02) and shall be closed in accordance with USEPA UIC Program.*								
E-12	Former Sanitary Leaching Pools West of Plant 5	E12B05A	10'-12' bgs	10'-12' bgs (1)	■	--	--	--	--	--
			12'-14' bgs	12'-14' bgs	■	--	--	--	--	--
		E12B07A	12'-14' bgs	12'-14' bgs	--	■	--	--	--	--
		E12B09A	13'-15' bgs	13'-15' bgs	--	■	--	--	--	--
		E12B10A	14'-16' and 16'-18' bgs	14'-16' and 16'-18' bgs	--	--	■	--	--	--
		E12B12A	12'-14' bgs	12'-14' bgs	--	--	--	■	--	--
		E12B15A	14'-16' bgs	14'-16' bgs	--	--	■	--	--	--
		E12B18A	12'-14' bgs	12'-14' bgs	--	■	■	--	■	--
		E12B29A	15'-17' bgs	15'-17' bgs	--	--	--	■	--	--
		E12B30A	15'-17' bgs	15'-17' bgs	--	--	■	--	--	--
E-12	Remaining 50% of Former Sanitary Leaching Pools West of Plant 5	E12B31	8'-20' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	--
		E12B33, E12B39, E12B44 and E12B47	8'-20' bgs (continuous)	8'-10' and 12'-14' bgs	--	--	■	■	--	--
		E12B51	8'-20' bgs (continuous)	*refer to Section 3.3.3 for discussion*						■
		E12B53, E12B56 and E12B57	8'-20' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	■
		E12B54	8'-20' bgs (continuous)	*refer to Section 3.3.3 for discussion*						■
		E12B32	8'-24' bgs (continuous)	12'-14' and 16'-18' bgs	--	--	■	■	--	--
		E12B34, E12B40, E12B37, E12B38 and E12B41	8'-24' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	--
		E12B42	8'-22' bgs (continuous)	8'-10' and 12'-14' bgs	--	--	■	■	--	--
		E12B43, E12B45, E12B46 and E12B48	8'-22' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	--

***Analytical Parameters (Method)**

1 Arsenic (Method 6010)
2 Cadmium (Method 6010)
3 Semivolatile Organic Compounds (Method 8270) incl. those listed in STARS Table 2
4 RCRA Metals (Methods 6010/7471)
5 Lead (Method 6010)

NOTES:
(1) The sample was split and analyzed by two independent laboratories
bgs: below ground surface

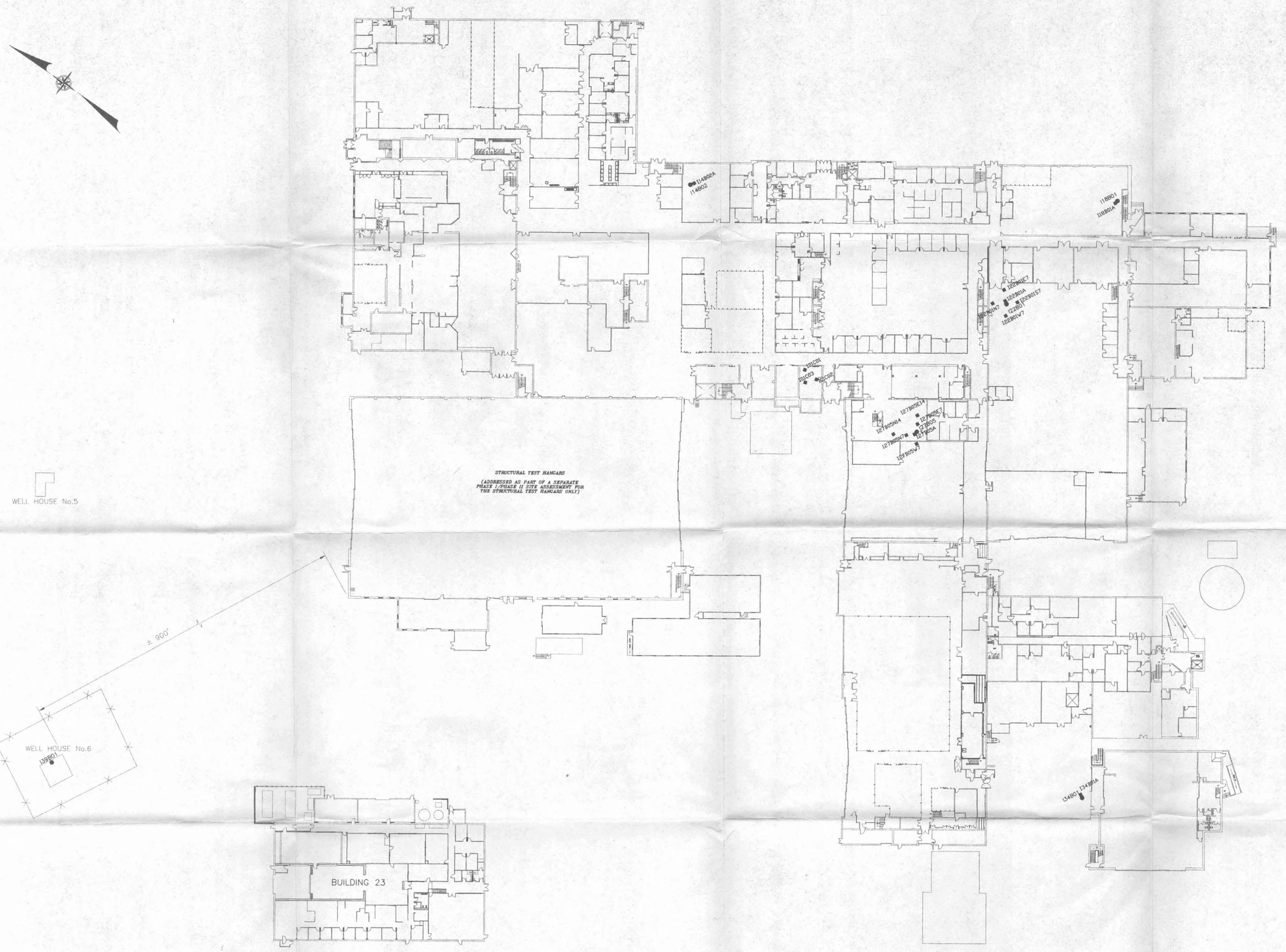
TABLE 3-4 (continued)
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Delineation Program
PHASE II DELINEATION SAMPLING PROGRAM - EXTERIOR AREAS

AOC No.	Location	Soil Probe/Boring ID	Soil/Core Samples		Analytical Parameters * (Soil or Concrete)					Geophysical Survey
			Collected	Analyzed	1	2	3	4	5	
E-12	Remaining 50% of Former Sanitary Leaching Pools West of Plant 5	E12B36 and E12B49	11'-21' bgs (continuous)	11'-13' and 15'-17' bgs	--	--	■	■	--	--
		E12B50 and E12B55	11'-21' bgs (continuous)	11'-13' and 15'-17' bgs	--	--	■	■	--	■
		E12B52	12'-22' bgs (continuous)	12'-14' and 16'-18' bgs	--	--	■	■	--	■
		E12B35, E12B58, E12B59 and E12B60	*refer to Section 3.3.3 for discussion*							
E-13	Unverified Former Sanitary Leaching Pools West of Plant 5	E13B24A	13'-15' bgs	13'-15' bgs	--	--	--	■	--	--
E-13	Remaining 50% of Unverified Former Sanitary Leaching Pools West of Plant 5	E13B26, E13B27 and E13B49	11'-21' bgs (continuous)	11'-13' and 15'-17' bgs	--	--	■	■	--	--
		E13B28, E13B30, E13B40 and E13B47	8'-16' bgs (continuous)	*refer to Section 3.3.3 for discussion*						
		E13B29and E13B48	8'-20' bgs (continuous)	8'-10' and 12'-14' bgs	--	--	■	■	--	--
		E13B31 and E13B33	13'-21' bgs (continuous)	13'-15' and 17'-19' bgs	--	--	■	■	--	--
		E13B32	13'-23' bgs (continuous)	13'-15' and 17'-19' bgs	--	--	■	■	--	--
		E13B34, E13B36, E13B37 and E13B41	11'-21' bgs (continuous)	11'-13' and 15'-17' bgs	--	--	■	■	--	--
		E13B35	8'-20' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	--
		E13B38	8'-16' bgs (continuous)	*refer to Section 3.3.3 for discussion*						
		E13B39	8'-14' bgs (continuous)	*refer to Section 3.3.3 for discussion*						
		E13B42, E13B43, E13B44, E13B45 and E13B46	10'-20' bgs (continuous)	10'-12' and 14'-16' bgs	--	--	■	■	--	--
		E13B50	8'-10' bgs (continuous)	*refer to Section 3.3.3 for discussion*						
E-15	Former Sanitary Wastewater Disposal System Wet Well West of Plant 5	E15B01A	22'-24', 24'-26' and 26'-28' bgs	22'-24' bgs (1)	■	--	--	--	--	--
E-35	Areas of Stressed Vegetation	E35B01A	0 - 2' bgs	0 - 2' bgs (1)	■	--	--	--	--	--
		E35B01S7, E35B01E7 and E35B01W7	0-2' and 2'-4' bgs	0-2' and 2'-4' bgs	■	--	--	--	--	--
		E35B01W14	0-2' and 2'-4' bgs	0-2' and 2'-4' bgs	■	--	--	--	--	--
E-36	Concrete Foundation of Former Test Platform	E36B01A	0 - 2' bgs	0 - 2' bgs (1)	■	--	--	--	--	--
E-40	Former Material Storage Area Northwest of Plant 5 Building	E40B01A	2'-4' bgs	2'-4' bgs (1)	■	--	--	--	--	--
E-44	Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building	E44B01A	6'-8' and 8'-10' bgs	6'-8' and 8'-10' bgs	--	--	■	--	--	--

***Analytical Parameters (Method)**

1. Arsenic (Method 6010)
2. Cadmium (Method 6010)
3. Semivolatile Organic Compounds (Method 8270) incl. those listed in STARS Table 2
4. RCRA Metals (Methods 6010/7471)
5. Lead (Method 6010)

NOTES:
(1) The sample was split and analyzed by two independent laboratories.
bgs: below ground surface



NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

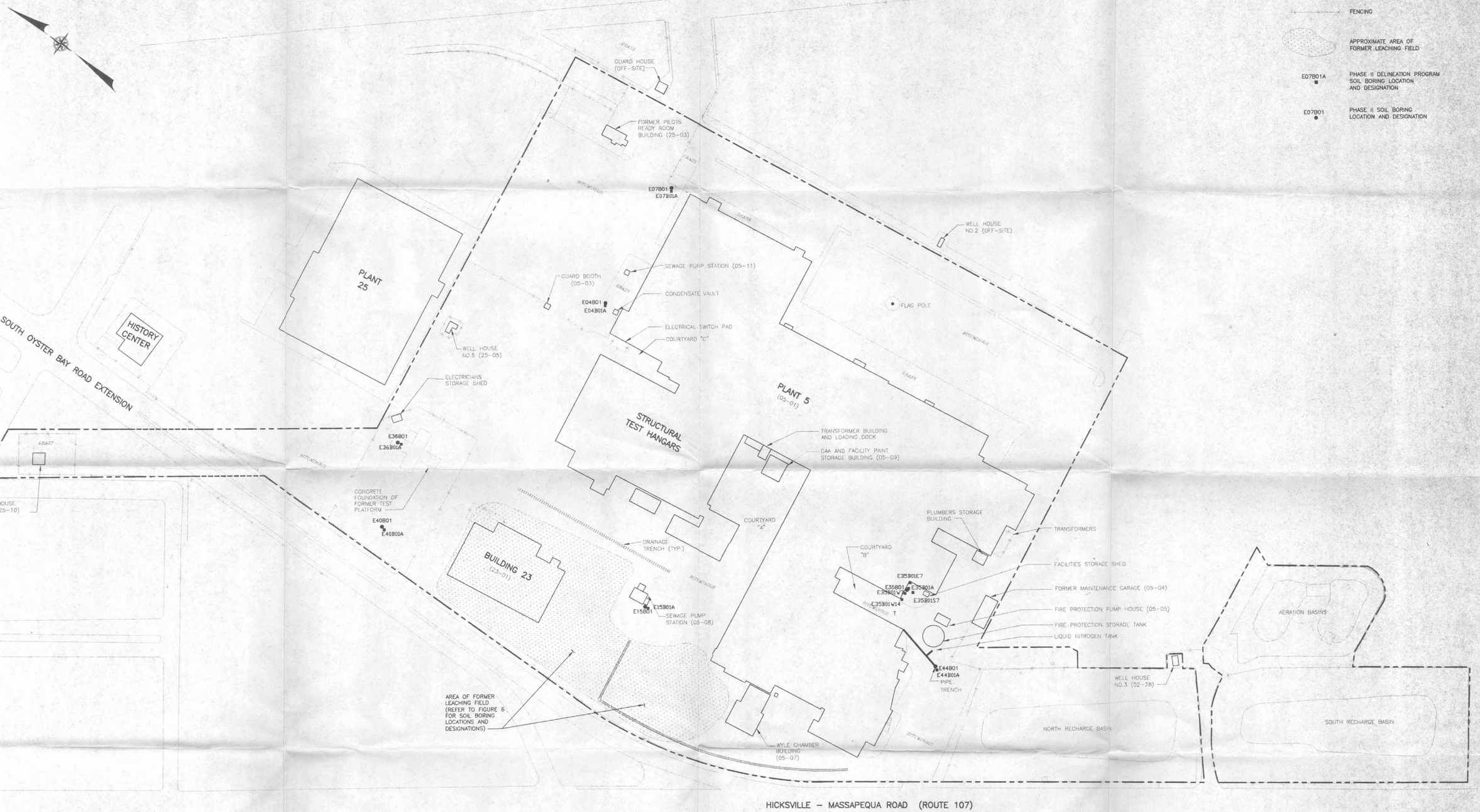
PHASE II DELINEATION PROGRAM SOIL BORING LOCATION MAP – INTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 3-2

000401FB05X

DIR:1539 FILE: PLANS-1.DWG | LYG:12\10\98



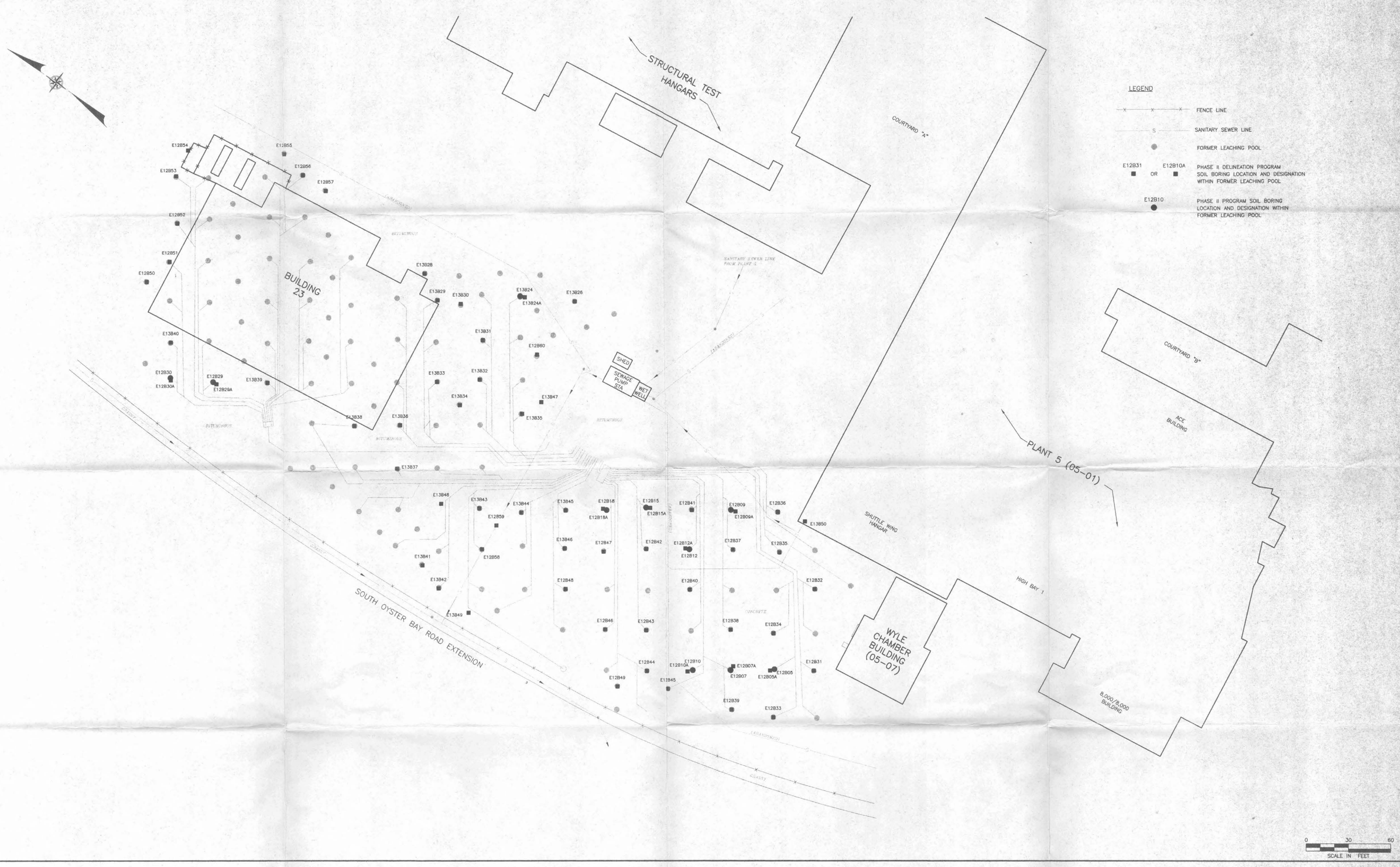
DIR:1539 FILE: PLANS-NEW-1.DWG LVC-12/03/98

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

PHASE II DELINEATION PROGRAM SOIL BORING LOCATION MAP – EXTERIOR AREAS

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 3-3



NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 – PHASE II SITE ASSESSMENT

PHASE II DELINEATION PROGRAM SOIL BORING LOCATION MAP – AREA OF FORMER LEACHING FIELD

FIGURE 3-4

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

DR: 1539
FILE: PLAN5-K.DWG
LVG/12/10/98

In addition to the criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg, as presented in the TAGM, were utilized.

In addition, for screening purposes, the analytical results of the concrete core samples obtained during Delineation Phase II Site Assessment are compared to the results of a study published by the Portland Cement Association (PCA) entitled, "An Analysis of Trace Metals in Cement and Cement Kiln Dust." The study presents a "normal" or average concentration range of total trace metals in a "typical" cement. The table that follows presents the results of the study. In addition, the results of the PCA study were converted to estimated total trace metal concentrations in concrete based on an assumed density and cement content of concrete (i.e., 4,000 lbs/cy and 650 lbs/cy, respectively).

Trace Metals	Range of Concentrations in Cement (mg/kg)	Estimated Range of Concentrations in Concrete (mg/kg)
Antimony	0.7 – 4	0.1 - 0.6
Arsenic	5 – 71	0.8 - 11.4
Beryllium	91 - 1,402	14.6 - 224.3
Cadmium	0.32 - 3.05	0.051 - 0.49
Chromium	25 – 422	4 - 67.4
Lead	1 – 75	0.16 - 12
Mercury	<0.001 - 0.04	<0.0002 - 0.006
Nickel	10 – 129	1.6 - 20.6
Selenium	0.62 - 2.23	0.10 - 0.36
Silver	6.75 - 19.9	1.08 - 3.2
Thallium	0.01 - 2.58	0.002 - 0.41

It should be noted that the results of the PCA study presented above do not represent any type of regulatory threshold; and, the study results are used in the discussion of the findings which follow only as a benchmark with respect to "typical" contaminant ranges in concrete.

3.3.1 Interior Investigation

As previously discussed, the Delineation Phase II Site Assessment interior investigation activities were conducted in October 1998 at the following areas at the site:

- Former Alodine Room (I1)
- Condensate Pit (I5)
- Former Router Room (I14)
- High Voltage Crew Area (I18)
- Generator Room (I21)
- Blue Room (I22)
- OAO Hangar (I27)
- Paint Tunnel (I34)

An area by area discussion of the Delineation Phase II Site Assessment interior investigation activity findings is presented below.

I1 - Former Alodine Room

Three concrete core samples were collected at coring locations I01C01, I01C02 and I01B03 during the October 1998 Delineation Phase II Site Assessment field investigation. Concrete core samples were analyzed as described on Table 3-3. The analytical results are presented on Table F-3 in Appendix F and are summarized as follows:

- RCRA Metals
  - Mercury was detected outside of the PCA study reported range of <0.0002 to 0.006 mg/kg in concrete core sample I01C01.

- Cadmium was detected outside of the PCA study reported range of 0.051 to 0.49 mg/kg in concrete core samples I01C01 and I01C02.

- Chromium was detected outside of the PCA study reported range of 0.051 to 0.49 mg/kg in concrete core samples I01C01, I01C02 and I01C03.

I5 – Condensate Pit

Due to the presence of a sump in the Condensate Pit (I5), soil sampling activities were not conducted in this area during the October 1998 Delineation Phase II Site Assessment field investigation. However, the sump in the Condensate Pit will be addressed as a separate Underground Injection Control (UIC) program.

I14 - Former Router Room

One soil sample was collected at soil boring location I14B02A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was split and analyzed by two independent laboratories as described on Table 3-3. The analytical results are presented on Tables F-3 and F-3A in Appendix F and are summarized as follows:

- RCRA Metals

  - Arsenic was not detected at concentrations exceeding its Eastern USA background level in the split soil samples I14B02A (0-2) analyzed by both independent laboratories.

I18 - High Voltage Crew Area

Two soil samples were collected at soil boring location I18B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil samples were analyzed as described on Table 3-3. The analytical results are presented on Table F-2 in Appendix F and are summarized as follows:

- Semivolatile Organic Compounds

  - Benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding NYSDEC TAGM criteria in soil sample I18B01A (9-11). In addition, phenol, 2-Methlyphenol, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding NYSDEC TAGM criteria in soil sample I18B01A (11-13).

  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg was not exceeded in soil samples I18B01A (9-11) and I18B01A (11-13). However, the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil samples I18B01A (9-11) and I18B01A (11-13).

I21 – Generator Room

Due to the presence of tile drain pipes in the Generator Room (I21), soil sampling activities were not conducted in this area during the October 1998 Delineation Phase II Site Assessment field investigation. However, the tile drain pipes in the Generator Room will be addressed as a separate Underground Injection Control (UIC) program.

I22 - Blue Room

Fourteen soil samples were collected at soil boring location I22B01A, I22B0N7, I22B01S7, I22B01E7 and I22B01W7 during the October 1998 Delineation Phase II Site Assessment field investigation. The soil samples were analyzed as described on Table 3-3. The analytical results are presented on Table F-3 in Appendix F and are summarized as follows:

- RCRA Metals

  - Cadmium was not detected at a concentration exceeding its Eastern USA background level in the soil samples collected at soil boring locations I22B01A, I22B0N7, I22B01S7, I22B01E7 and I22B01W7.

I27 - OAO Hangar

Twenty soil samples were collected at soil boring location I27B05A, I27B05N7, I27B05N14, I27B05E7, I27B05E14 and I27B05W7 during the October 1998 Delineation Phase II Site Assessment field investigation. The soil samples were analyzed as described on Table 3-3. It should be noted that soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9) were analyzed for VOCs and SVOCs based on the results of field instrumentation measurements and visual observations. The analytical results are presented on Tables F-1 through F-3 in Appendix F and are summarized as follows:

- Volatile Organic Compounds
  - VOCs were not detected at concentrations exceeding NYSDEC TAGM criteria in soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9).
- Semivolatile Organic Compounds
  - Benzo(a)pyrene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples I27B05N14 (5-7), I27B05E14 (5-7) and I27B05E14 (7-9).
  - Phenol was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples I27B05N14 (5-7), I27B05N14 (7-9) and I27B05E14 (7-9).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg and the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was not exceeded in soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9).
- RCRA Metals
  - Cadmium was detected at concentrations exceeding Eastern USA background levels in the soil samples I27B05A (5-7), I27B05A (7-9), I27B05N7 (1-3), I27B05N7 (3-5), I27B05N7 (5-7), I27B05N7 (7-9), I27B05N14 (1-3), I27B05N14 (3-5), I27B05N14 (5-7), I27B05N14 (7-9), I27B05E7 (1-3), I27B05E7 (3-5), I27B05E7 (7-9), I27B05E14 (1-3), I27B05E14 (5-7) and I27B05E14 (7-9).

- Chromium was detected at concentrations exceeding Eastern USA background levels in the soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9).

- Mercury was detected at concentrations exceeding Eastern USA background levels in the soil samples I27B05N14 (5-7) and I27B05N14 (7-9).

I34 - Paint Tunnel

One soil sample was collected at soil boring location I34B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was split and analyzed by two independent laboratories as described on Table 3-3. The analytical results are presented on Tables F-3 and F-3A in Appendix F and are summarized as follows:

- RCRA Metals

  - Arsenic was not detected at concentrations exceeding its Eastern USA background level in the split soil samples I34B01A (2-4) analyzed by both independent laboratories.

3.3.2 Exterior Investigation

As previously discussed, the Delineation Phase II Site Assessment exterior investigation activities were conducted in October 1998 at the following areas at the site:

- Dry Well North of Plant 5 Kitchen along Former Taxiway (E4)
- Dry Well Near Northeast Corner of Plant 5 Building (E7)
- Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1 (E9)
- Air/Electric Pits in Court Yard "A" (E10)
- Former Sanitary Wastewater Disposal System Wet Well West of Plant 5 (E15)
- Areas of Stressed Vegetation (E35)

- Concrete Foundation of Former Test Platform (E36)
- Former Material Storage Area Northwest of Plant 5 Building (E40)
- Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building (E44)

An area by area discussion of the Delineation Phase II Site Assessment exterior investigation activity findings is presented below.

E4 - Dry Well North of Plant 5 Kitchen along Former Taxiway

Two soil samples were collected at soil boring location E04B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil samples were analyzed as described on Table 3-4. The analytical results are presented on Table F-4 in Appendix F and are summarized as follows:

- Semivolatile Organic Compounds
  - Benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding NYSDEC TAGM criteria in soil sample E04B01A (19-21).
  - As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg and the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was not exceeded in soil sample E04B01A (19-21).

E7 - Dry Well Near Northeast Corner of Plant 5 Building

One soil sample was collected at soil boring location E07B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was analyzed as described on Table 3-4. The analytical results are presented on Tables F-4 and F-5 in Appendix F and are summarized as follows:

- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding NYSDEC TAGM criteria in soil sample E07B01A (13-15).
- RCRA Metals
  - Arsenic was not detected at a concentration exceeding Eastern USA background levels in soil sample E07B01A (13-15).

E9 - Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1

The vertical extent of contamination has been determined at soil boring locations E09B01 through E09B05. As a result, soil sampling activities were not conducted in these areas during the October 1998 Delineation Phase II Site Assessment field investigation. In addition, it has been determined that the five Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1 will be addressed as a separate Underground Injection Control (UIC) program.

E10 - Air/Electric Pits in Court Yard "A"

The vertical extent of contamination has been determined at soil boring locations E10B01 and E10B02. As a result, soil sampling activities were not conducted in these areas during the October 1998 Delineation Phase II Site Assessment field investigation. In addition, it has been determined that the two Air/Electric Pits in Courtyard "A" will be addressed as a separate Underground Injection Control (UIC) program.

E15 - Former Sanitary Wastewater Disposal System Wet Well West of Plant 5

One soil sample was collected at soil boring location E15B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was split and analyzed by two independent laboratories as described on Table 3-4. The analytical results are presented on Tables F-5 and F-5A in Appendix F and are summarized as follows:

- RCRA Metals

  - Arsenic was not detected at concentrations exceeding its Eastern USA background level in the split soil samples E15B01A (22-24) analyzed by both independent laboratories.

E35 - Areas of Stressed Vegetation

Nine soil samples were collected at soil boring locations E35B01A, E35B01S7, E35B01E7, E35B01W7 and E35B01W14 during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample collected at soil boring location E35B01A was split and analyzed by two independent laboratories as described on Table 3-4. The remaining soil samples collected at soil boring locations E35B01S7, E35B01E7, E35B01W7 and E35B01W14 were analyzed as described on Table 3-4. The analytical results are presented on Tables F-5 and F-5A in Appendix F and are summarized as follows:

- RCRA Metals

  - Arsenic was detected at concentrations exceeding Eastern USA background levels in soil samples E35B01W7 (0-2), E35B01W7 (2-4) and E35B01W14 (2-4) analyzed by STL Laboratories.

E36 - Concrete Foundation of Former Test Platform

One soil sample was collected at soil boring location E36B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was split and analyzed by two independent laboratories as described on Table 3-4. The analytical results are presented on Tables F-5 and F-5A in Appendix F and are summarized as follows:

- RCRA Metals

  - Arsenic was not detected at concentrations exceeding its Eastern USA background level in the split soil samples E36B01A (0-2) analyzed by both independent laboratories.

E40 - Former Material Storage Area Northwest of Plant 5 Building

One soil sample was collected at soil boring location E40B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil sample was split and analyzed by two independent laboratories as described on Table 3-4. The analytical results are presented on Tables F-5 and F-5A in Appendix F and are summarized as follows:

- RCRA Metals
  - Arsenic was not detected at concentrations exceeding its Eastern USA background level in the split soil samples E40B01A (2-4) analyzed by both independent laboratories.

E44 - Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building

Two soil samples were collected at soil boring location E44B01A during the October 1998 Delineation Phase II Site Assessment field investigation. The soil samples were analyzed as described on Table 3-4. The analytical results are presented on Table F-4 in Appendix F and are summarized as follows:

- Semivolatile Organic Compounds
  - SVOCs were not detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E44B01A (6-8) and E44B01A (8-10).

3.3.3 Leaching Pools

As previously discussed, the Delineation Phase II Site Assessment leaching pool investigation activities were conducted in October 1998 at the following areas at the site:

- Former Sanitary Leaching Pools West of Plant 5 (E12)
- Unverified Former Sanitary Leaching Pools West of Plant 5 (E13)

An area by area discussion of the Delineation Phase II Site Assessment leaching pool investigation activity findings is presented below.

E12 - Former Sanitary Leaching Pools West of Plant 5

A total of 59 soil samples were collected at soil boring locations E12B05A, E12B07A, E12B09A, E12B10A, E12B12A, E12B15A, E12B18A, E12B29A, E12B30A, E12B31, E12B32, E12B33, E121B34, E12B36 through E12B50, E12B52, E12B53 and E12B55 through E12B57 during the June through August 1998 Initial Phase II Site Assessment field investigation. The soil sample collected at soil boring location E12B05A was split and analyzed by two independent laboratories as described on Table 3-4. The remaining soil samples collected at soil boring locations E12B07A, E12B09A, E12B10A, E12B12A, E12B15A, E12B18A, E12B29A, E12B30A, E12B31, E12B32, E12B33, E121B34, E12B36 through E12B50, E12B52, E12B53 and E12B55 through E12B57 were analyzed as described on Table 3-4. The analytical results are presented on Tables F-6, F-7 and F-7A in Appendix F and are summarized below.

It should be noted that several attempts were made to collect soil samples at soil boring location E12B35 in an effort to target a former sanitary leaching pool. However, due to subsurface obstructions, soil samples could not be collected at this soil boring location. In addition, several attempts were made to locate the former sanitary leaching pools at soil boring locations E12B51 and E12B54. However, based on the results of field instrumentation measurements and visual observations, none of the soil samples collected at these soil boring locations were indicative of the former sanitary leaching pools. Also, soil borings were not advanced at soil boring locations E12B58, E12B59 and E12B60 due to the presence of the Plant 5 sanitary sewer line connection to the Nassau County Sewer System.

- Semivolatile Organic Compounds
  - Phenol was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B36 (11-13), E12B39 (8-10), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10) and E12B47 (8-10).

- 1,4-Dichlorobenzene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B36 (11-13) and E12B44 (8-10).

- 4-Methylphenol was detected at a concentration exceeding NYSDEC TAGM criteria in soil sample E12B36 (11-13).

- 2,4-Dichlorophenol was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B36 (11-13) and E12B44 (8-10).

- Benzo(a)anthracene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B32 (12-14), E12B34 (10-12), E12B34 (14-16), E12B36 (11-13), E12B39 (8-10), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10), E12B47 (8-10) and E12B49 (11-13).

- Chrysene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B32 (12-14), E12B34 (10-12), E12B34 (14-16), E12B36 (11-13), E12B39 (8-10), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10), E12B47 (8-10) and E12B49 (11-13).

- Benzo(b)fluoranthene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B34 (14-16), E12B36 (11-13), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10) and E12B47 (8-10).

- Benzo(k)fluoranthene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B34 (14-16), E12B36 (11-13), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10) and E12B47 (8-10).

- Benzo(a)pyrene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B32 (12-14), E12B34 (10-12), E12B34 (14-16), E12B36 (11-13), E12B37 (10-12), E12B39 (8-10), E12B39 (12-14), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10), E12B47 (8-10), E12B48 (10-12), E12B49 (11-13) and E12B53 (14-16).

- Dibenzo(a,h)anthracene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B34 (14-16), E12B37 (10-12), E12B39 (12-14), E12B41 (10-12), E12B43 (10-12), E12B47 (8-10), E12B49 (11-13) and E12B53 (14-16).

- As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg was not exceeded in the soil samples collected at soil boring locations E12B05A, E12B07A, E12B09A, E12B10A, E12B12A, E12B15A, E12B18A, E12B29A, E12B30A, E12B31, E12B32, E12B33, E121B34, E12B36 through E12B50, E12B52, E12B53 and E12B55 through E12B57. However, the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil samples E12B34

(14-16), E12B36 (11-13), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10) and E12B47 (8-10).

- RCRA Metals

  - Arsenic was detected at a concentration exceeding its Eastern USA background level in soil sample E12B05A (10-12) analyzed by Mitkem Laboratories. In addition, arsenic was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B05A (10-12) and E12B36 (11-13) analyzed by STL Laboratories.

  - Cadmium was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B36 (11-13), E12B41 (10-12), E12B44 (8-10) and E12B52 (12-14).

  - Chromium was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B33 (12-14), E12B36 (11-13), E12B41 (10-12) and E12B44 (8-10).

  - Lead was detected at a concentration exceeding NYSDEC TAGM criteria in soil sample E12B36 (11-13).

  - Mercury was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E12B32 (12-14), E12B33 (8-10), E12B36 (11-13), E12B41 (10-12), E12B43 (10-12), E12B44 (8-10), E12B45 (10-12), E12B46 (10-12), E12B47 (8-10), E12B52 (12-14) and E12B56 (10-12).

  - Selenium was detected at a concentration exceeding NYSDEC TAGM criteria in soil sample E12B36 (11-13).

As discussed in Section 3.2.1, a geophysical survey was conducted in this area in order to locate the Former Sanitary Leaching Pools West of Plant 5. The location of borings E12B50 through E12B57 was selected based upon the findings of the geophysical survey and the review of historical site plans and utility maps.

E13 - Unverified Former Sanitary Leaching Pools West of Plant 5

A total of 37 soil samples were collected at soil boring locations E13B24A, E13B26, E13B27, E13B29, E13B31 through E13B37, E13B41 through E13B46, E13B48 and E13B49 during the June through August 1998 Initial Phase II Site Assessment field investigation. Soil

samples were analyzed as described on Table 3-4. The analytical results are presented on Tables F-6 and F-7 in Appendix F and are summarized below.

It should be noted that several attempts were made to locate the former sanitary leaching pools at soil boring locations E13B28, E13B38, E13B39, E13B40, E13B47 and E13B50. However, based on the results of field instrumentation measurements and visual observations, none of the soil samples collected at these soil boring locations were indicative of the former sanitary leaching pools. In addition, a soil boring was not advanced at soil boring location E13B30 due to the presence of Plant 5 sanitary sewer line connection to the Nassau County Sewer System.

- Semivolatile Organic Compounds

  - Phenol was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B31 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13), E13B44 (10-12) and E13B45 (10-12).

  - 2,4-Dichlorophenol was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B31 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13), E13B44 (10-12) and E13B45 (10-12).

  - Benzo(a)anthracene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13) and E13B37 (11-13).

  - Chrysene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13) and E13B45 (10-12).

  - Benzo(b)fluoranthene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15) and E13B34 (11-13).

  - Benzo(k)fluoranthene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B34 (11-13) and E13B36 (11-13).

  - Benzo(a)pyrene was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B37 (11-13) and E13B46 (10-12).

- Dibenzo(a,h)anthracene was detected at a concentration exceeding NYSDEC TAGM criteria in soil sample E13B29 (8-10).

- As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for individual compounds, the criterion for total SVOCs of 500,000 ug/kg was not exceeded in the soil samples collected at soil boring locations E13B24A, E13B26, E13B27, E13B29, E13B31 through E13B37, E13B41 through E13B46, E13B48 and E13B49. However, the criterion for total carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg was exceeded in soil sample E13B29 (8-10).

• RCRA Metals

- Arsenic was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B32 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13), E13B42 (10-12), E13B44 (10-12), E13B45 (10-12) and E13B49 (11-13).

- Cadmium was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B31 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13) and E13B45 (10-12).

- Chromium was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B32 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13), E13B44 (10-12) and E13B45 (10-12).

- Mercury was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B26 (11-13), E13B29 (8-10), E13B31 (13-15), E13B32 (13-15), E13B33 (13-15), E13B34 (11-13), E13B35 (10-12), E13B37 (11-13), E13B41 (11-13), E13B42 (10-12), E13B43 (10-12), E13B44 (10-12) and E13B45 (10-12).

- Selenium was detected at concentrations exceeding NYSDEC TAGM criteria in soil samples E13B29 (8-10), E13B31 (13-15), E13B32 (13-15), E13B34 (11-13), E13B35 (10-12), E13B36 (11-13), E13B37 (11-13) and E13B45 (10-12).

3.4 Data Validation

Soil samples were collected from the Northrop Grumman Plant 5 site in support of a Phase II field investigation. The analyses were performed in accordance with USEPA SW846 methodologies and NYSDEC Quality Assurance/Quality Control (QA/QC) requirements by Severn Trent Laboratories (STL) and Mitkem Corporation, both subcontractors to Dvirka and

Bartilucci Consulting Engineers. Twenty percent of the sample results in the data packages submitted by STL and Mitkem have been reviewed in accordance with NYSDEC QA/QC requirements yielding a "20% validation." The findings of the validation process are summarized below.

Sample analysis was performed in accordance with the contract specified methods.

Diethylphthalate, di-n-butylphthalate and bis(2-ethylhexyl)phthalate have been qualified as nondetect due to laboratory contamination. That is, the method blank associated with the samples also contained these compounds and the sample concentrations were less than five times the concentration found in the blank.

All sample results are deemed valid and usable for environmental assessment purposes.

Section 4

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the findings of the Initial and Delineation Phase II Site Assessment field investigations discussed in Sections 2 and 3, conclusions and recommendations are presented in this section regarding the need for further investigation and remediation activities, if any, at the Plant 5 property.

To support the conclusions and technical recommendations for remediation, we have relied on the 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 (the NYSDEC).

As discussed in the introduction of the TAGM, the document is designed to provide a basis and procedure for the 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 sites are cleaned up including recommended soil cleanup objectives and Eastern USA background concentrations (both of which are recognized as the NYSDEC TAGM criteria).

The Plant 5 property is not a Federal or State Superfund site, nor is it an RP or 1986 EQBA Title 3 property. However, it is reasonable to establish the NYSDEC TAGM criteria for VOCs and SVOCs and the Eastern USA background levels for metals, as presented in the TAGM, as the levels of cleanup across the site. The proposed revised NYSDEC TAGM criteria for cadmium and chromium (NYSDEC TAGM amendment dated April 1995) were established as the levels of cleanup for the site for these metals.

Also, as presented in the TAGM, in addition to the criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg, the criterion for *total* polycyclic aromatic hydrocarbons (PAHs) of 100,000 ug/kg and the criterion for *total* carcinogenic polycyclic aromatic hydrocarbons (CaPAHs) of 10,000 ug/kg were utilized for comparison.

Samples analyzed for total VOCs/MTBE and/or SVOCs listed in Tables 1 and 2 of Appendix B in the NYSDEC's Spill Technology and Remediation Series (STARS) Memo #1 were compared to the STARS Tables 1 and 2 Human Health guidance values. Also, those samples analyzed for SVOCs listed in Tables 1 and 2 of Appendix B in the NYSDEC's STARS Memo #1 by Toxicity Characteristic Leaching Procedure (TCLP) were compared to the STARS Tables 1 and 2 TCLP Extraction guidance values.

Although there is no NYSDEC TAGM criterion for glycols (i.e., ethylene glycol and propylene glycol), discussions with NYSDEC representatives indicate that a level of 50,000 ug/kg has been utilized. The NYSDEC TAGM criterion for cyanide is identified as "SB" (site background) but there are no Eastern USA background concentration levels for cyanide. Therefore, the NYSDEC "Contained-In" action level of 1,600 mg/kg for total cyanide has been utilized.

In addition, it should be noted that based on recent discussions with NYSDEC representatives during September 1998, the NYSDEC has relied on a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Although the sample results were initially compared to the TAGM criterion for mercury, the guidance value of 10 mg/kg for unrestricted land use was utilized to determine if additional investigation or remediation was required at the Plant 5 site.

It is important to note that NGC is discussing alternative soil cleanup criteria with the NYSDEC for the Plant 5 site. The alternative criteria, which still support unrestricted land use, are based on commonly accepted criteria, such as the United States Environmental Protection Agency (USEPA) Soil Screening Levels (SSLs), that the NYSDEC has utilized on several RCRA corrective action sites. Therefore, if a new set of criteria are agreed upon with the NYSDEC, the recommendations presented in this report will be revised accordingly.

The analytical results of the Initial and Delineation Phase II Site Assessment sampling programs are summarized in comparison to the appropriate NYSDEC TAGM criteria and Eastern USA background levels on Tables 4-1 through 4-4. These summary tables are included

at the end of this section of the report. The tables indicate only those constituents of concern that were detected in the samples at concentrations that were in excess of the NYSDEC TAGM criteria and Eastern USA background levels. Tables 4-1 and 4-2 summarize the initial Phase II results of the samples from interior and exterior areas of environmental concern (areas of concern or "AOCs") at the Plant 5 site. Tables 4-3 and 4-4 summarize the delineation Phase II results of the samples from interior and exterior AOCs at the site.

Conclusions and recommendations for no further action, additional investigation and/or remedial activities at AOCs are presented in Sections 4.1, 4.2 and 4.3. In addition, a summary of recommendations for Resource Conservation and Recovery Act (RCRA) remediation and USEPA Underground Injection Control (UIC) Program closure are shown in Tables 4-5 and 4-6 for interior/exterior AOCs and sanitary leaching pool AOCs, respectively. AOCs that are recommended for RCRA remediation and UIC closure are illustrated in Figure 4-1. Tables 4-5 and 4-6 and Figure 4-1 are also included at the end of this section of the report.

4.1 Interior Phase II Investigation

4.1.1 Former Alodine Room (I1)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I01B01, I01B02, I01B03 and I01B04 during the initial Phase II program indicated that RCRA metals were not detected at concentrations exceeding the TAGM criteria. Therefore, based on the results of these soil samples, further investigation or remediation of soil beneath the Former Alodine Room is not warranted.

However, based on discussions with NGC personnel, it was suspected that the concrete floor could be impacted, and therefore, it was recommended that the concrete floor in the Alodine Room be investigated as part of the delineation Phase II program. It is important to note that concrete samples were not originally collected from the Former Alodine Room because it

was believed that the soil immediately beneath the concrete slab would have to be remediated and the concrete slab would be demolished for off-site disposal. Therefore, as described in Table 3-1, two concrete core samples were collected during the delineation Phase II program and analyzed for RCRA metals.

As discussed in Section 3.0, the analytical results of samples taken from concrete coring locations I01C01, I01C02 and I01B03 during the delineation Phase II program indicate that RCRA metals were detected at concentrations exceeding the PCA study reported ranges. Mercury was detected outside of the PCA study reported range of <0.0002 to 0.006 mg/kg in concrete core sample I01C01. In addition, cadmium was detected outside of the PCA study reported range of 0.051 to 0.49 mg/kg in concrete core samples I01C01 and I01C02. Of particular importance, chromium was detected outside of the PCA study reported range of 0.051 to 0.49 mg/kg in concrete core samples I01C01, I01C02 and I01C03.

Recommendations

Concrete core samples I01C01 (collected within the bermed area) and I01C02 (collected in the floor area) exhibited elevated levels of chromium of 153 mg/kg and 3,020 mg/kg. Based on discussions with NGC personnel, it is reasonable to assume that the majority of the concrete floor within the former Alodine room is impacted by chromium, and therefore, it is recommended that the entire floor be demolished and properly removed for off-site disposal. Because soil sample results obtained from the initial Phase II program did not indicate any TAGM exceedances, remediation of the soil beneath the concrete floor is not warranted.

4.1.2 Paint Tunnel Room (I2)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I02B01 and I02B02 during the initial Phase II program indicate that VOCs, SVOCs,

SVOCs by TCLP and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Paint Tunnel Room is not warranted.

4.1.3 Hydraulic Pump Room (I3)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I03B01 during the initial Phase II program indicate that SVOCs and SVOCs by TCLP were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Hydraulic Pump Room is not warranted.

4.1.4 Former Drop Quench Oven Area (I4)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I04B01 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criterion for this compound in soil samples I04B01 (4-6) and I04B01 (6-8). In

addition, phenol was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I04B01 (4-6). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Drop Quench Oven Area is not warranted.

4.1.5 Condensate Pit (I5)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I05B01 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I05B01 (7.5-9.5). In addition, the criterion for *total* CaPAHs of 10,000 ug/kg was also exceeded in soil sample I05B01 (7.5-9.5). Mercury was also detected at a concentration exceeding the TAGM criterion in soil sample I05B01 (7.5-9.5).

Recommendations

Based on the results of the initial Phase II program samples, it appears that the soil located 0 to 2.5 feet below the bottom of the condensate pit, or 7.5 to 10 feet below ground (floor) surface (bgs), is impacted and remediation appears to be warranted. Because the condensate pit contains an earthen bottom, its closure is regulated under the USEPA Underground Injection Control (UIC) Program. Therefore, all closure activities should be

conducted in accordance with the UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.1.6 Former Machine Shop (I6)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I06B01, I06B02 and I06B03 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)pyrene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I06B03 (2-4). In addition, dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I06B01 (2-4) and I06B03 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Machine Shop is not warranted.

4.1.7 Former Machine Shop (I7)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I07B01, I07B02 and I07B03 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. SVOCs by TCLP were not

detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)pyrene, dibenzo(a,h)anthracene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I07B03 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criteria for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Mercury was also detected at a concentration exceeding the TAGM criterion in soil sample I07B03 (2-4).

Recommendations

Although there was a minor exceedance of the TAGM criteria for mercury of 0.21 mg/kg in soil sample I07B03 (2-4), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation in the Former Machine Shop is not warranted.

4.1.8 Machine Shop (I8)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I08B01, I08B02, I08B03 and I08B04 during the initial Phase II program indicate that VOCs, SVOCs, and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Machine Shop is not warranted.

4.1.9 CNC/RAM Room (I9)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I09B01 during the initial Phase II program indicate that VOCs, SVOCs, and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the CNC/RAM Room is not warranted.

4.1.10 Storage Area for SBMS (I10)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I10B01 and I10B02 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, chrysene, benzo(a)pyrene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I10B01 (1-3) and I10B02 (1-3). In addition, benzo(a)pyrene was detected

at a concentration exceeding the NYSDEC TAGM criterion in soil samples I10B01 (1-3), I10B02 (1-3) and I10B02 (3-5). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Storage Area for SBMS is not warranted.

4.1.11 Forms and Central Storage Area (I11)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I11B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I11B01 (0-2) and I11B01 (2-4). In addition, dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I11B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Forms and Central Storage Area is not warranted.

4.1.12 Former Model Shop (I12)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I12B01 and I12B02 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene and chrysene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I12B02 (2-4). In addition, benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I12B01 (0-2), I12B01 (2-4) and I12B02 (2-4). Also, dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I12B02 (2-4) and phenol was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I12B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Model Shop is not warranted.

4.1.13 Former Model Shop Paint Spray Room (I13)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I13B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1,

benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I13B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Model Shop Paint Spray Room is not warranted.

4.1.14 Former Router Room (I14)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I14B01 and I14B02 during the initial Phase II program indicate that VOCs and SVOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. Arsenic was detected at a concentration of 12.4 mg/kg in sample I14B02 (0-2) which exceeded the TAGM criterion of 12 mg/kg.

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location I14B02. As described in Table 3-1, a confirmatory sample was collected from the previous soil sample interval I14B02 (0-2) and analyzed for arsenic by two independent laboratories during the delineation Phase II program. As discussed in Section 3.0, the analytical results of samples taken from soil boring location I14B02A during the delineation Phase II program indicate that arsenic was not detected at concentrations exceeding the TAGM criteria. Therefore, because the arsenic concentrations did not exceed the TAGM criterion in the confirmation sample, the delineation soil samples collected from the soil borings located 7 feet north, south, east and west of soil boring location I14B02 were not analyzed.

Recommendations

Based on the results of the delineation (confirmation) Phase II program samples, it appears that further investigation or remediation at the Former Router Room is not warranted.

4.1.15 Caged Storage Area (I15)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I15B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I15B01 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Caged Storage Area is not warranted.

4.1.16 Model Airplane Shop (I16)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I16B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I16B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Model Airplane Shop is not warranted.

4.1.17 Sheet Metal Storage and Shearer Area (I17)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I17B01 during the initial Phase II program indicate that SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Sheet Metal Storage and Shearer Area is not warranted.

4.1.18 High Voltage Crew Area (I18)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I18B01, I18B02 and I18B03 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B01 (7-9). Also, benzo(a)anthracene, chrysene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B02 (0-2). In addition, benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B02 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil sample I18B01 (7-9).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location I18B01. As described in Table 3-1, soil samples were collected from the 9 to 11-foot and 11 to 13-foot intervals at boring location I18B01 during the delineation Phase II program and analyzed for SVOCs including those constituents listed in STARS Table 2.

As discussed in Section 3.0, the analytical results of samples taken from soil boring location I18B01A during the delineation Phase II program, indicate that SVOCs were detected at

concentrations exceeding the TAGM criteria. As shown in Table 4-3, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B01A (9-11). In addition, phenol, 2-methlyphenol, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I18B01A (11-13). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded in soil samples I18B01A (9-11) and I18B01A (11-13). However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil samples I18B01A (9-11) and I18B01A (11-13).

Recommendations

Based on the results of the initial and delineation Phase II programs, remediation is warranted at soil boring location I18B01. Impacted soil has been identified to a depth of at least 13 feet bgs. Because the dry well at soil boring I18B01 contains an earthen bottom, the final closure of the dry well is regulated under the USEPA UIC Program. Therefore, all closure activities should be conducted in accordance with the UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.1.19 Former Machine Shop (I19)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I19B01 during the initial Phase II program indicate that VOCs, SVOCs, and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Machine Shop is not warranted.

4.1.20 Electricians Storage Room (I20)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I20B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples I20B01 (0-2) and I20B01 (2-4). In addition, benzo(a)anthracene and chrysene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample I20B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Electricians Storage Room is not warranted.

4.1.21 Generator Room (I21)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I21B01 and I21B02 during the initial Phase II program indicate that VOCs and SVOCs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1, barium, cadmium and mercury were detected at concentrations exceeding the TAGM criteria in soil sample I21B02 (3-5). In addition, mercury was detected at a concentration exceeding the TAGM criterion in soil sample I21B01 (3.5-5.5).

Recommendations

Based on the results of the initial Phase II program, it appears that the soil/sediment is impacted to a depth of at least 6 feet bgs at each boring location. Soil borings I21B01 and I21B02 were advanced within tile drain pipes located at the bottom of air compressor units. Because these tile drain pipes each have an earthen bottom, the closure of these drains is regulated under the USEPA UIC Program. Therefore, all closure activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.1.22 Blue Room (I22)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I22B01, I22B02, I22B03, I22B04, I22B05, I22B06, I22B07, I22B08 and I22B09 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the

NYSDEC TAGM criteria in soil sample I22B01 (3.5-5.5). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Cadmium was detected at a concentration exceeding the TAGM criterion in soil sample I22B01 (3.5-5.5).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location I22B01 during the delineation Phase II program. As described in Table 3-1, delineation samples were collected at previous soil sample location I22B01 from the 5.5 to 7.5-foot and 7.5 to 9.5-foot intervals and analyzed for cadmium. Based on the results of the delineation samples, horizontal delineation soil samples were collected from soil borings located 7 feet north, south, east and west of soil boring location I22B01. Soil samples were collected from the 1.5 to 3.5-foot, 3.5 to 5.5-foot, 5.5 to 7.5-foot and 7.5 to 9.5-foot intervals bgs and analyzed for cadmium. The 7.5 to 9.5-foot samples were held and analyzed based on the results of the 5.5 to 7.5-foot interval samples. Because there were no TAGM exceedances in the soil samples collected from the borings located at a distance of 7 feet, soil samples collected from soil borings located 14 feet north, south, east and west of soil boring location I22B01 were not analyzed.

As discussed in Section 3.0, the analytical results of samples taken from soil boring locations I22B01A, I22B0N7, I22B01S7, I22B01E7 and I22B01W7 during the delineation Phase II program indicate that cadmium was not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial and delineation Phase II programs, soil is impacted to a depth of at least 6 feet bgs at soil boring I22B01 and therefore, remediation is warranted. Because the air/electric pit at soil boring I22B01 contains an earthen bottom, final closure of the pit is regulated under the USEPA UIC Program. Therefore, all closure activities should be

conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.1.23 Facilities Maintenance Shop (I23)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I23B01 during the initial Phase II program indicate that VOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-1, phenol was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I23B01 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Facilities Maintenance Shop is not warranted.

4.1.24 GOM Storage Area (I24)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I24B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the GOM Storage Area is not warranted.

4.1.25 Laborers Storage Room (I25)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I25B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Laborers Storage Room is not warranted.

4.1.26 Former Paint Tunnel (I26)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I26B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Former Paint Tunnel is not warranted.

4.1.27 OAO Hangar (I27)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I27B01, I27B02, I27B03, I27B04 and I27B05 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1, benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I27B04 (1-3), I27B04 (3-5), I27B05 (1-3) and I27B05 (3-5). In addition, dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I27B04 (3-5) and I27B05 (3-5). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Also, mercury was detected at concentrations exceeding the TAGM criterion in soil samples I27B01 (1-3), I27B01 (3-5) and I27B04 (1-3), and chromium was detected at concentrations exceeding the TAGM criterion in soil samples I27B04 (1-3), I27B05 (1-3) and I27B05 (3-5). In addition, cadmium was detected at concentrations exceeding the TAGM criterion in soil samples I27B05 (1-3) and I27B05 (3-5).

Although there were minor exceedances of the TAGM criterion for mercury of 0.32 mg/kg and 0.38 mg/kg in soil samples I27B01 (1-3) and I27B01 (3-5), respectively, further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location I27B01 is not warranted.

Similarly, there were minor exceedances of the TAGM criteria for mercury and chromium of 0.24 mg/kg and 51.4 mg/kg, respectively, in sample I27B04 (1-3). However, the NYSDEC has utilized guidance values for mercury and chromium of 10 mg/kg and 150 mg/kg, respectively, which support a recommendation for unrestricted land use. Utilizing these commonly accepted guidance values and since the sample, I27B04 (3-5), collected from the interval immediately beneath I27B04 (1-3) did not exhibit any TAGM exceedances, it appears that further investigation or remediation is not warranted.

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location I27B05 during the delineation Phase II program. As described in Table 3-1, delineation samples were collected during the delineation Phase II program at previous soil sample location I27B05 from the 5 to 7-foot and 7 to 9-foot intervals and analyzed for cadmium. Based on the results of the delineation samples, horizontal delineation soil samples were collected from soil borings located 7 feet north, east and west of soil boring location I27B05. A soil boring was not able to be advanced to the south due the proximity to an interior wall. Soil samples were collected from the 1 to 3-foot, 3 to 5-foot, 5 to 7-foot and 7 to 9-foot intervals bgs and analyzed for cadmium. The 5 to 7-foot and 7 to 9-foot samples were held and analyzed based on the results of the 3 to 5-foot interval samples. In addition, soil samples were collected from soil borings located 14 feet north, east and west of soil boring location I27B01. Soil samples were collected from the 1 to 3-foot, 3 to 5-foot, 5 to 7-foot and 7 to 9-foot intervals bgs and analyzed for cadmium.

As discussed in Section 3.0, the analytical results of samples taken from soil boring locations I27B05A, I27B05N7, I27B05N14, I27B05E7, I27B05E14 and I27B05W7 during the delineation Phase II program indicate that SVOCs and RCRA metals were detected at concentrations exceeding the TAGM criteria. As shown in Table 4-3, benzo(a)pyrene was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I27B05N14 (5-7), I27B05E14 (5-7) and I27B05E14 (7-9). In addition, phenol was detected at concentrations exceeding the NYSDEC TAGM criterion in soil samples I27B05N14 (5-7), I27B05N14 (7-9) and I27B05E14 (7-9). Although there were SVOCs detected at concentrations that exceeded the

NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded in soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9).

Cadmium was detected at concentrations exceeding the TAGM criterion in soil samples I27B05A (5-7), I27B05A (7-9), I27B05N7 (1-3), I27B05N7 (3-5), I27B05N7 (5-7), I27B05N7 (7-9), I27B05N14 (1-3), I27B05N14 (3-5), I27B05N14 (5-7), I27B05N14 (7-9), I27B05E7 (1-3), I27B05E7 (7-9), I27B05E7 (3-5), I27B05E14 (1-3), I27B05E14 (5-7) and I27B05E14 (7-9). In addition, chromium was detected at concentrations exceeding the TAGM criterion in soil samples I27B05N14 (5-7), I27B05N14 (7-9), I27B05E14 (5-7) and I27B05E14 (7-9). Also, mercury was detected at concentrations exceeding the TAGM criterion in soil samples I27B05N14 (5-7) and I27B05N14 (7-9).

Recommendations

Based on the results of the initial and delineation Phase II programs, remediation is warranted at boring location I27B05. The sample results indicate that impacted soils extend to at least 9 feet bgs at the following boring locations: I27B05A, I27B05N7, I27B05N14, I27B05E7 and I27B05E14. Therefore, it is recommended that soil be excavated from an area extending 7 feet north of boring I27B05N14, 7 feet east of boring I27B05E14 and 7 feet west of boring I27B05A. Soil within this area should be excavated to a depth of at least 14 feet bgs for proper off-site disposal. It is important to note that the complete vertical extent of impacted soil could not be determined due to drilling constraints in this area. It should also be noted that the "southern" extent of impacted soil could not be determined because an adjacent wall and active computer room prevented soil borings from being advanced. It is recommended that, after NGC deactivates these portions of the OAO Hanger, in-situ endpoint samples (collected just before excavation) should be collected in an attempt to better define the limits of excavation. Endpoint samples should also be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

4.1.28 GOM Storage Area/Former Shuttle Wing Hangar (I28)

Conclusions

During visual inspection, the floor drains located in the utility trenches of the GOM Storage Area/Former Shuttle Wing Hangar were observed to have earthen bottoms. As a result, NGC decided not to conduct soil sampling as originally planned.

Recommendations

As discussed in Section 2.0, the closure of the floor drains located in the GOM Storage Area/Former Shuttle Wing Hangar utility trenches should be conducted in accordance with the USEPA UIC Program.

4.1.29 GSSC Storage Area (I29)

Conclusions

During visual inspection, the floor drains located in the utility trenches of the GSSC Storage Area were observed to have earthen bottoms. As a result, NGC decided not to conduct soil sampling as originally planned.

Recommendations

As discussed in Section 2.0, the closure of the floor drains located in the GSSC Storage Area utility trenches should be conducted in accordance with the USEPA UIC Program.

4.1.30 Liquid Chiller Room (I30)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I30B01 and I30B02 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Liquid Chiller Room is not warranted.

4.1.31 Wyle Chamber (I31)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from two concrete coring locations I31B02 and I31B03 during the initial Phase II program indicate that PCBs were not detected at elevated levels.

In addition, as shown in Section 2.0, eight soil samples were collected at soil boring locations I31B01, I31B02, I31B03 and I31B04 during the initial Phase II program. The sample results indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Wyle Chamber is not warranted.

4.1.32 High Bay 1 (I32)

Conclusions

During visual inspection, floor drains were observed in the utility trenches of High Bay 1. As a result, NGC decided not to conduct soil sampling as originally planned.

Recommendations

As discussed in Section 2.0, the closure of the floor drains located in the High Bay 1 utility trenches should be conducted in accordance with the USEPA UIC Program.

4.1.33 Paint Mixing Booth (I33)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I33B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Paint Mixing Booth is not warranted.

4.1.34 Paint Tunnel (I34)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I34B01 during the initial Phase II program indicate that VOCs and SVOCs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1, arsenic was detected at a concentration exceeding the TAGM criterion in soil sample I34B01 (2-4).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location I34B01 during the delineation Phase II program. As described in Table 3-1, confirmation samples were collected at previous soil sample location I34B01 from the 2 to 4-foot interval bgs. The soil samples were analyzed for arsenic by two independent laboratories. Because the confirmation samples did not exhibit any TAGM exceedances, delineation soil samples collected from soil borings located 7 feet north, east and west of soil boring location I34B01 were not analyzed.

Recommendations

Based on the results of the initial and delineation (confirmation) Phase II programs, it appears that further investigation or remediation at the Paint Tunnel is not warranted.

4.1.35 Optics Laboratory (I35)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I35B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1, benzo(a)pyrene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I35B01 (6-8). Although there were SVOCs detected at concentrations that exceeded the NYSDEC

TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. In addition, mercury was detected at a concentration exceeding the TAGM criterion in soil sample I35B01 (6-8).

Recommendations

Although there was an exceedance of the TAGM criterion for mercury of 5.7 mg/kg in soil sample I35B01 (6-8), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, it appears that further investigation or remediation is not warranted at this time.

4.1.36 Paint Spray Area (I36)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations I36B01 and I36B02 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-1, phenol was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample I36B02 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. In addition, mercury was detected at a concentration exceeding the TAGM criterion in soil sample I36B02 (2-4).

Recommendations

Although there was an exceedance of the TAGM criterion for mercury of 0.8 mg/kg in soil sample I36B01 (2-4), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg

that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location I36B01 is not warranted.

4.1.37 Paint and Chemical Storage Room (I37)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I37B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in the Paint and Chemical Storage Room is not warranted.

4.1.38 Well House No. 5 (I38)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I38B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in Well House No. 5 is not warranted.

4.1.39 Well House No. 6 (I39)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location I39B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation in Well House No. 6 is not warranted.

4.2 Exterior Phase II Investigation

4.2.1 Former Dry Well within Drainage Trench Along Western Property Boundary (E1)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E01B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Dry Well within the Drainage Trench along Western Property Boundary is not warranted.

4.2.2 Dry Well at West End of Drainage Trench A Along Northern Property Boundary (E2)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E01B01 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E02B01 (10-12). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Dry Well at West End of Drainage Trench along Northern Property Boundary is not warranted.

4.2.3 Dry Well Near Center of Drainage Trench Along Northern Property Boundary (E3)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E03B01 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(a)pyrene and

dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E03B01 (11-13). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Mercury was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E03B01 (19-21).

Recommendations

Although there was an exceedance of the TAGM criterion for mercury of 0.26 mg/kg in soil sample E03B01 (19-21), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E03B01 is not warranted.

4.2.4 Dry Well North of Plant 5 Kitchen along Former Taxiway (E4)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E04B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E04B01 (15-17). As indicated above, although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil sample E04B01

(15-17). Mercury was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E04B01 (15-17).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E04B01 during the delineation Phase II program. As described in Table 3-2, delineation samples were collected at previous soil sample location E04B01 from the 17 to 19-foot and 19 to 21-foot intervals bgs and analyzed for SVOCs including those constituents listed in STARS Table 2. Although mercury was detected at a concentration exceeding the TAGM criterion, further delineation analysis was not warranted because the NYSDEC guidance value for mercury of 10 mg/kg for unrestricted land use was not exceeded.

As discussed in Section 3.0, the analytical results of samples taken from soil boring location E04B01A during the delineation Phase II program indicate that SVOCs were detected at concentrations exceeding the TAGM criteria. As shown in Table 4-4, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E04B01A (19-21). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded in soil sample E04B01A (19-21).

Recommendations

Based on the results of the initial and delineation Phase II programs, soil/sediment is impacted to a depth of at least 17 feet bgs at the Dry Well North of Plant 5 Kitchen along the Former Taxiway and therefore, remediation is warranted. It is important to note that because this active storm water dry well contains impacted soil, the USEPA has historically determined that closure of the dry well in this case is regulated by the UIC Program. Therefore, all closure activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.5 Dry Well Northwest of Plant 5 North Building Entrance Along Former Taxiway (E5)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E05B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E05B01 (18-20). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Mercury was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E05B01 (18-20).

Recommendations

Although there was an exceedance of the TAGM criterion for mercury of 0.24 mg/kg in soil sample E05B01 (18-20), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E05B01 is not warranted.

4.2.6 Former Dry Well on Former Taxiway (E6)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E06B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Dry Well on Former Taxiway is not warranted.

4.2.7 Dry Well Near Northeast Corner of Plant 5 Building (E7)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E07B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E07B01 (11-13). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil sample E07B01 (11-13). Arsenic was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E07B01 (11-13).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E07B01 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E07B01 from the 13 to 15-foot interval bgs and analyzed for SVOCs including those constituents listed in STARS Table 2 and arsenic.

As discussed in Section 3.0, the analytical results of samples taken from soil boring location E07B01A (13-15) during the delineation Phase II program indicate that SVOCs and arsenic were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial and delineation Phase II programs, remediation is warranted at the Dry Well Near the Northeast Corner of Plant 5 Building. The sample results indicate that impacted soils are present at a depth of 11 to 13 feet bgs. It is important to note that because this active storm water dry well contains impacted soil, the USEPA has historically determined that closure of the dry well in this case is regulated by the UIC Program. Therefore, all closure activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.8 Dry Well West of Plant 25 and Former Wind Tunnel (E8)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E08B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Dry Well West of Plant 25 and Former Wind Tunnel is not warranted.

4.2.9 Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1 (E9)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E09B01, E09B02, E09B03, E09B04 and E09B05 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B02 (3-5), E09B03 (2-4), E09B04 (2-4) and E09B05 (2-4). In addition, phenanthrene, fluoranthene and pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E09B05 (2-4). Also, the criterion for *total* SVOCs of 500,000 ug/kg was exceeded in soil sample E09B05 (2-4) and the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil samples E09B02 (3-5), E09B03 (2-4), E09B04 (2-4) and E09B05 (2-4).

Arsenic, cadmium, chromium, lead, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E09B02 (3-5) and E09B04 (2-4). In addition, mercury was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E09B03 (2-4) and barium was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E09B04 (2-4). Arsenic, chromium, lead, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E09B05 (2-4).

Recommendations

Based on the results of the initial Phase II program samples, impacted soil is present in four of the five air/electric pits at boring locations E09B02, E09B03, E09B04 and E09B05. Impacted soil was found at boring locations E09B02, E09B03, E09B04 and E09B05 to depths of at least 5, 4, 4 and 4 feet, respectively, and therefore, remediation is warranted. Since all of the five air/electric pits contain earthen bottoms, their final closure is regulated by the USEPA UIC Program. Therefore, all closure activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.10 Air/Electric Pits in Court Yard "A" (E10)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E10B01 and E10B02 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene and phenol were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E10B02 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil sample E10B02 (2-4). Cadmium and chromium were also detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E10B02 (2-4).

Recommendations

Based on the results of the initial Phase II program samples, impacted soil is present to a depth of at least 4 feet bgs at the air/electric pit located at boring location E10B02. Therefore,

remediation is warranted at this location. Since the two air/electric pits (E10B01 and E10B02) contain earthen bottoms, their closure is regulated by the USEPA UIC Program. Although the air electric pit at boring location E10B01 was not shown to contain impacted soil, its closure is also regulated by the UIC Program. Therefore, all closure activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.11 Recharge Basins (E11)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E11BN01, E11BN02, E11BS01 and E11BS02 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E11BN02 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Recharge Basins is not warranted.

4.2.12 Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5 (E14)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E14B01 and E14B02 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Sanitary Wastewater Disposal System Settling Tanks West of Plant 5 is not warranted.

4.2.13 Former Sanitary Wastewater Disposal System Wet Well West of Plant 5 (E15)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E01B01 during the initial Phase II program indicate that VOCs, SVOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, arsenic was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E15B01 (22-24).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E15B01 during the delineation Phase II program. As described in Table 3-2, a confirmation sample was collected at previous soil sample location E15B01 from the 22 to 24-foot interval bgs and analyzed for arsenic by two independent laboratories. Because

the confirmation samples did not exhibit any TAGM exceedances, delineation samples collected from the same boring location at the 24 to 26-foot and 26 to 28-foot intervals were not analyzed.

As discussed in Section 3.0, the analytical results of samples taken from soil boring location E15B01A during the delineation (confirmation) Phase II program, that were split and analyzed by two independent laboratories, indicate that arsenic was not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial and delineation (confirmation) Phase II program samples, it appears that further investigation or remediation at the Former Sanitary Wastewater Disposal System Wet Well West of Plant 5 is not warranted.

4.2.14 Former Sanitary Leaching Pool West of Plant 25 and Former Wind Tunnel (E16)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E16B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Sanitary Leaching Pool West of Plant 25 and the Former Wind Tunnel is not warranted.

4.2.15 Cesspool North of Former Pilots Ready Room Building (E17)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E17B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, the soil/sediment at the bottom of the Cesspool North of Former Pilots Ready Room Building did not appear to be impacted. However, it is important to note that this cesspool should be closed in accordance with the USEPA UIC Program.

4.2.16 Former Gasoline Pump House (E18)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E18B01 and E18B02 during the initial Phase II program indicate that RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, total VOCs were not detected at concentrations exceeding the STARS Table 1 Human Health guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Gasoline Pump House is not warranted.

4.2.17 Former Sanitary Leaching Pools Converted to Dry Wells (E19)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E19B01 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E19B01 (12-14). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. In addition, cadmium, chromium, mercury and selenium were detected at concentrations exceeding the NYSDEC TAGM criteria in sample E19B02 (10-12).

Recommendations

Based on the results of the initial and delineation Phase II programs, remediation is warranted at the Former Sanitary Leaching Pool Converted to a Dry Well at soil boring E19B02. The sample results indicate that impacted soils extend to a depth of at least 12 feet bgs. It is important to note that because this active storm water dry well contains impacted soil, the USEPA has historically determined that closure of the dry well in this case is regulated by the UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.18 Former Cold Flow Test Facility Waste Oil UST (E20)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E20B01 and E20B02 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Cold Flow Test Facility Waste Oil UST is not warranted.

4.2.19 Former Cold Flow Test Facility Spillage Collection UST (E21)

Conclusions

As discussed in Section 2.0, the Former Cold Flow Test Facility Spillage Collection UST was discovered during the advancement of soil boring E21B01 during the initial Phase II program. As a result, soil samples were not collected at this soil boring location because it was determined the UST would be investigated as part of a separate program.

As discussed in Section 2.0, a separate report prepared by D&B entitled, "Underground Storage Tank Closure Program - Plant 5 Spillage Collection Tank," dated December 10, 1998, addresses the program that was conducted for the removal of the Former Cold Flow Test Facility Spillage Collection UST. The Spillage Collection UST Closure Report documented that the UST was properly removed and closed according to all applicable federal, state and local regulations.

Recommendations

Based on the above, further investigation or remediation at the Former Cold Flow Test Facility Spillage Collection UST is not warranted.

4.2.20 Former Cold Flow Test Facility Sanitary Leaching Pool (E22)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E22B01 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E22B01 (8-10). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Cold Flow Test Facility Sanitary Leaching Pool is not warranted.

4.2.21 Former Cold Flow Test Facility Transformer Substation Trench Drain (E23)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E23B01 during the initial Phase II program indicate that PCBs were not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Cold Flow Test Facility Transformer Substation Trench Drain is not warranted.

4.2.22 Former Oil and Gravel Surfaced Parking Areas West of Structural Test Hangars (E24)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E24B01, E24B02, E24B03, E24B04, E24B05 and E24B06 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, dibenzo(a,h)anthracene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E24B03 (2-4). Although there was one SVOC detected at a concentration that exceeded the NYSDEC TAGM criterion for an *individual* compound, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Oil and Gravel Surfaced Parking Areas West of Structural Test Hangars is not warranted.

4.2.23 Former Oil and Gravel Surfaced Parking Areas West of Former Test Platform (E25)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E25B01 and E25B02 during the initial Phase II program indicate that VOCs, SVOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Oil and Gravel Surfaced Parking Areas West of Former Test Platform is not warranted.

4.2.24 Former Ash Bunker West of Former Boiler Room (E26)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E26B01 during the initial Phase II program indicate that SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Ash Bunker West of Former Boiler Room is not warranted.

4.2.25 Former Blow-off Pit South of Former Boiler Room (E27)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E27B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Blow-off Pit South of Former Boiler Room is not warranted.

4.2.26 Former Maintenance Garage (E28)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location locations E28B01 and E28B02 during the initial Phase II program indicate that VOCs, SVOCs, pesticides, herbicides and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Maintenance Garage is not warranted.

4.2.27 Transformer Pad Adjacent to Former Maintenance Garage (E29)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E29B01 and E29B02 during the initial Phase II program indicate that PCBs were not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Transformer Pad Adjacent to Former Maintenance Garage is not warranted.

4.2.28 Condensate Vault North of Kitchen (E30)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E30B01 during the initial Phase II program indicate that VOCs, SVOCs and RCRA metals were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Condensate Vault North of the Kitchen is not warranted.

4.2.29 Catch Basin in Court Yard "A" Near CAA (E31)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E31B01 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)pyrene and dibenzo(a,h)anthracene was detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E31B01 (8-10). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Catch Basin in Court Yard "A" Near the CAA is not warranted.

4.2.30 Transformer Pad at Well House No. 5 (E32)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E32B01 during the initial Phase II program indicate that PCBs were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Transformer Pad at Well House No. 5 is not warranted.

4.2.31 Former Gasoline UST at Well House No. 5 (E33)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E33B01 during the initial Phase II program indicate that RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, total VOCs were not detected at concentrations exceeding the STARS Table 1 Human Health guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Gasoline UST at Well House No. 5 is not warranted.

4.2.32 Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House (E34)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E34B01 during the initial Phase II program indicate that RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, total VOCs were not detected at concentrations exceeding the STARS Table 1 Human Health guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Abandoned Gasoline UST Formerly Associated with Fire Protection Pump House is not warranted.

4.2.33 Areas of Stressed Vegetation (E35)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E35B01 and E35B02 during the initial Phase II program indicate that VOCs, pesticides, herbicides and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene and benzo(a)pyrene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E35B01 (0-2) and E35B01 (2-4). In addition, chrysene was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E35B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Arsenic was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E35B01 (0-2).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E35B01 during the delineation Phase II program. As described in Table 3-2, confirmation samples were collected at previous soil sample location E35B01 from the 0 to 2-foot interval and analyzed for arsenic by two independent laboratories. Based on the results of the confirmation samples, horizontal delineation soil samples were collected from soil borings located 7 feet south, east and west of soil boring location E35B01. The north boring was not able to be advanced due to the proximity of the building wall. Soil samples were collected from the 0 to 2-foot and 2 to 4-foot intervals bgs and analyzed for arsenic. Soil samples were also collected from soil borings located 14 feet south, east and west of soil boring location E35B01. Soil samples were collected from the 0 to 2-foot and 2 to 4-foot intervals bgs and analyzed for arsenic.

As discussed in Section 3.0, the analytical results of samples taken from soil boring locations E35B01S7, E35B01E7, E35B01W7 and E35B01W14 during the delineation Phase II

program indicate that arsenic was detected at concentrations exceeding the TAGM criterion. As shown in Table 4-4, arsenic was detected at concentrations exceeding the TAGM criterion in soil samples E35B01W7 (0-2), E35B01W7 (2-4) and E35B01W14 (2-4).

Recommendations

Based on the results of the initial and delineation Phase II programs, remediation is warranted at boring location E35B01. The sample results indicate that impacted soils extend to a depth of at least 4 feet bgs at boring locations E35B01W7 and E35B01W14. Similarly, impacted soils appear to extend to a depth of at least 2 feet bgs at boring location E35B01. Therefore, it is recommended that soil be excavated from an area extending 7 feet west of boring E35B01W14, 7 feet east of boring E35B01 and 7 feet south of boring E35B01. The northern boundary of excavation is defined by the existing building wall. Soil within this area should be excavated to a depth of at least 4 feet bgs or the maximum depth allowed due to the proximity to underground utilities. The vertical extent of impacted soil could not be determined during the delineation program due to the presence of several underground utilities (i.e., water and electric lines) which restricted the depth of soil borings to 4 feet bgs. This restriction will limit the practical depth of excavation during the remediation program. Endpoint samples should be collected after excavation and analyzed for arsenic by Method 6010. The excavated soil should be properly disposed of off-site.

4.2.34 Concrete Foundation of Former Test Platform (E36)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E36B01 and E36B02 during the initial Phase II program indicate that VOCs, SVOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, arsenic was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E36B01 (0-2).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E36B01 during the delineation Phase II program. As described in Table 3-2, confirmation samples were collected at previous soil sample location E36B01 from the 0 to 2-foot interval and analyzed for arsenic by two independent laboratories. Because the confirmation samples did not exhibit any TAGM exceedances, delineation soil samples collected from soil borings located 7 feet and 14 feet north, south, east and west of soil boring location E36B01 were not analyzed.

Recommendations

Based on the results of the initial and delineation (confirmation) Phase II programs, further investigation or remediation at the Concrete Foundation of the Former Test Platform is not warranted.

4.2.35 Former Drum Storage Area near Facilities Maintenance Shop (E37)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E37B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Drum Storage Area Near the Facilities Maintenance Shop is not warranted.

4.2.36 Drums Adjacent to Former Boiler Room (E38)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E38B01 during the initial Phase II program indicate that VOCs, SVOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Drums Adjacent to Former Boiler Room is not warranted.

4.2.37 Tank and Container Storage Area "S-51" (E39)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring locations E39B01, E39B02, E39B03, E39B04 and E39B05 during the initial Phase II program indicate that VOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E39B01 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Mercury was also detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E39B02 (0-2).

Recommendations

Although there was a minor exceedance of the TAGM criterion for mercury of 0.21 mg/kg in soil sample E39B02 (0-2), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E39B02 is not warranted.

It should be noted that the Tank and Container Storage Area "S-51" should be formally closed during building deactivation. Closure activities should follow the specifications in NGC's NYSDEC-approved RCRA closure plan and the requirements of 6 NYCRR 373-2.7.

4.2.38 Former Material Storage Area Northwest of Plant 5 Building (E40)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E40B01 during the initial Phase II program indicate that VOCs, SVOCs and PCBs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, arsenic was detected at a concentration exceeding the NYSDEC TAGM criterion in soil sample E40B01 (2-4).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E40B01 during the delineation Phase II program. As described in Table 3-2, a confirmation sample was collected at previous soil sample location E40B01 from the 2 to 4-foot interval and analyzed for arsenic by two independent laboratories. Because the confirmatory soil samples did not exhibit any TAGM exceedances, the delineation soil samples collected from the 4 to 6-foot and 6 to 8-foot intervals were not analyzed. Similarly, the

delineation soil samples collected from soil borings located 7 feet and 14 feet north, south, east and west of soil boring location E40B01 were also not analyzed.

Recommendations

Based on the results of the initial and delineation (confirmation) Phase II programs, it appears that further investigation or remediation at the Former Material Storage Area Northwest of the Plant 5 Building is not warranted.

4.2.39 Former Glycol Shed Adjacent to ACE Building (E41)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E41B01 during the initial Phase II program indicate that select glycols were not detected at concentrations above the method detection limit.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Glycol Shed Adjacent to ACE Building is not warranted.

4.2.40 Former Drum Storage Area East of ACE Building (E42)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E42B01 during the initial Phase II program indicate that VOCs, PCBs and RCRA metals were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)pyrene and dibenzo(a,h)anthracene

were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E42B01 (0-2). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Drum Storage Area East of ACE Building is not warranted.

4.2.41 Existing Fuel Oil AST at Former Pilots Ready Room Building (E43)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E43B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil samples E43B01 (0-2) and E43B01 (2-4). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Existing Fuel Oil AST at the Former Pilots Ready Room Building is not warranted.

4.2.42 Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building (E44)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E44B01 during the initial Phase II program indicate that VOCs were not detected at concentrations exceeding the TAGM criteria. In addition, SVOCs by TCLP were not detected at concentrations exceeding the STARS Tables 1 and 2 TCLP Extraction guidance values. As shown in Table 4-2, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and dibenzo(a,h)anthracene were detected at concentrations exceeding the NYSDEC TAGM criteria in soil sample E44B01 (4-6). Although there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg was not exceeded. However, the criterion for *total* CaPAHs of 10,000 ug/kg was exceeded in soil sample E44B01 (4-6).

Based on the results of the initial Phase II program, additional investigation was conducted at soil boring location E44B01 during the delineation Phase II program. As described in Table 3-2, delineation samples were collected at previous soil sample location E44B01 from the 6 to 8-foot and 8 to 10-foot intervals and analyzed for SVOCs including those listed in STARS Table 2.

As discussed in Section 3.0, the analytical results of samples taken from soil boring location E44B01A from the 6 to 8-foot and 8 to 10-foot intervals during the delineation Phase II program indicate that SVOCs were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial and delineation Phase II programs, soil/sediment is impacted to a depth of at least 6 feet bgs and therefore, remediation is warranted. As previously discussed, the exterior pipe trench at the southeast corner of the 8,000/8,000 Building contains an earthen bottom making its closure regulated by the USEPA UIC Program. Therefore, all closure

activities should be conducted in accordance with the USEPA UIC Program. The depth of soil remediation will be based on endpoint soil sampling and cleanup criteria established under the UIC program.

4.2.43 Transformer Pad at Well House No. 6 (E45)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E45B01 during the initial Phase II program indicate that PCBs were not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Transformer Pad at Well House No. 6 is not warranted.

4.2.44 Transformer Pad Adjacent to Former Boiler Room (E46)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E46B01 during the initial Phase II program indicate that PCBs were not detected at concentrations exceeding the TAGM criterion.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Transformer Pad Adjacent to Former Boiler Room is not warranted.

4.2.45 Former Sump Pit Associated with Former Coal Hopper (E47)

Conclusions

As discussed in Section 2.0, the analytical results of samples taken from soil boring location E47B01 during the initial Phase II program indicate that SVOCs were not detected at concentrations exceeding the TAGM criteria.

Recommendations

Based on the results of the initial Phase II program samples, further investigation or remediation at the Former Sump Pit Associated with the Former Coal Hopper is not warranted.

4.3 Leaching Pools Phase II Investigation

4.3.1 Former Sanitary Leaching Pools West of Plant 5 (E12)

Conclusions

As presented in Section 2.0, the former sanitary leaching pools were sampled and analyzed for VOCs, SVOCs, SVOCs by TCLP, PCBs and RCRA metals during the initial Phase II program. VOCs, SVOCs, PCBs and RCRA metals results were compared to the TAGM criteria while the SVOCs by TCLP were compared to the STARS Tables 1 and 2 TCLP Extraction guidance values. A summary of the exceedances is shown in Table 4-2 and is presented below:

Sample ID	Exceedances				
	VOCs	SVOCs	SVOCs by TCLP	PCBs	RCRA Metals
E12B01 (10-12)		□			○
E12B01 (12-14)					
E12B02 (10-12)		□			○
E12B02 (14-16)					
E12B03 (10-12)					○
E12B03 (14-16)					
E12B04 (11-13)		□			○
E12B04 (14-16)					○
E12B05 (10-12)		□			●
E12B05 (14-16)					
E12B06 (10-12)					
E12B06 (14-16)					
E12B07 (10-12)		□			●
E12B07 (14-16)					
E12B08 (14-16)					
E12B08 (18-20)					
E12B09 (11-13)		□			●
E12B09 (16-18)					
E12B10 (10-12)		□			●
E12B10 (14-16)		■			
E12B11 (11-13)					
E12B11 (16-18)					
E12B12 (10-12)		□			●
E12B12 (14-16)					
E12B13 (11-13)					
E12B13 (13-15)					
E12B14 (10-12)					
E12B14 (14-16)					
E12B15 (12-14)		■			○
E12B15 (16-18)					
E12B16 (12-14)		■			
E12B16 (16-18)					
E12B17 (10-12)		□			
E12B17 (14-16)					
E12B18 (10-12)		■			●
E12B18 (14-16)					
E12B19 (12-14)					
E12B19 (16-18)					
E12B20 (8-10)		□			

Sample ID	Exceedances				
	VOCs	SVOCs	SVOCs by TCLP	PCBs	RCRA Metals
E12B20 (12-14)					
E12B21 (10-12)		□			
E12B21 (14-16)					
E12B22 (10-12)					
E12B22 (14-16)					
E12B23 (8-10)					○
E12B23 (12-14)					
E12B24 (10-12)					
E12B24 (14-16)					
E12B25 (10-12)					
E12B25 (14-16)					
E12B26 (10-12)		□			
E12B26 (14-16)					
E12B27 (10-12)					○
E12B27 (14-16)					
E12B28 (12-14)		□			
E12B28 (16-18)					
E12B29 (13-15)		□			●
E12B29 (17-19)					
E12B30 (13-15)		■			○
E12B30 (17-19)					

■ - Exceedance of the *total* CaPAHs criterion of 10,000 ug/kg.
□ - Exceedance of *individual* SVOCs criteria, but *total* CaPAHs <10,000 ug/kg.
● - Exceedance of one or more RCRA metals.
○ - Exceedance of the Hg TAGM criterion, but Hg <10 mg/kg.

As discussed in Section 3.0, delineation samples were collected from the following former sanitary leaching pools during the delineation Phase II program: E12B05, E12B07, E12B09, E12B10, E12B12, E12B15, E12B18, E12B29 and E12B30. Delineation samples were analyzed for those constituents that exceeded the NYSDEC comparison values as described in Section 3.0. In addition, the following sanitary pools (not previously sampled during the initial Phase II program) were sampled during the delineation Phase II program: E12B31, E12B32, E12B33, E12B34, E12B36, E12B37, E12B38, E12B39, E12B40, E12B41, E12B42, E12B43, E12B44, E12B45, E12B46, E12B47, E12B48, E12B49, E12B50, E12B52, E12B53, E12B55,

E12B56 and E12B57. As discussed in Section 3.0, these leaching pools were sampled and analyzed for SVOCs and RCRA metals. Laboratory analysis for the previously unsampled leaching pools was limited to SVOCs and RCRA metals based on the results of the initial Phase II program. It should be noted that soil samples were not collected from leaching pools E12B35, E12B51, E12B54, E12B58, E12B59 and E12B60, as described in Section 3.0. A summary of the exceedances is shown in Table 4-4 and is presented below:

Sample ID	Exceedances	
	SVOCs	RCRA Metals
E12B05A (10-12)	□	●
E12B05A (12-14)		
E12B07A (12-14)		
E12B09A (13-15)		
E12B10A (14-16)		
E12B10A (16-18)		
E12B12A (12-14)		
E12B15A (14-16)		
E12B18A (12-14)		
E12B29A (15-17)		
E12B30A (15-17)		
E12B31 (10-12)		
E12B31 (14-16)		
E12B32 (12-14)	□	○
E12B32 (16-18)		
E12B33 (8-10)		○
E12B33 (12-14)		●
E12B34 (10-12)	□	
E12B34 (14-16)	■	
E12B36 (11-13)	■	●
E12B36 (15-17)		
E12B37 (10-12)	□	
E12B37 (14-16)		
E12B38 (10-12)		
E12B38 (14-16)		
E12B39 (8-10)	□	
E12B39 (12-14)	□	
E12B40 (10-12)		
E12B40 (14-16)		
E12B41 (10-12)	■	●

Sample ID	Exceedances	
	SVOCs	RCRA Metals
E12B41 (14-16)		
E12B42 (8-10)		
E12B42 (12-14)		
E12B43 (10-12)	■	○
E12B43 (14-16)		
E12B44 (8-10)	■	●
E12B44 (12-14)		
E12B45 (10-12)		○
E12B46 (10-12)		○
E12B46 (14-16)		
E12B47 (8-10)	■	○
E12B47 (12-14)		
E12B48 (10-12)	□	
E12B48 (14-16)		
E12B49 (11-13)	□	
E12B49 (15-17)		
E12B50 (11-13)		
E12B50 (15-17)		
E12B52 (12-14)		●
E12B52 (16-18)		
E12B53 (10-12)		
E12B53 (14-16)	□	
E12B55 (11-13)		
E12B56 (10-12)		○
E12B56 (14-16)		
E12B57 (10-12)		
E12B57 (14-16)		

■ - Exceedance of the *total* CaPAHs criterion of 10,000 ug/kg.
□ - Exceedance of *individual* SVOCs criteria, but *total* CaPAHs <10,000 ug/kg.
● - Exceedance of one or more RCRA metals.
○ - Exceedance of the Hg TAGM criterion, but Hg <10 mg/kg.

Recommendations

Recommendations based on the results of the initial and delineation Phase II programs are cumulatively summarized for each sanitary leaching pool, as described below:

E12B01

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.44 mg/kg in soil sample E12B01 (10-12), it appears that further investigation or remediation is not warranted at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B01 is not warranted.

E12B02

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.46 mg/kg in soil sample E12B02 (10-12), it appears that further investigation or remediation is not warranted at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B02 is not warranted.

E12B03

Although there were minor exceedances of the TAGM criterion for mercury of 2.1 mg/kg in soil sample E12B03 (10-12), it appears that further investigation or remediation is not warranted at this time. As previously discussed, the NYSDEC has utilized a guidance value for

mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B03 is not warranted.

E12B04

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.41 mg/kg and 0.30 mg/kg in soil samples E12B04 (11-13) and E12B04 (14-16), respectively, it appears that further investigation or remediation is not warranted at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B04 is not warranted.

E12B05

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B05 during the delineation Phase II program. As described in Table 3-2, confirmation samples were collected at previous soil sample location E12B05 from the 10 to 12-foot interval bgs and analyzed for arsenic by two independent laboratories. In addition, a soil sample was collected from the 12 to 14-foot interval bgs and analyzed for arsenic.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B05. Impacted soil has been identified at the 10 to 12-foot interval bgs. Therefore, it is recommended that soil should be excavated from the 10 to 12-foot interval bgs within former leaching pool E12B05 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B05 has been backfilled to within 2 feet bgs. The backfill material

should be excavated to a depth of 10 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for arsenic by Method 6010.

E12B06

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B06 is not warranted.

E12B07

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B07 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B07 from the 12 to 14-foot interval bgs and analyzed for cadmium.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B07. Impacted soil has been identified at the 10 to 12-foot interval bgs. Therefore, it is recommended that soil should be excavated from the 10 to 12-foot interval bgs within former leaching pool E12B07 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B07 has been backfilled to grade. The backfill material should be excavated to a depth of 10 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010.

E12B08

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B08 is not warranted.

E12B09

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B09 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B09 from the 13 to 15-foot interval bgs and analyzed for cadmium.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B09. Impacted soil has been identified at the 11 to 13-foot interval bgs. Therefore, it is recommended that soil should be excavated from at least the 11 to 13-foot interval bgs within former leaching pool E12B09 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B09 has been backfilled to within 6 feet bgs. The backfill material should be excavated to a depth of 11 feet bgs and stockpiled for re-use as fill material. Although the 13 to 15-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010.

E12B10

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B09 during the delineation Phase II program. As described in Table 3-2, delineation samples were collected at previous soil sample location E12B10 from the 14 to 16-foot and 16 to 18-foot intervals bgs and analyzed for SVOCs including those constituents listed in STARS Table 2.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B10. Impacted soil has been identified at the 10 to 14-foot interval bgs. Therefore, it is recommended that soil should be excavated from at least the 10 to 14-foot interval bgs within former leaching pool E12B10 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B10 has been backfilled to grade. The backfill material should be

excavated to a depth of 10 feet bgs and stockpiled for re-use as backfill. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010.

E12B11

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B11 is not warranted.

E12B12

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B12 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B12 from the 12 to 14-foot interval bgs and analyzed for RCRA metals.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B12. Impacted soil has been identified at the 10 to 12-foot interval bgs. Therefore, it is recommended that soil should be excavated from at least 10 to 12 feet bgs within former leaching pool E12B12 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B12 has been backfilled to within 6 feet bgs. The backfill material should be excavated to a depth of 10 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E12B13

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B13 is not warranted.

E12B14

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B14 is not warranted.

E12B15

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B15 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B15 from the 14 to 16-foot interval bgs and analyzed for SVOCs including those constituents listed in STARS Table 2.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B15. Impacted soil has been identified at the 12 to 14-foot interval bgs. Therefore, it is recommended that soil should be excavated from at least the 12 to 14-foot interval bgs within former leaching pool E12B15 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B15 has been backfilled to within 4 feet bgs. The backfill material should be excavated to a depth of 12 feet bgs and stockpiled for re-use as fill material. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B16

Based on the results of the initial Phase II program samples, remediation at Former Sanitary Leaching Pool E12B16 is warranted. Impacted soil has been identified at the 12 to 14-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 16 to 18-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 12 to 16-foot interval bgs within former leaching pool E12B16 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B16 has been backfilled to grade. The backfill material should be excavated to a depth of about 12 feet bgs and stockpiled for re-use as fill material. Although the 16 to 18-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B17

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B17 is not warranted.

E12B18

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B18 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B18 from the 12 to 14-foot interval bgs and analyzed for cadmium, lead and SVOCs including those constituents listed in STARS Table 2.

Based on the delineation results, remediation is warranted at soil boring location E12B18. Impacted soil has been identified at the 10 to 12-foot interval bgs. Therefore, it is recommended that soil should be excavated from at least the 10 to 12-foot interval bgs within former leaching pool E12B18 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B18 has been backfilled to within 3 feet bgs. The backfill material should be excavated to a depth of 10 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010 and SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B19

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B19 is not warranted.

E12B20

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B20 is not warranted.

E12B21

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B21 is not warranted.

E12B22

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B22 is not warranted.

E12B23

Although there were minor exceedances of the TAGM criterion for mercury of 1.4 mg/kg in soil sample E12B23 (8-10), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II samples, it appears that further investigation or remediation at soil boring location E12B23 is not warranted.

E12B24

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B24 is not warranted.

E12B25

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B25 is not warranted.

E12B26

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B26 is not warranted.

E12B27

Although there were minor exceedances of the TAGM criterion for mercury of 0.48 mg/kg in soil sample E12B27 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B27 is not warranted.

E12B28

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B28 is not warranted.

E12B29

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B29 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B29 from the 15 to 17-foot interval bgs and analyzed for RCRA metals.

Based on the delineation results, remediation is warranted at soil boring location E12B29. Impacted soil has been identified at the 13 to 15-foot interval bgs. Therefore, it is recommended that soil should be excavated to at least 15 feet bgs within former leaching pool E12B29 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B29 has not been backfilled and a void exists to a depth of 13 feet bgs. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an

endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E12B30

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E12B30 during the delineation Phase II program. As described in Table 3-2, a delineation sample was collected at previous soil sample location E12B30 from the 15 to 17-foot interval bgs and analyzed for SVOCs including those constituents listed in STARS Table 2.

Based on the delineation results, remediation is warranted at soil boring location E12B30. Impacted soil has been identified at the 13 to 15-foot interval bgs. Therefore, it is recommended that soil should be excavated to at least 15 feet bgs within former leaching pool E12B30 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B30 has not been backfilled and a void exists to a depth of 13 feet bgs. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B31

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B31 is not warranted.

E12B32

As summarized in the table above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded.

Although there were minor exceedances of the TAGM criterion for mercury of 0.25 mg/kg in soil sample E12B32 (12-14), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B32 is not warranted.

E12B33

Although there were minor exceedances of the TAGM criterion for mercury of 0.34 mg/kg in soil sample E12B33 (8-10), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E12B33 is not warranted. In addition, there was a minor TAGM exceedance of chromium of 55.6 mg/kg in sample E12B33 (8-10). However, this concentration is lower than the commonly utilized NYSDEC guidance value for chromium of 150 mg/kg that also supports unrestricted land use. Consequently, no further investigation or remediation is warranted at former leaching pool E12B33.

E12B34

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B34 is not warranted.

E12B36

Based on the delineation Phase II results, remediation is warranted at soil boring location E12B36. Impacted soil has been identified at the 11 to 13-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 15 to 17-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated to at least 15 feet bgs within former leaching pool E12B36 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B36 has not been backfilled and a void exists to a depth of 11 feet bgs. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471 and SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B37

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B37 is not warranted.

E12B38

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B38 is not warranted.

E12B39

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total*

SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B39 is not warranted.

E12B40

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B40 is not warranted.

E12B41

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B41. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 14 to 16-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 10 to 14-foot interval bgs within former leaching pool E12B41 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B41 has been backfilled to within about 3 feet bgs. The backfill material should be excavated to a depth of about 10 feet bgs and stockpiled for re-use as fill material. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010 and SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B42

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B42 is not warranted.

E12B43

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B43. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 14 to 16-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 10 to 14-foot interval bgs within former leaching pool E12B43 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B43 has been backfilled to grade. The backfill material should be excavated to a depth of about 10 feet bgs and stockpiled for re-use as fill material. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B44

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B44. Impacted soil has been identified at the 8 to 10-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 12 to 14-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 8 to 12-foot interval bgs within former leaching pool E12B44 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B44 has been backfilled to grade. The backfill material should be excavated to a depth of about 8 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for cadmium by Method 6010 and SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B45

Although there were minor exceedances of the TAGM criterion for mercury of 2.3 mg/kg in soil sample E12B45 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the Phase II samples, it appears that further investigation or remediation at soil boring location E12B45 is not warranted.

E12B46

Although there were minor exceedances of the TAGM criterion for mercury of 1.5 mg/kg in soil sample E12B46 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the Phase II samples, it appears that further investigation or remediation at soil boring location E12B46 is not warranted.

E12B47

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B47. Impacted soil has been identified at the 8 to 10-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 12 to 14-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 8 to 12-foot interval bgs within former leaching pool E12B47 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B47 has been backfilled to grade. The backfill material should be excavated to a depth of about 8 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation.

Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B48

As summarized in the table above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B48 is not warranted.

E12B49

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B49 is not warranted.

E12B50

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B50 is not warranted.

E12B52

Based on the delineation Phase II program results, remediation is warranted at soil boring location E12B52. Impacted soil has been identified at the 12 to 14-foot interval bgs; however, the exact vertical extent of impacted soil has not been determined. From the delineation results, the 16 to 18-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 12 to 16-foot interval bgs within former leaching pool E12B52 for proper off-site transportation and disposal. It should be noted that former leaching pool E12B52 has not been

backfilled and a void exists to 12 feet bgs. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E12B53

As summarized in the table above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E12B53 is not warranted.

E12B55

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B55 is not warranted.

E12B56

Although there were minor exceedances of the TAGM criterion for mercury of 2.3 mg/kg in soil sample E12B56 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the Phase II samples, it appears that further investigation or remediation at soil boring location E12B56 is not warranted.

E12B57

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E12B57 is not warranted.

4.3.2 Unverified Former Sanitary Leaching Pools West of Plant 5 (E13)

Conclusions

As presented in Section 2.0, the unverified former sanitary leaching pools were sampled and analyzed for VOCs, SVOCs, SVOCs by TCLP, PCBs and RCRA metals during the initial Phase II program. VOCs, SVOCs, PCBs and RCRA metals results were compared to the TAGM criteria while the SVOCs by TCLP were compared to the STARS Tables 1 and 2 TCLP Extraction guidance values. A summary of the exceedances is shown in Table 4-2 and is presented below:

	Exceedances				
Sample ID	**VOCs**	**SVOCs**	**SVOCs by TCLP**	**PCBs**	**RCRA Metals**
E13B01 (11-13)					
E13B01 (15-17)					
E13B02 (11-13)					
E13B02 (15-17)					
E13B03 (10-12)		□			○
E13B03 (16-18)					
E13B04 (12-14)					
E13B04 (16-18)					
E13B05 (11-13)					
E13B05 (15-17)					
E13B06 (12-14)					○
E13B06 (16-18)					
E13B07 (11-13)		□			○
E13B07 (15-17)					
E13B08 (10-12)					
E13B08 (14-16)					
E13B09 (12-14)	▲				○
E13B09 (16-18)					
E13B10 (11-13)					○
E13B10 (15-17)					
E13B11 (11-13)					○
E13B11 (15-17)					

Sample ID	Exceedances				
	VOCs	SVOCs	SVOCs by TCLP	PCBs	RCRA Metals
E13B12 (12-14)	▲				○
E13B12 (16-18)					
E13B13 (12-14)	▲				
E13B13 (16-18)					
E13B14 (8-10)					
E13B14 (12-14)					
E13B15 (10-12)					
E13B15 (14-16)					
E13B16 (12-14)					
E13B16 (16-18)					
E13B17 (10-12)					
E13B17 (14-16)					
E13B18 (12-14)					
E13B18 (16-18)					
E13B19 (10-12)		□			○
E13B19 (16-18)					
E13B20 (10-12)		□			○
E13B20 (14-16)					
E13B21 (10-12)		□			
E13B21 (14-16)					
E13B22 (10-12)		□			
E13B22 (14-16)					
E13B23 (11-13)		□			○
E13B23 (15-17)					
E13B24 (11-13)		□			●
E13B24 (15-17)					
E13B25 (11-13)		□			
E13B25 (15-17)					

■ - Exceedance of the *total* CaPAHs criterion of 10,000 ug/kg.
□ - Exceedance of *individual* SVOCs criteria, but *total* CaPAHs <10,000 ug/kg.
● - Exceedance of one or more RCRA metals.
○ - Exceedance of the Hg TAGM criterion, but Hg <10 mg/kg.
▲ - Exceedance of *individual* VOCs criteria.

As discussed in Section 3.0, delineation samples were collected from former sanitary leaching pool E13B24 and analyzed for RCRA metals during the Phase II program. In addition, the following sanitary pools (not previously sampled during the initial Phase II program) were sampled during the delineation Phase II program: E13B26, E13B27, E13B29, E13B31, E13B32, E13B33, E13B34, E13B35, E13B36, E13B37, E13B41, E13B42, E13B43, E13B44, E13B45, E13B46, E13B48 and E13B49. As discussed in Section 3.0, these leaching pools were sampled and analyzed for SVOCs and RCRA metals. Laboratory analysis for the previously unsampled leaching pools was limited to SVOCs and RCRA metals based on the results of the initial Phase II program. It should be noted that soil samples were not collected from leaching pools E13B28, E13B30, E13B39, E13B40, E13B47 and E13B50, as described in Section 3.0. A summary of the exceedances is shown in Table 4-4 and is presented below:

	Exceedances	
Sample ID	**SVOCs**	**RCRA Metals**
E13B24A (13-15)		
E13B26 (11-13)		○
E13B26 (15-17)		
E13B27 (11-13)		
E13B27 (15-17)		
E13B29 (8-10)	■	●
E13B29 (12-14)		
E13B31 (13-15)	□	●
E13B31 (17-19)		
E13B32 (13-15)		●
E13B32 (17-19)		
E13B33 (13-15)		○
E13B33 (17-19)		
E13B34 (11-13)	□	●
E13B34 (15-17)		
E13B35 (10-12)	□	●
E13B35 (14-16)		
E13B36 (11-13)	□	●
E13B36 (15-17)		
E13B37 (11-13)		●
E13B37 (15-17)		
E13B41 (11-13)		○
E13B41 (15-17)		
E13B42 (10-12)		●

Sample ID	Exceedances	
	SVOCs	RCRA Metals
E13B42 (14-16)		
E13B43 (10-12)		○
E13B43 (14-16)		
E13B44 (10-12)	□	●
E13B44 (14-16)		
E13B45 (10-12)	□	●
E13B45 (14-16)		
E13B46 (10-12)		
E13B46 (14-16)		
E13B48 (8-10)	□	
E13B49 (11-13)		●
E13B49 (15-17)		

■ - Exceedance of the *total* CaPAHs criterion of 10,000 ug/kg.
□ - Exceedance of *individual* SVOCs criteria, but *total* CaPAHs <10,000 ug/kg.
● - Exceedance of one or more RCRA metals.
○ - Exceedance of the Hg TAGM criterion, but Hg <10 mg/kg.

Recommendations

Recommendations based on the results of the initial and delineation Phase II programs are cumulatively summarized for each sanitary leaching pool, as described below:

E13B01

Based on the results of the initial Phase II program samples, it appears that further investigation or remediation at Former Sanitary Leaching Pool E13B01 is not warranted. However, it should be noted that leaching pool E13B01 is actively connected to the municipal sanitary sewer system and functions as an overflow pool. Therefore, leaching pool E13B01 should be closed in accordance with the requirements of the USEPA UIC Program.

E13B02

Based on the results of the initial Phase II program samples, it appears that further investigation or remediation at Former Sanitary Leaching Pool E13B02 is not warranted. However, it should be noted that leaching pool E13B02 is actively connected to the municipal sanitary sewer system and functions as an overflow pool. Therefore, leaching pool E13B02 should be closed in accordance with the requirements of the USEPA UIC Program.

E13B03

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 1.2 mg/kg in soil sample E13B03 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B03 is not warranted. However, it should be noted that leaching pool E13B03 is actively connected to the municipal sanitary sewer system and functions as an overflow pool. Therefore, leaching pool E13B03 should be closed in accordance with the requirements of the USEPA UIC Program.

E13B04

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B04 is not warranted.

E13B05

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B05 is not warranted.

E13B06

Although there were minor exceedances of the TAGM criterion for mercury of 1.3 mg/kg in soil sample E13B06 (12-14), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B06 is not warranted.

E13B07

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.95 mg/kg in soil sample E13B07 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B07 is not warranted.

E13B08

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B08 is not warranted.

E13B09

Although there were minor exceedances of the TAGM criterion for mercury of 0.22 mg/kg in soil sample E13B09 (12-14), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B09 is not warranted.

As indicated in Table 4-2, acetone and 2-butanone were detected in sample E13B09 (12-14) at concentrations of 6,000 ug/kg and 1,900 ug/kg, respectively, which exceeded the TAGM criteria. At the time the work plans for the Phase II Delineation program were developed, NGC had indicated that USEPA ingestion SSLs would be utilized as comparison values for VOCs including these two compounds. There were no exceedances of the USEPA ingestion SSLs for acetone and 2-butanone. Therefore, it was determined that no further investigation or remediation was warranted at soil boring location E13B09.

E13B10

Although there were minor exceedances of the TAGM criterion for mercury of 0.24 mg/kg in soil sample E13B10 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II

program samples, it appears that further investigation or remediation at soil boring location E13B10 is not warranted.

E13B11

Although there were minor exceedances of the TAGM criterion for mercury of 0.22 mg/kg in soil sample E13B11 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B11 is not warranted.

E13B12

Although there were minor exceedances of the TAGM criterion for mercury of 1.8 mg/kg in soil sample E13B12 (12-14), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B12 is not warranted.

As indicated in Table 4-2, acetone and 2-butanone were detected in sample E13B12 (12-14) at concentrations of 1,000 ug/kg and 370 ug/kg, respectively, which exceeded the TAGM criteria. As discussed previously, at the time the work plans for the Phase II Delineation program were developed, NGC had indicated that USEPA ingestion SSLs would be utilized as comparison values for VOCs including these two compounds. Since there were no exceedances of the USEPA ingestion SSLs for acetone and 2-butanone, it was determined that no further investigation or remediation was warranted at soil boring location E13B12.

E13B13

As indicated in Table 4-2, acetone was detected in sample E13B13 (12-14) at concentrations of 300 ug/kg, which exceeded the TAGM criterion. As discussed above, at the time the work plans for the Phase II Delineation program were developed, NGC had indicated that USEPA ingestion SSLs would be utilized as comparison values for VOCs. Since there were no exceedances of the USEPA ingestion SSL for acetone, it was determined that no further investigation or remediation was warranted at soil boring location E13B13.

E13B14

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B14 is not warranted.

E13B15

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B15 is not warranted.

E13B16

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B16 is not warranted.

E13B17

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B17 is not warranted.

E13B18

Based on the results of the initial Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B18 is not warranted.

E13B19

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.84 mg/kg in soil sample E13B19 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B19 is not warranted.

E13B20

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.32 mg/kg in soil sample E13B20 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B20 is not warranted.

E13B21

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E13B21 is not warranted.

E13B22

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E13B22 is not warranted.

E13B23

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Although there were minor exceedances of the TAGM criterion for mercury of 0.31 mg/kg in soil sample E13B23 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B23 is not warranted.

E13B24

Based on the initial Phase II program results, additional investigation was conducted at soil boring location E13B24 during the delineation Phase II program. As described in Table 3-2,

a delineation sample was collected at previous soil sample location E13B24 from the 13 to 15-foot interval bgs and analyzed for RCRA metals.

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B24. Impacted soil has been identified at the 11 to 13-foot interval bgs. Therefore, it is recommended that soil should be excavated from the 11 to 13-foot interval bgs within former leaching pool E13B24 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B24 has not been backfilled and a void exists to 11 feet bgs. Although the 13 to 15-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B25

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E13B25 is not warranted.

E13B26

Although there were minor exceedances of the TAGM criterion for mercury of 0.79 mg/kg in soil sample E13B26 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the Phase II program samples, it appears that further investigation or remediation at soil boring location E13B26 is not warranted. However, it should be noted that leaching pool E13B26 is actively connected to the municipal sanitary sewer system and functions as an overflow pool. Therefore,

leaching pool E13B26 should be closed in accordance with the requirements of the USEPA UIC Program.

E13B27

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B27 is not warranted.

E13B29

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B29. Impacted soil has been identified at the 8 to 10-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 12 to 14-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 8 to 12-foot interval bgs within former leaching pool E13B29 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B29 has been backfilled to grade. The backfill material should be excavated to a depth of about 8 feet bgs and stockpiled for re-use as fill material. Although the 12 to 14-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471 and SVOCs including the constituents listed in STARS Table 2 by Method 8270.

E13B31

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B31. Impacted soil has been identified at the 13 to 15-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 17 to 19-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil

be excavated from at least the 13 to 17-foot interval bgs within former leaching pool E13B31 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B31 has not been backfilled and a void exists to a depth of 13 feet bgs. Although the 17 to 19-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B32

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B32. Impacted soil has been identified at the 13 to 15-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 17 to 19-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from at least the 13 to 17-foot interval bgs within former leaching pool E13B32 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B32 has not been backfilled and a void exists to a depth of 13 feet bgs. Although the 17 to 19-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B33

Although there were minor exceedances of the TAGM criterion for mercury of 0.68 mg/kg in soil sample E13B33 (13-15), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B33 is not warranted.

E13B34

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B34. Impacted soil has been identified at the 11 to 13-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 15 to 17-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 11 to 15-foot interval bgs within former leaching pool E13B34 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B34 has not been backfilled and a void exists to a depth of 13 feet bgs. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B35

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B35. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 14 to 16-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 10 to 14-foot interval bgs within former leaching pool E13B35 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B35 has been backfilled to grade. The backfill material should be excavated to a depth of about 10 feet bgs and stockpiled for re-use as fill material. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B36

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B36. Impacted soil has been identified at the 11 to 13-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 15 to 17-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 11 to 15-foot interval bgs within former leaching pool E13B36 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B36 has not been backfilled and a void exists to a depth of 11 feet bgs. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B37

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B37. Impacted soil has been identified at the 11 to 13-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 15 to 17-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 11 to 15-foot interval bgs within former leaching pool E13B37 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B37 has been backfilled to grade. The backfill material should be excavated to a depth of about 11 feet bgs and stockpiled for re-use as fill material. Although the 15 to 17-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B38

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B38 is not warranted.

E13B41

Although there were minor exceedances of the TAGM criterion for mercury of 3.8 mg/kg in soil sample E13B41 (11-13), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the Phase II program samples, it appears that further investigation or remediation at soil boring location E13B41 is not warranted.

E13B42

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B42. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 14 to 16-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 10 to 14-foot interval bgs within former leaching pool E13B42 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B42 has not been backfilled and a void exists to a depth of 10 feet bgs. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for arsenic by Method 6010.

E13B43

Although there were minor exceedances of the TAGM criterion for mercury of 0.3 mg/kg in soil sample E13B43 (10-12), further investigation or remediation is not recommended at this time. As previously discussed, the NYSDEC has utilized a guidance value for mercury of 10 mg/kg that would support a recommendation for unrestricted land use. Utilizing this commonly accepted guidance value for mercury, and based on the results of the initial Phase II program samples, it appears that further investigation or remediation at soil boring location E13B43 is not warranted.

E13B44

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B44. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 14 to 16-foot interval was shown not to exhibit any TAGM exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 10 to 14-foot interval bgs within former leaching pool E13B44 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B44 has been backfilled to grade. The backfill material should be excavated to a depth of about 10 feet bgs and stockpiled for re-use as fill material. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B45

Based on the delineation Phase II program results, remediation is warranted at soil boring location E13B45. Impacted soil has been identified at the 10 to 12-foot interval bgs. However, the exact vertical extent of impacted soil has not been determined. Based on the delineation Phase II program results, the 14 to 16-foot interval was shown not to exhibit any TAGM

exceedances. Therefore, to preclude further investigation activities, it is recommended that soil be excavated from the 10 to 14-foot interval bgs within former leaching pool E13B45 for proper off-site transportation and disposal. It should be noted that former leaching pool E13B45 has not been backfilled and a void exists to a depth of 10 feet bgs. Although the 14 to 16-foot interval did not exhibit any TAGM exceedances, the NYSDEC is likely to require that an endpoint sample be taken at the time of excavation. Therefore, an endpoint sample should be collected after excavation and analyzed for RCRA metals by Methods 6010/7471.

E13B46

Based on the results of the delineation Phase II program samples, further investigation or remediation at Former Sanitary Leaching Pool E13B46 is not warranted.

E13B48

As summarized in the tables above, while there were SVOCs detected at concentrations that exceeded the NYSDEC TAGM criteria for *individual* compounds, the criterion for *total* SVOCs of 500,000 ug/kg and the criterion for *total* CaPAHs of 10,000 ug/kg were not exceeded. Therefore, further investigation or remediation at soil boring location E13B48 is not warranted.

E13B49

Although there was a minor exceedance of the TAGM criterion for arsenic of 12.2 mg/kg in soil sample E13B49 (11-13), further investigation or remediation is not recommended at this time.

4.4 Groundwater Investigation

As previously discussed, the Plant 5 site is located downgradient of known sources of groundwater contamination. Previous investigations have documented groundwater contamination in the vicinity of and beneath the Plant 5 property. Although groundwater

degradation remains an environmental concern, previous and ongoing investigations have documented the source of this contamination to be from off-site, upgradient locations. Ongoing investigations are expected to further delineate the existing groundwater contamination. In particular, NYSDEC and USEPA are involved in the active oversight of the remedial investigations, feasibility studies and the remediation of all operable units, including groundwater plumes associated with adjacent properties. Therefore, further investigation or remediation and/or monitoring of groundwater does not appear to be warranted at this time.

4.5 General Recommendations

It is recommended that an integrated remediation plan be developed that includes the recommendations for remediation of the Phase II Site Assessments for the Structural Test Hangars and Plant 5 sites. In addition, it is recommended that this remediation plan include the recommendations of the UIC discharge determination programs for each site.

TABLE 4-1
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
INTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Former Drop Quench Oven Area		Condensate Pit	Former Machine Shop		Former Machine Shop		Storage Area for SBMS			Forms and Central Storage Area		Former Model Shop			Former Model Shop Paint Spray Room	
BORING/PROBE ID	I04B01	I04B01	I05B01	I06B03	I06B03	I07B03	I07B03	I10B01	I10B02	I10B02	I11B01	I11B01	I12B01	I12B01	I12B02	I13B01	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	4' - 6'	6' - 8'	7.5' - 9.5'	0 - 2'	2' - 4'	0 - 2'	2' - 4'	1' - 3'	1' - 3'	3' - 5'	0 - 2'	2' - 4'	0 - 2'	2' - 4'	2' - 4'	2' - 4'	AND EASTERN USA
DATE OF COLLECTION	07/30/98	07/30/98	07/24/98	07/30/98	07/30/98	07/21/98	07/21/98	07/24/98	07/24/98	07/24/98	07/23/98	07/23/98	07/23/98	07/23/98	07/23/98	07/23/98	BACKGROUND LEVELS
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	3,300	--	--	--	--	460	450	--	740	390	--	--	820	620	224 or MDL
Chrysene	--	--	3,800	--	--	--	--	540	600	--	900	520	--	--	900	740	400
Benzo(b)fluoranthene	--	--	2,800	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(k)fluoranthene	--	--	2,600	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(a)pyrene	--	--	3,000	--	69	71	--	250	220	110	280	140	120	72	470	360	61 or MDL
Dibenzo(a,h)anthracene	24	25	--	16	26	24	--	--	--	--	--	38	--	--	76	--	14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Phenol	38	--	--	--	--	36	--	58	33	--	--	--	--	64	--	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	--	15,500	--	--	--	--	--	--	--	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 - 12
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15 - 600
Cadmium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10
Chromium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	--	--	0.21	--	--	--	0.21	--	--	--	--	--	--	--	--	--	0.20
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-1 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
INTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Former Router Room	Caged Storage Area	Model Airplane Shop	High Voltage Crew Area			Electricians Storage Room		Generator Room		Blue Room	Facilities Maintenance Shop	OAO Hangar				NYSDEC TAGM CRITERIA AND EASTERN USA BACKGROUND LEVELS
BORING/PROBE ID	I14B02	I15B01	I16B01	I18B01	I18B02	I18B02	I20B01	I20B01	I21B01	I21B02	I22B01	I23B01	I27B01	I27B01	I27B04	I27B04	
SAMPLE DEPTH	0 - 2'	0 - 2'	2' - 4'	7' - 9'	0 - 2'	2' - 4'	0 - 2'	2' - 4'	3.5' - 5.5'	3' - 5'	3.5' - 5.5'	0 - 2'	1' - 3'	3' - 5'	1' - 3'	3' - 5'	
DATE OF COLLECTION	07/22/98	07/22/98	07/22/98	07/27/98	07/27/98	07/27/98	07/28/98	07/28/98	07/31/98	07/31/98	07/27/98	07/28/98	07/31/98	07/31/98	08/04/98	08/04/98	
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	2,300	310	4,200	460	1,300	--	420	--	--	--	--	--	--	--	--	224 or MDL
Chrysene	--	2,800	--	5,000	530	1,500	--	410	--	--	--	--	--	--	--	--	400
Benzo(b)fluoranthene	--	1,500	--	2,600	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(k)fluoranthene	--	1,200	--	2,700	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(a)pyrene	--	1,600	200	3,200	350	890	160	290	--	--	180	--	--	--	75	110	61 or MDL
Dibenzo(a,h)anthracene	--	--	40	--	--	150	37	72	--	--	32	--	--	--	--	32	14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Phenol	--	--	--	--	--	--	--	--	--	--	--	31	--	--	--	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	--	--	17,700	--	--	--	--	--	--	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	12.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 - 12
Barium	--	--	--	--	--	--	--	--	--	646	--	--	--	--	--	--	15 - 600
Cadmium	--	--	--	--	--	--	--	--	--	12.7	21.3	--	--	--	--	--	10
Chromium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	51.4	--	50
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	--	--	--	--	--	--	--	--	0.3	1.4	--	--	0.32	0.38	0.24	--	0.20
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-1 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
INTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	OAO Hangar		Paint Tunnel	Optics Laboratory	Paint Spray Area											
BORING/PROBE ID	I27B05	I27B05	I34B01	I35B01	I36B02											NYSDEC TAGM CRITERIA
SAMPLE DEPTH	1' - 3'	3' - 5'	2' - 4'	6' - 8'	2' - 4'											AND EASTERN USA
DATE OF COLLECTION	08/04/98	08/04/98	08/06/98	07/22/98	07/21/98											BACKGROUND LEVELS
SVOCs (ug/kg)																TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	--	--	--											224 or MDL
Chrysene	--	--	--	--	--											400
Benzo(b)fluoranthene	--	--	--	--	--											1,100
Benzo(k)fluoranthene	--	--	--	--	--											1,100
Benzo(a)pyrene	100	140	--	360	--											61 or MDL
Dibenzo(a,h)anthracene	--	39	--	--	--											14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--											3,200
2,4,5-Trichlorophenol	--	--	--	--	--											100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--											50,000
2,4-Dichlorophenol	--	--	--	--	--											400
Phenol	--	--	--	--	52											30
Phenanthrene	--	--	--	--	--											50,000
Fluoranthene	--	--	--	--	--											50,000
Pyrene	--	--	--	--	--											50,000
TOTAL CaPAHs	--	--	--	--	--											10,000
TOTAL SVOCs	--	--	--	--	--											500,000
METALS (mg/kg)																Eastern USA/TAGM (mg/kg)
Arsenic	--	--	24.2	--	--											3 - 12
Barium	--	--	--	--	--											15 - 600
Cadmium	15.2	39.7	--	--	--											10
Chromium	74	90.5	--	--	--											50
Lead	--	--	--	--	--											200 - 500
Mercury	--	--	--	5.7	0.8											0.20
Selenium	--	--	--	--	--											0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels
MDL: Method detection limit.

TABLE 4-2
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	West End of Drainage Trench Along Northern Prop	DW Near Center of Drainage Trench Along Northern Prop. Bndry.		DW North of Plt 5 Kitchen Along Fmr Taxiway	Northwest of Plt 5 North Bldg Entrance Along Fmr Taxiway	DW Near NE Corner of Plt 5 Bldg	Air/Electric Pits West of Shuttle Wing Hangar & High Bay 1				Air/Electric Pits in Courtyard "A"	Recharge Basins	Former Sanitary Leaching Pools West of Plant 5				
BORING/PROBE ID	E02B01	E03B01	E03B01	E04B01	E05B01	E07B01	E09B02	E09B03	E09B04	E09B05	E10B02	E11BN02	E12B01	E12B02	E12B03	E12B04	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	10' - 12'	11' - 13'	19' - 21'	15' - 17'	18' - 20'	11' - 13'	3' - 5'	2' - 4'	2' - 4'	2' - 4'	2' - 4'	2' - 4'	10' - 12'	10' - 12'	10' - 12'	11' - 13'	AND EASTERN USA
DATE OF COLLECTION	07/07/98	07/08/98	07/08/98	07/27/98	07/02/98	07/01/98	07/09/98	07/09/98	07/09/98	07/09/98	07/09/98	07/07/98	06/29/98	06/29/98	06/29/98	06/29/98	BACKGROUND LEVELS
VOCs (ug/kg)																	TAGM Criteria (ug/kg)
Acetone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200
2-Butanone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	1,700	430	--	5,800	560	3,700	21,000	15,000	21,000	51,000	2,800	--	--	--	--	280	224 or MDL
Chrysene	2,200	710	--	6,900	880	5,800	27,000	20,000	28,000	58,000	3,300	--	--	--	--	--	400
Benzo(b)fluoranthene	2,400	--	--	5,600	2,200	4,500	21,000	28,000	33,000	51,000	5,600	--	--	--	--	--	1,100
Benzo(k)fluoranthene	1,500	--	--	3,800	1,800	3,600	21,000	9,800	19,000	40,000	4,600	--	--	--	--	--	1,100
Benzo(a)pyrene	2,000	360	--	4,200	820	4,900	28,000	26,000	36,000	62,000	4,300	62	170	250	--	280	61or MDL
Dibenzo(a,h)anthracene	120	45	--	850	--	710	4,500	3,200	4,900	12,000	550	17	--	--	--	60	14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	14,000	8,700	16,000	34,000	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Phenol	--	--	--	--	--	--	--	--	--	--	240	--	--	--	--	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	61,000	--	--	--	--	--	--	50,000
Fluoranthene	--	--	--	--	--	--	--	--	--	87,000	--	--	--	--	--	--	50,000
Pyrene	--	--	--	--	--	--	--	--	--	88,000	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	--	--	27,150	--	23,210	136,500	110,700	157,900	308,000	21,150	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	544,000	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	--	--	--	--	--	16.6	15	--	26.3	20.3	--	--	--	--	--	--	3 - 12
Barium	--	--	--	--	--	--	--	--	712	--	--	--	--	--	--	--	15 - 600
Cadmium	--	--	--	--	--	--	37.5	--	22.3	--	15.1	--	--	--	--	--	10
Chromium	--	--	--	--	--	--	135	--	131	66.3	51.4	--	--	--	--	--	50
Lead	--	--	--	--	--	--	2,380	--	1,880	1,320	--	--	--	--	--	--	200 - 500
Mercury	--	--	0.26	0.29	0.24	--	0.6	0.38	0.72	0.28	--	--	0.44	0.46	2.1	0.41	0.20
Selenium	--	--	--	--	--	--	5.5	--	7.9	5.7	--	--	--	--	--	--	0.1 - 3.9

Notes:
-- Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-2 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Former Sanitary Leaching Pools West of Plant 5																	
BORING/PROBE ID	E12B04	E12B05	E12B07	E12B09	E12B10	E12B10	E12B12	E12B15	E12B16	E12B17	E12B18	E12B20	E12B21	E12B23	E12B26	E12B27	E12B28	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	14' - 16'	10' - 12'	10' - 12'	11' - 13'	10' - 12'	12' - 14'	10' - 12'	12' - 14'	12' - 14'	10' - 12'	10' - 12'	8' - 10'	10' - 12'	8' - 10'	10' - 12'	10' - 12'	12' - 14'	AND EASTERN USA
DATE OF COLLECTION	06/29/98	06/30/98	07/06/98	06/30/98	07/06/98	07/06/98	07/01/98	06/30/98	06/30/98	06/30/98	07/01/98	07/02/98	07/01/98	07/06/98	07/06/98	07/07/98	07/07/98	BACKGROUND LEVELS
VOCs (ug/kg)																		TAGM Criteria (ug/kg)
Acetone	--	--	--	--	--	--	--	--	--	--	240	--	--	--	--	--	--	200
2-Butanone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300
SVOCs (ug/kg)																		TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	240	380	770	2,000	370	4,400	2,000	--	1,900	320	240	--	--	--	270	224 or MDL
Chrysene	--	--	--	580	890	2,200	--	4,800	2,200	--	2,300	--	--	--	--	--	--	400
Benzo(b)fluoranthene	--	--	--	--	--	2,800	--	3,000	2,800	--	3,500	--	--	--	--	--	--	1,100
Benzo(k)fluoranthene	--	--	--	--	--	2,400	--	3,000	2,400	--	3,600	--	--	--	--	--	--	1,100
Benzo(a)pyrene	--	--	240	310	650	2,700	290	4,000	2,700	64	2,300	370	270	--	--	--	250	61or MDL
Dibenzo(a,h)anthracene	--	--	--	--	--	220	--	580	220	--	--	22	--	--	--	--	52	14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Bis(2-ethylhexyl)phthalate	--	88,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,000	--	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	--	--	--	--	12,320	--	19,780	12,320	--	13,600	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																		Eastern USA/TAGM (mg/kg)
Arsenic	--	42.8	--	--	15	--	34.4	--	--	--	--	--	--	--	--	--	--	3 - 12
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15 - 600
Cadmium	--	--	20.7	13	14.9	--	41.1	--	--	--	12.2	--	--	--	--	--	--	10
Chromium	--	--	87.5	64.1	113	--	266	--	--	--	91.1	--	--	--	--	--	--	50
Lead	--	--	--	--	--	--	9,840	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	0.3	0.3	1.3	--	3.1	--	0.5	2	--	--	3.1	--	--	1.4	--	0.48	--	0.20
Selenium	--	--	--	--	--	--	10.5	--	--	--	--	--	--	--	--	--	--	0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-2 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Former Sanitary Leaching Pools West of Plant 5		Unverified Former Sanitary Leaching Pools West of Plant 5														
BORING/PROBE ID	E12B29	E12B30	E13B03	E13B06	E13B07	E13B09	E13B10	E13B11	E13B12	E13B13	E13B19	E13B20	E13B21	E13B22	E13B23	E13B24	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	13' - 15'	13' - 15'	10' - 12'	12' - 14'	11' - 13'	12' - 14'	11' - 13'	11' - 13'	12' - 14'	12' - 14'	10' - 12'	10' - 12'	10' - 12'	10' - 12'	11' - 13'	11' - 13'	AND EASTERN USA
DATE OF COLLECTION	07/07/98	07/07/98	07/16/98	07/16/98	07/16/98	07/20/98	07/20/98	07/21/98	07/20/98	07/20/98	07/17/98	07/20/98	07/21/98	07/21/98	07/21/98	07/20/98	BACKGROUND LEVELS
VOCs (ug/kg)																	TAGM Criteria (ug/kg)
Acetone	--	--	--	--	--	6,000	--	--	1,000	320	--	--	--	--	--	--	200
2-Butanone	--	--	--	--	--	1,900	--	--	370		--	--	--	--	--	--	300
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	300	210,000	--	--	710	--	--	--	--	--	--	390	--	--	--	--	224 or MDL
Chrysene	--	230,000	--	--	2,000	--	--	--	--	--	--	650	--	--	--	--	400
Benzo(b)fluoranthene	--	220,000	--	--	2,600	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(k)fluoranthene	--	130,000	--	--	2,000	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(a)pyrene	340	220,000	84	--	640	--	--	--	--	--	120	490	73	63	120	89	61or MDL
Dibenzo(a,h)anthracene	--	12,000	--	--	180	--	--	--	--	--	--	58	16	--	--	--	14 or MDL
Indeno(1,2,3-cd)pyrene	--	34,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	220	--	100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	--	--	--	--	1,600	--	--	--	--	--	770	--	--	--	490	--	400
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	66	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Fluoranthene	--	280,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Pyrene	--	230,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	1,056,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	1,566,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	41.6	3 - 12
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15 - 600
Cadmium	31.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	31.7	10
Chromium	62.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57.9	50
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	12.2	3.8	1.2	1.3	0.95	0.22	0.24	0.22	1.8	--	0.84	0.32	--	--	0.31	3.2	0.20
Selenium	4.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.2	0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-2 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
INITIAL PHASE II PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Unverified Former Sanitary LP's West of Plt 5	Fmr. Sanitary Wastewater Disp. Sys. Wet Well West of Plt 5	Fmr. Sanitary LP's Converted to DW's		Fmr. Cold Flow Test Fac. Sanitary LP	Gravel Surfaced Parking Area West of Struct. Test	Catch Basin in Courtyard "A" Near CAA	Areas of Stressed Vegetation		Concrete Foundation of Fmr. Test Platform	Tank and Container Storage Area "S-51"		Fmr. Material Storage Area NW of Plt 5 Bldg	Fmr. Drum Storage Area East of ACE Bldg	Exist. Fuel Oil AST at Fmr. Pilots Ready Rm Bldg		Exterior Pipe Trench at SE Corner of 8,000/8,000 Bldg	
BORING/PROBE ID	E13B25	E15B01	E19B01	E19B02	E22B01	E24B03	E31B01	E35B01	E35B01	E36B01	E39B01	E39B02	E40B01	E42B01	E43B01	E43B01	E44B01	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	11' - 13'	22' - 24'	12' - 14'	10' - 12'	8' - 10'	2' - 4'	8' - 10'	0 - 2'	2' - 4'	0 - 2'	0 - 2'	0 - 2'	2' - 4'	0 - 2'	0 - 2'	2' - 4'	4' - 6'	AND EASTERN USA
DATE OF COLLECTION	07/20/98	07/15/98	07/29/98	07/29/98	07/28/98	07/09/98	07/14/98	07/10/98	07/10/98	07/08/98	07/13/98	07/13/98	07/08/98	07/15/98	07/08/98	07/08/98	07/27/98	BACKGROUND LEVELS
VOCs (ug/kg)																		TAGM Criteria (ug/kg)
Acetone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200
2-Butanone	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300
SVOCs (ug/kg)																		TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	790	--	390	--	--	380	540	--	340	--	--	--	--	--	3,200	224 or MDL
Chrysene	--	--	920	--	550	--	--	--	500	--	--	--	--	--	--	--	3,100	400
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,700	1,100
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2,500	1,100
Benzo(a)pyrene	--	--	820	--	390	--	120	370	500	--	330	--	--	150	98	140	2,800	61or MDL
Dibenzo(a,h)anthracene	--	--	140	--	61	15	19	--	--	--	89	--	--	30	34	34	510	14 or MDL
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
2,4-Dichlorophenol	420	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30
Phenanthrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
Pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	50,000
TOTAL CaPAHs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14,810	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																		Eastern USA/TAGM (mg/kg)
Arsenic	--	38.2	--	--	--	--	--	17.2	--	19.2	--	--	24.7	--	--	--	--	3 - 12
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15 - 600
Cadmium	--	--	--	23.5	--	--	--	--	--	--	--	--	--	--	--	--	--	10
Chromium	--	--	--	92.8	--	--	--	--	--	--	--	--	--	--	--	--	--	50
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	--	--	--	12.0	--	--	--	--	--	--	--	0.21	--	--	--	--	--	0.20
Selenium	--	--	--	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1 - 3.9

Notes:
-- : Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit.

TABLE 4-3
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
PHASE II DELINEATION PROGRAM
INTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	High Voltage Crew Area		OAO Hangar														
BORING/PROBE ID	I18B01A	I18B01A	I27B05A	I27B05A	I27B05N7	I27B05N7	I27B05N7	I27B05N7	I27B05N14	I27B05N14	I27B05N14	I27B05N14	I27B05E7	I27B05E7	I27B05E7	I27B05E14	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	9' - 11'	11' - 13'	5' - 7'	7' - 9'	1' - 3'	3' - 5'	5' - 7'	7' - 9'	1' - 3'	3' - 5'	5' - 7'	7' - 9'	1' - 3'	3' - 5'	7' - 9'	1' - 3'	AND EASTERN USA
DATE OF COLLECTION	10/13/98	10/13/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/27/98	10/27/98	10/27/98	10/27/98	10/14/98	10/14/98	10/14/98	10/27/98	BACKGROUND LEVELS
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	6,100	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	224 or MDL
Chrysene	7,200	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400
Benzo(b)fluoranthene	7,300	15,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(k)fluoranthene	6,800	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,100
Benzo(a)pyrene	6,600	11,000	--	--	--	--	--	--	--	--	200	--	--	--	--	--	61 or MDL
Dibenzo(a,h)anthracene	830	2500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14 or MDL
Indeno(1,2,3-cd)pyrene	--	5,500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,200
Phenol	--	480	--	--	--	--	--	--	--	--	450	84	--	--	--	--	30
2-Methylphenol	--	130	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
TOTAL CaPAHs	34,830	82,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Cadmium	--	--	10 9	16 3	23 6	18 4	14 2	21 4	15 0	18 7	18 1	18 3	21 4	12 5	24 3	20 8	10
Chromium	--	--	--	--	--	--	--	--	--	--	53 4	53 1	--	--	--	--	50
Mercury	--	--	--	--	--	--	--	--	--	--	0 24	0 21	--	--	--	--	0 20

Notes:
-- Concentration did not exceed TAGM criteria or Eastern background levels
MDL Method detection limit

TABLE 4-3 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
PHASE II DELINEATION PROGRAM
INTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	OAO Hangar																
BORING/PROBE ID	I27B05E14	I27B05E14															NYSDEC TAGM CRITERIA AND EASTERN USA BACKGROUND LEVELS
SAMPLE DEPTH	5' - 7'	7' - 9'															
DATE OF COLLECTION	10/27/98	10/27/98															
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--															224 or MDL
Chrysene	--	--															400
Benzo(b)fluoranthene	--	--															1,100
Benzo(k)fluoranthene	--	--															1,100
Benzo(a)pyrene	200	270															61 or MDL
Dibenzo(a,h)anthracene	--	--															14 or MDL
Indeno(1,2,3-cd)pyrene	--	--															3,200
Phenol	--	41															30
2-Methylphenol	--	--															100
TOTAL CaPAHs	--	--															10,000
TOTAL SVOCs	--	--															500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Cadmium	17 0	13 0															10
Chromium	74 2	71 5															50
Mercury	--	--															0 20

Notes.
-- Concentration did not exceed TAGM criteria or Eastern background levels
MDL Method detection limit

TABLE 4-4
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
PHASE II DELINEATION PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Dry Well North of Plant 5 Kitchen along Former Taxiway	Former Sanitary Leaching Pools West of Plant 5															NYSDEC TAGM CRITERIA AND EASTERN USA BACKGROUND LEVELS
BORING/PROBE ID	E04B01A	E12B05A	E12B32	E12B33	E12B33	E12B34	E12B34	E12B36	E12B37	E12B39	E12B39	E12B41	E12B43	E12B44	E12B45	E12B46	
SAMPLE DEPTH	19' - 21'	10' - 12'	12' - 14'	8' - 10'	12' - 14'	10' - 12'	14' - 16'	11' - 13'	10' - 12'	8' - 10'	12' - 14'	10' - 12'	10' - 12'	8' - 10'	10' - 12'	10' - 12'	
DATE OF COLLECTION	10/12/98	10/12/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/05/98	10/06/98	10/06/98	10/06/98	
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	440	--	--	260	2,400	2,000	--	450	--	6,100	1,300	2,200	--	--	224 or MDL
Chrysene	--	--	590	--	--	430	2,500	3,300	--	630	--	7,000	1,600	2,900	--	--	400
Benzo(b)fluoranthene	--	--	--	--	--	--	3,600	4,100	--	--	--	9,900	2,400	3,000	--	--	1,100
Benzo(k)fluoranthene	--	--	--	--	--	--	3,400	3,700	--	--	--	11,000	3,100	4,100	--	--	1,100
Benzo(a)pyrene	91	--	530	--	--	340	2,500	2,000	140	530	62	9,000	1,900	2,200	--	--	61or MDL
Dibenzo(a,h)anthracene	31	--	--	--	--	--	190	--	19	--	20	800	270	--	--	--	14 or MDL
2,4-Dichlorophenol	--	--	--	--	--	--	--	750	--	--	--	--	--	700	--	--	400
Phenol	--	--	--	--	--	--	--	7,200	--	1,000	--	200	110	220	--	--	30
4-Methylphenol	--	--	--	--	--	--	--	990	--	--	--	--	--	--	--	--	900
1,4-Dichlorobenzene	--	--	--	--	--	--	--	11,000	--	--	--	--	--	14,000			8,500
TOTAL CaPAHs	--	--	--	--	--	--	14,590	15,100	--	--	--	43,800	10,570	14,400	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	--	90 6	--	--	--	--	--	13 9	--	--	--	--	--	--	--	--	3 - 12
Cadmium	--	--	--	--	--	--	--	54 2	--	--	--	23 1	--	12 7	--	--	10
Chromium	--	--	--	--	55 2	--	--	290	--	--	--	88 8	--	52 9	--	--	50
Lead	--	--	--	--	--	--	--	711	--	--	--	--	--	--	--	--	200 - 500
Mercury	--	--	0 25	0 34	--	--		12 7	--	--	--	0 41	0 80	6 7	2 3	1 5	0 20
Selenium	--	--	--	--	--	--	--	9 7	--	--	--	--	--	--	--	--	0 1 - 3 9

Notes:
-- Concentration did not exceed TAGM criteria or Eastern background levels.
MDL: Method detection limit

TABLE 4-4 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
PHASE II DELINEATION PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Former Sanitary Leaching Pools West of Plant 5						Unverified Former Sanitary Leaching Pools West of Plant 5										
BORING/PROBE ID	E12B47	E12B48	E12B49	E12B52	E12B53	E12B56	E13B26	E13B29	E13B31	E13B32	E13B33	E13B34	E13B35	E13B36	E13B37	E13B41	NYSDEC TAGM CRITERIA
SAMPLE DEPTH	8' - 10'	10' - 12'	11' - 13'	12' - 14'	14' - 16'	10' - 12'	11' - 13'	8' - 10'	13' - 15'	13' - 15'	13' - 15'	11' - 13'	10' - 12'	11' - 13'	11' - 13'	11' - 13'	AND EASTERN USA
DATE OF COLLECTION	10/06/98	10/06/98	10/15/98	10/26/98	10/26/98	10/26/98	10/06/98	10/09/98	10/06/98	10/07/98	10/07/98	10/07/98	10/08/98	10/07/98	10/07/98	10/08/98	BACKGROUND LEVELS
SVOCs (ug/kg)																	TAGM Criteria (ug/kg)
Benzo(a)anthracene	2,900	--	330	--	--	--	--	16,000	420	--	--	350	250	330	260	--	224 or MDL
Chrysene	3,200	--	440	--	--	--	--	20,000	720	--	--	--	660	840	910	--	400
Benzo(b)fluoranthene	4,200	--	--	--	--	--	--	14,000	1,100	--	--	1,800	--	--	--	--	1,100
Benzo(k)fluoranthene	4,600	--	--	--	--	--	--	17,000	1,100	--	--	1,300	--	1,400	--	--	1,100
Benzo(a)pyrene	3,400	90	520	--	120	--	--	13,000	1,100	--	--	--	--	--	320	--	61or MDL
Dibenzo(a,h)anthracene	390	--	67	--	19	--	--	1,700	--	--	--	--	--	--	--	--	14 or MDL
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	3,200	--	--	3,300	880	3,800	2,200	--	400
Phenol	230	--	--	--	--	--	--	--	300	--	--	270	46	150	140	--	30
4-Methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	900
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8,500
TOTAL CaPAHs	18,690	--	--	--	--	--	--	81,700	--	--	--	--	--	--	--	--	10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	500,000
METALS (mg/kg)																	Eastern USA/TAGM (mg/kg)
Arsenic	--	--	--	--	--	--	--	17.7	72.5	28.2	--	30.2	17.5	16.3	39.3	--	3 - 12
Cadmium	--	--	--	66.6	--	--	--	--	22.9	--	--	14.6	16.2	24.2	--	--	10
Chromium	--	--	--	--	--	--	--	66.4	133	60.5	--	53.9	71.6	88.8	87.5	--	50
Lead	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200 - 500
Mercury	0.60	--	--	6.7	--	2.3	0.79	0.88	9.7	6.2	0.68	6.8	7.6	--	8.9	3.8	0.20
Selenium	--	--	--	--	--	--	--	4.5	10.0	4.8	--	5.1	4.0	6.0	8.1	--	0.1 - 3.9

Notes:
-- Concentration did not exceed TAGM criteria or Eastern background levels
MDL Method detection limit

TABLE 4-4 (continued)
NORTHROP GRUMMAN CORPORATION - PLANT 5
PHASE II SITE ASSESSMENT
PHASE II DELINEATION PROGRAM
EXTERIOR SOIL SAMPLING RESULTS
SUMMARY OF NYSDEC TAGM EXCEEDANCES

AOC ID	Unverified Former Sanitary Leaching Pools West of Plant 5						Areas of Stressed Vegetation					
BORING/PROBE ID	E13B42	E13B43	E13B44	E13B45	E13B48	E13B49	E35B01W7	E35B01W7	E35B01W14			NYSDEC TAGM CRITERIA
SAMPLE DEPTH	10' - 12'	10' - 12'	10' - 12'	10' - 12'	8' - 10'	11' - 13'	0 - 2'	2' - 4'	2' - 4'			AND EASTERN USA
DATE OF COLLECTION	10/08/98	10/08/98	10/07/98	10/08/98	10/15/98	10/15/98	10/15/98	10/15/98	10/27/98			BACKGROUND LEVELS
SVOCs (ug/kg)												TAGM Criteria (ug/kg)
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--			224 or MDL
Chrysene	--	--	--	400	--	--	--	--	--			400
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--			1,100
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--			1,100
Benzo(a)pyrene	--	--	--	--	68	--	--	--	--			61or MDL
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--			14 or MDL
2,4-Dichlorophenol	--	--	620	700	--	--	--	--	--			400
Phenol	--	--	36	47	--	--	--	--	--			30
4-Methylphenol	--	--	--	--	--	--	--	--	--			900
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--			8,500
TOTAL CaPAHs	--	--	--	--	--	--	--	--	--			10,000
TOTAL SVOCs	--	--	--	--	--	--	--	--	--			500,000
METALS (mg/kg)												Eastern USA/TAGM (mg/kg)
Arsenic	26 8	--	18 0	49 7	--	12 2	13 2	15 4	17 7			3 - 12
Cadmium	--	--	--	23 1	--	--	--	--	--			10
Chromium	--	--	52 3	85 9	--	--	--	--	--			50
Lead	--	--	--	--	--	--	--	--	--			200 - 500
Mercury	1 1	0 30	6 4	9 1	--	--	--	--	--			0 20
Selenium	--	--	--	5 7	--	--	--	--	--			0 1 - 3 9

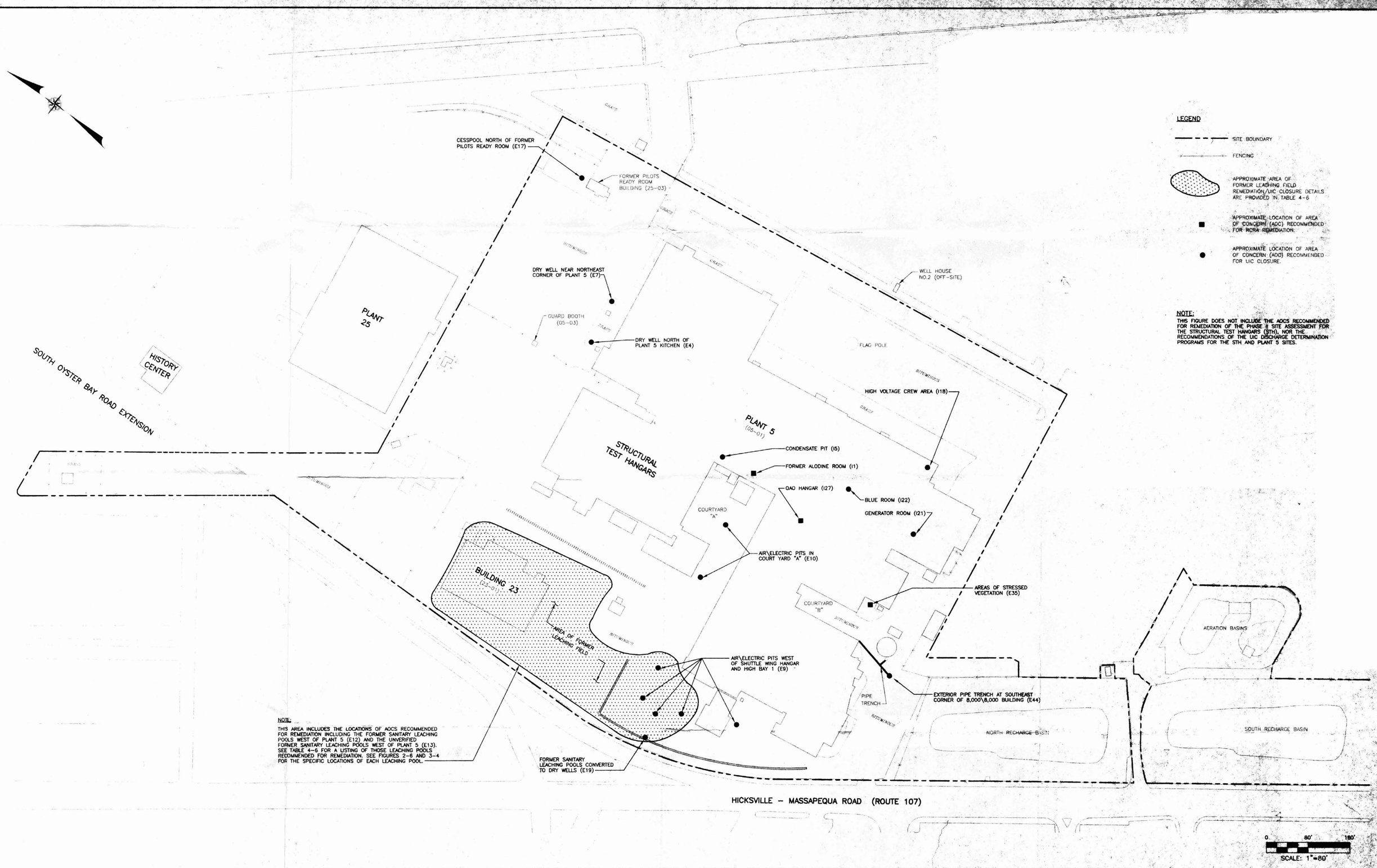
Notes.
-- Concentration did not exceed TAGM criteria or Eastern background levels
MDL Method detection limit

Table 4-5
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Program
INTERIOR AND EXTERIOR AREAS OF CONCERN RECOMMENDED FOR RCRA REMEDIATION OR UIC CLOSURE

Areas of Concern (AOCs)	Boring Location(s)	RCRA Remediation	UIC Closure
Interior AOCs			
Former Alodine Room (I1)	I01C01, 02, 03	■	
Condensate Pit (I5)	I05B01		■
High Voltage Crew Area (I18)	I18B01		■
Generator Room (I21)	I21B01, 02		■
Blue Room (I22)	I22B01		■
OAO Hangar (I27)	I27B05	■	
Exterior AOCs			
Dry Well North of Plant 5 Kitchen along Former Taxiway (E4)	E04B01		■
Dry Well Near Northeast Corner of Plant 5 Building(E7)	E07B01		■
Air/Electric Pits West of Shuttle Wing Hangar and High Bay 1 (E9)	E09B01, 02, 03, 04, 05		■
Air/Electric Pits in Court Yard "A" (E10)	E10B01, 02		■
Cesspool North of Former Pilots Ready Room Building (E17)	E17B01		■
Former Sanitary Leaching Pools Converted to Dry Wells (E19)	E19B02		■
Areas of Stressed Vegetation (E35)	E35B01	■	
Exterior Pipe Trench at Southeast Corner of 8,000/8,000 Building (E44)	E44B01		■

Table 4-6
Northrop Grumman Corporation
Plant 5 - Phase II Site Assessment Program
SANITARY LEACHING POOLS RECOMMENDED FOR RCRA REMEDIATION OR UIC CLOSURE

Areas of Concern (AOCs)	Boring Location(s)	RCRA Remediation	UIC Closure
Former Sanitary Leaching Pools West of Plant 5 (E12)			
	E12B05	■	
	E12B07	■	
	E12B09	■	
	E12B10	■	
	E12B12	■	
	E12B15	■	
	E12B16	■	
	E12B18	■	
	E12B29	■	
	E12B30	■	
	E12B36	■	
	E12B41	■	
	E12B43	■	
	E12B44	■	
	E12B47	■	
	E12B52	■	
Unverified Former Sanitary Leaching Pools West of Plant 5 (E13)			
	E13B01		■
	E13B02		■
	E13B03		■
	E13B24	■	
	E13B26		■
	E13B29	■	
	E13B31	■	
	E13B32	■	
	E13B34	■	
	E13B35	■	
	E13B36	■	
	E13B37	■	
	E13B42	■	
	E13B44	■	
	E13B45	■	



LEGEND

- SITE BOUNDARY
- FENCING
- APPROXIMATE AREA OF FORMER LEACHING FIELD REMEDIATION/UIC CLOSURE DETAILS ARE PROVIDED IN TABLE 4-6
- APPROXIMATE LOCATION OF AREA OF CONCERN (AOC) RECOMMENDED FOR RCRA REMEDIATION.
- APPROXIMATE LOCATION OF AREA OF CONCERN (AOC) RECOMMENDED FOR UIC CLOSURE.

NOTE:

THIS FIGURE DOES NOT INCLUDE THE AOCS RECOMMENDED FOR REMEDIATION OF THE PHASE II SITE ASSESSMENT FOR THE STRUCTURAL TEST HANGARS (STH), NOR THE RECOMMENDATIONS OF THE UIC DISCHARGE DETERMINATION PROGRAMS FOR THE STH AND PLANT 5 SITES.

NOTE:

THIS AREA INCLUDES THE LOCATIONS OF AOCS RECOMMENDED FOR REMEDIATION INCLUDING THE FORMER SANITARY LEACHING POOLS WEST OF PLANT 5 (E12) AND THE UNVERIFIED FORMER SANITARY LEACHING POOLS WEST OF PLANT 5 (E13). SEE TABLE 4-6 FOR A LISTING OF THOSE LEACHING POOLS RECOMMENDED FOR REMEDIATION. SEE FIGURES 2-6 AND 3-4 FOR THE SPECIFIC LOCATIONS OF EACH LEACHING POOL.

0 80' 160'
SCALE: 1"=80'

NORTHROP GRUMMAN CORPORATION
BETHPAGE, NEW YORK
PLANT 5 - PHASE II SITE ASSESSMENT

AREAS OF CONCERN RECOMMENDED FOR RCRA REMEDIATION OR UIC CLOSURE

DVIRKA AND BARTILUCCI
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 4-1

000401F06X

DIR 1539 FILE PLANS-M.DWG LUG/01/03-99