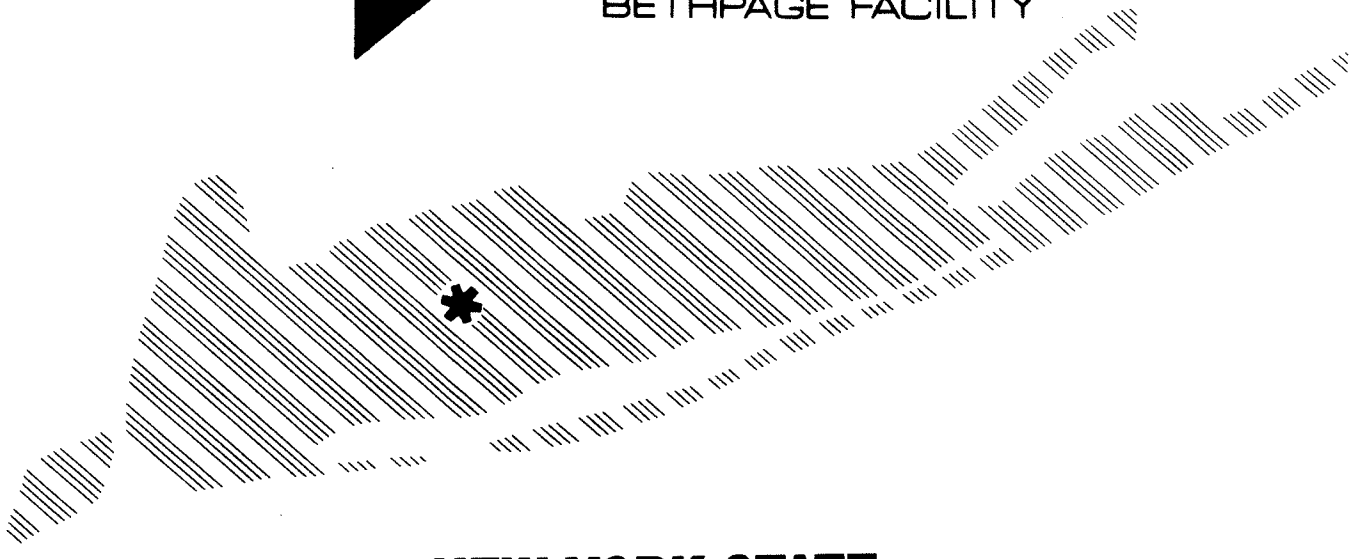
Dvirka and Bartilucci
Consulting Engineers

GRUMMAN AEROSPACE CORPORATION
BETHPAGE FACILITY



NEW YORK STATE SITE REGISTRY DELISTING PETITION PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT

GRUMMAN AEROSPACE CORPORATION
BETHPAGE, NEW YORK

Dvirka and Bartilucci
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MARCH 1992

GRUMMAN AEROSPACE CORPORATION

NEW YORK STATE
SITE REGISTRY DELISTING PETITION
PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT
BETHPAGE, NEW YORK

PREPARED BY
DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
SYOSSET, NEW YORK

MARCH 1992

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GRUMMAN AEROSPACE CORPORATION

NEW YORK STATE
SITE REGISTRY DELISTING PETITION
PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT
BETHPAGE, NEW YORK

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Section 1

1.0 INTRODUCTION

Grumman Aerospace Corporation, has directed the preparation of this report as part of an effort to satisfy the requirements for delisting the property identified as the "Parking Lot" adjacent to the Bethpage Fire Department which is located on the south side of Stewart Avenue, Bethpage, New York, from a New York State superfund site. Information presented in this report has been compiled based upon a site inspection undertaken on January 6, 1992; an evaluation of available aerial photographs, various files and records obtained from the Grumman Aerospace Corporation, Paumanock Development Corporation, the Nassau County Health Department, the Town of Oyster Bay and the United States Environmental Protection Agency (USEPA); along with interviews of various Grumman personnel. The purpose of the report is to determine and document the historical use of the site and the surrounding area. In addition, this report presents the results of laboratory analysis of soil and groundwater samples collected from the site. A "Location Plan" and a "Site Plan" have been included in this document as Appendices A and B, respectively. Additionally, aerial photographs of the site from 1950 through 1988 have been included as Appendix C.

Correspondence from the New York State Department of Environmental Conservation (NYSDEC) to the Grumman Aerospace Corporation listed the "Delist Petition Information" required for the Grumman property. In order to facilitate the review of this document, the 14 items requested in the NYSDEC correspondence are listed on the following table with an appropriate response or cross reference to the location of such response in this document. The information supplied is of sufficient detail to enable the NYSDEC to determine the nature of the site's past and present operations, and assess the potential for any on-site hazardous waste contamination.

GRUMMAN AEROSPACE CORPORATION

NEW YORK STATE
SITE REGISTRY DELISTING PETITION
PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT
BETHPAGE, NEW YORK

Delist Petition Information

	Requirement	Response
1.	Site Name	Grumman, Bethpage
	Owner	Grumman Aerospace Corporation
2.	Site Number	1-30-003
3.	Site Location	South side of Stewart Avenue (west side of Bethpage Fire Dept.) Bethpage, Nassau County, NY 11714
4.	Size	3.93 Acres
5.	Boundaries	See Appendices B and C
6.	Nature of Operation	See Sections 2.1 and 2.2
	Hazardous Waste Disposal	See Section 4
7.	History of Site	See Section 2.1
8.	History of Site Investigations	See Section 2.1 and 3
9.	Waste	See Section 2.2
10.	Affected Resources	See Sections 2.2 and 4
11.	Demographic Information	See Section 2.2
12.	Geographic Information	See Section 2.2
13.	Cleanup Actions	See Section 4
14.	Basis for Delisting	See Section 4

Section 2

2.0 SITE BACKGROUND

Location: South side of Stewart Avenue west of the Bethpage Fire Department
Bethpage, New York 11714

Lot: Part of 50

Block: G

Zoning: Industrial H

Grumman Building: None

Land Use(s): Parking

Plot Size: 3.93 acres

2.1 Site History

A review of available aerial photographs of the area from 1950 to 1988 (see Appendix C) revealed that the site remained undeveloped through 1962. Prior to 1969 the photos show a plowed field while the 1969, 1972 and 1988 photos show the area developed as a paved parking area. From 1988 to the present, the site has remained 100 percent paved.

Visual inspection of the site failed to show any evidence of chemical and/or fuel spills or releases, and aerial photographs show no indication of any aboveground waste storage or disposal facilities.

The 1957 photo indicates that some type of earth moving activity was taking place by the southern property line.

2.2 General Site Description

The site is currently owned by Grumman Aerospace Corporation and is used as a parking area. The entire 3.93-acre site is zoned Industrial H. The site is surrounded by commercial development with areas of medium to high density residential development existing approximately 120 feet from the eastern property line of the site. Appendices A and B present the Location Plan and Site Plan, respectively.

The site is generally level with a drainage system in place which includes catch basins and piping. There are no floodplains or wetlands located on-site. The site is classified as Urban Land by the Soil Conservation Service (SCS, February 1987). Urban land consists of areas where at

least 85 percent of the surface is covered with asphalt, concrete or other impervious building material. Based on measurements obtained during the installation of groundwater monitoring wells at the site as part of this project, the depth from ground surface to the upper glacial aquifer is approximately 57 feet.

2.3 Hooker Chemical Site

One area of concern related to delisting of the Parking Lot site is the proximity of the property to the Hooker Chemical/Ruco Polymer NPL site. This site has been on the Federal Superfund list since 1984, and has been the subject of monitoring and investigations intended to identify the extent of contamination and hazard resulting from previous waste disposal practices at this site. A Remedial Investigation and Feasibility Study (RI/FS) has been conducted, with the associated field work completed in February 1990. The RI/FS, under review by USEPA, has identified two operable units at the Hooker Chemical Site requiring remedial action.

Operable Unit 1 involves the remediation of soil and groundwater contaminated by volatile organic compounds (VOCs) used in the various manufacturing processes employed by the facilities on-site. Operable Unit 2 pertains to a relatively small area of soil contaminated by PCBs resulting from releases of the heat transfer fluid Therminol. The migration of PCBs to other portions of the site, released from the on-site structure referred to as the "Pilot Plant", was enhanced by storm water runoff and on-site truck traffic. However, the extent of the contaminated soil is contained entirely on the Hooker Chemical/Ruco Polymer site. No off-site contamination or remedial activities have been identified with Operable Unit 2.

Until the EPA finalizes its review and releases all details concerning Operable Unit 1, it is not possible to fully characterize the extent of off-site impacts. However, considering that the Grumman property is located approximately 3,750 feet to the east of this area and that the general groundwater flow has a south/southeast direction, the property could be considered removed from significant adverse conditions present at the Hooker Chemical/Ruco Polymer site. In fact, based on the collection and review of available data, including soil and groundwater analytical results, there appears to be no evidence that suggests a hazardous situation at the Parking Lot site.

Section 3

3.0 FIELD PROGRAM

The following is a description of the field activities at the Parking Lot Site, which included the installation of monitoring wells, sampling of groundwater and soil, and air monitoring. Daily Field Activity Reports which are available in the project file provide documentation of the field program.

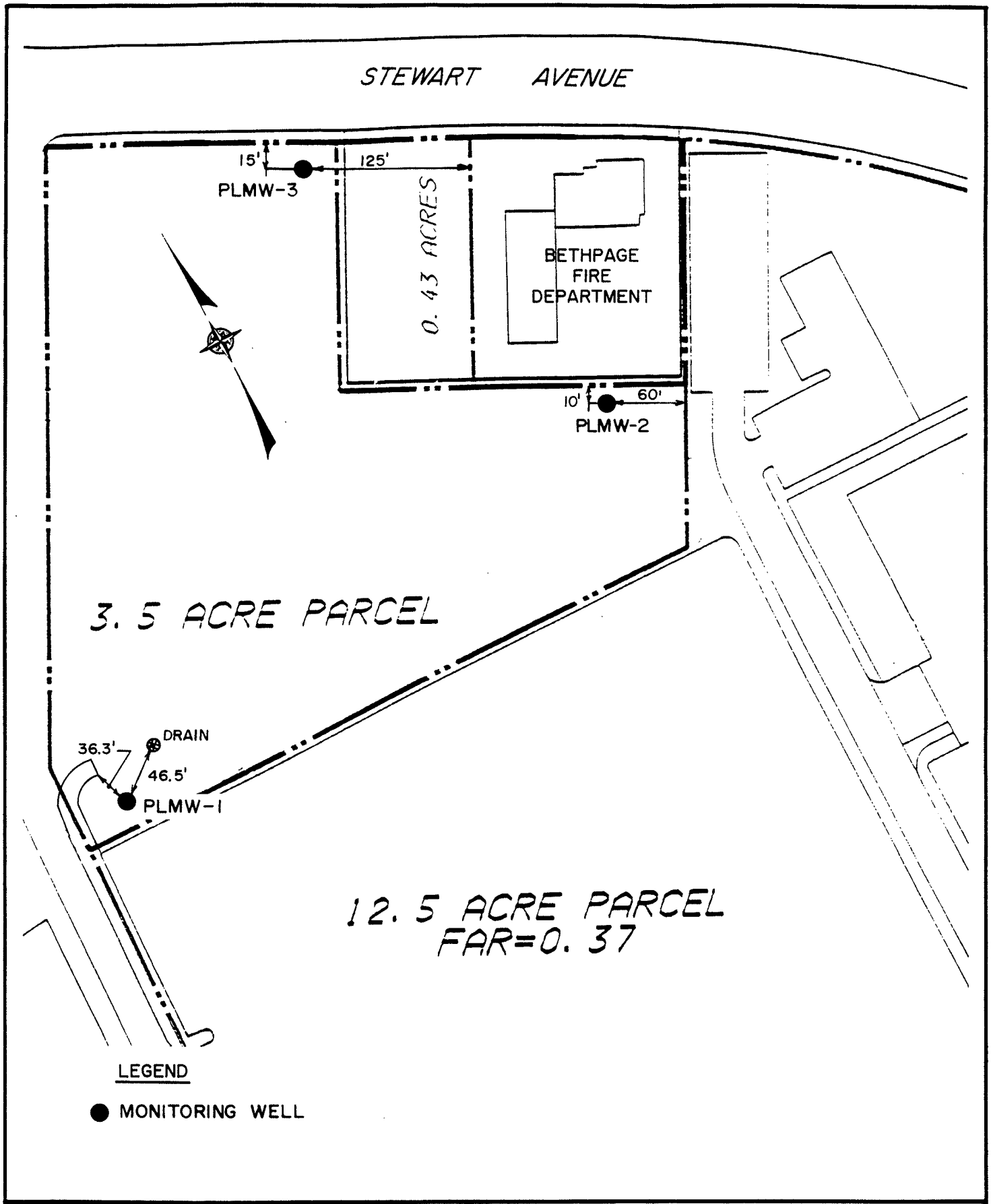
3.1 Monitoring Well Installation

Three shallow monitoring wells were installed at the Parking Lot Site. Figure 3-1 presents the locations of the three wells, and Figures 3-2, 3-3 and 3-4 present the well construction logs for Parking Lot Monitoring Well 1 (PLMW-1), Parking Lot Monitoring Well 2 (PLMW-2), and Parking Lot Monitoring Well 3 (PLMW-3), respectively. All three wells were installed in borings advanced using the hollow stem auger method of drilling. Well construction consisted of 2-inch I.D. PVC screen and casing with threaded joints. The bottom of the 15 foot, 0.010 inch slot screen was sealed with a threaded PVC plug. The bottom of the screen for PLMW-1 was set at a depth of 66 feet below ground surface. The water table was encountered at a depth of 56.4 feet. For PLMW-2, the bottom of the screen was set at a depth of 67 feet, and the water table was encountered at a depth of 56.6 feet. For the third Parking Lot Site well (PLMW-3), the bottom of the screen was set at a depth of 68 feet, and the water table was measured at 57.9 feet below ground surface.

A sandpack was installed around each screen using a tremie pipe. Above the sandpack, a minimum 2 feet thick bentonite seal was installed followed by grouting with a cement/bentonite grout for the remainder of the annulus to the ground surface also using a tremie pipe. All wells were protected with a locking PVC cap and a steel flush mount vault with a bolted cover. Upon completion of the well construction, the wells were developed using a submersible pump and/or bailed. The well was considered developed when the discharge water measured 50 nephelometric turbidity units (NTUs) or less.

3.2 Monitoring Well Borehole Soil Sampling

During construction of all three monitoring wells, split spoon samples were obtained continuously for the first 10 feet and every 5 feet from that point on to the completion depth. Appendix D includes the boring logs for the three Parking Lot monitoring well boreholes.



GRUMMAN CORPORATION
BETHPAGE FACILITY

Dvirka and Bartilucci CONSULTING ENGINEERS

PARKING FIELD
SITE PLAN AND WELL LOCATIONS

FIGURE 3-1

Dvirka and Bartilucci CONSULTING ENGINEERS

WELL CONSTRUCTION LOG

SITE GRUMMAN AEROSPACE CORPORATION JOB NO. 1110 WELL NO. PLMW-1

TOTAL DEPTH 66 SURFACE ELEV. _____ TOP RISER ELEV. _____

WATER LEVELS (DEPTH, DATE, TIME) 56.4 / 2/12/92 DATE INSTALLED 2/12/92

RISER DIA 2" MATERIAL PVC LENGTH 51

SCREEN DIA 2" MATERIAL PVC LENGTH 15' SLOT SIZE 0.010"

SCHEMATIC

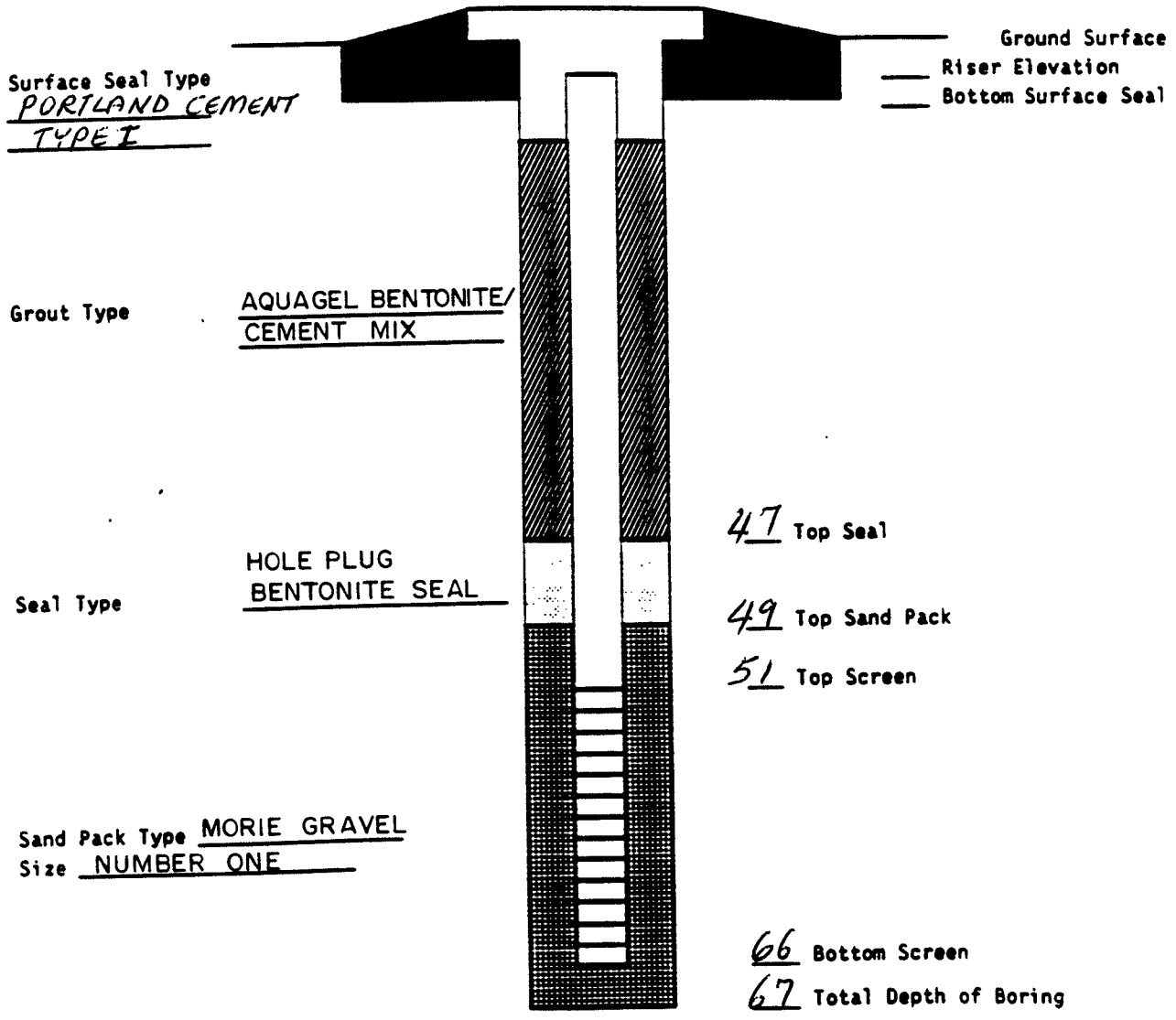


FIGURE 3-2

Dvirka and Bartilucci CONSULTING ENGINEERS

WELL CONSTRUCTION LOG

SITE GRUMMAN AEROSPACE CORPORATION JOB NO. 1110 WELL NO. PLMW-2

TOTAL DEPTH 67 SURFACE ELEV. _____ TOP RISER ELEV. _____

WATER LEVELS (DEPTH, DATE, TIME) 56.6 / 2/14/92 DATE INSTALLED 2/14/92

RISER DIA 2" MATERIAL PVC LENGTH 52

SCREEN DIA 2" MATERIAL PVC LENGTH 15' SLOT SIZE 0.010"

SCHEMATIC

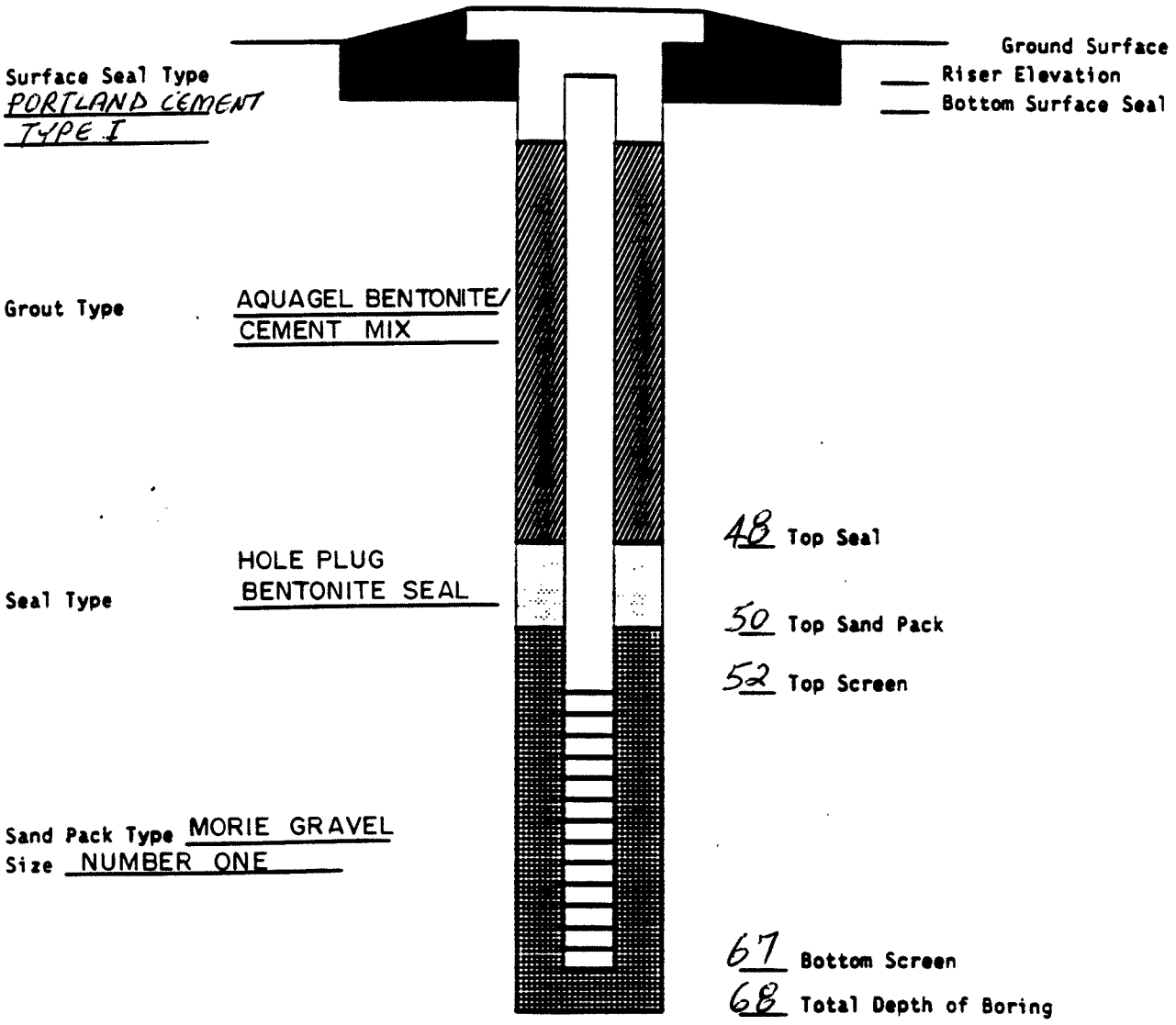


FIGURE 3-3

Dvirka and Bartilucci CONSULTING ENGINEERS

WELL CONSTRUCTION LOG

SITE GRUMMAN AEROSPACE CORPORATION JOB NO. 1110 WELL NO. PLMW-3

TOTAL DEPTH 68' SURFACE ELEV. _____ TOP RISER ELEV. _____

WATER LEVELS (DEPTH, DATE, TIME) 57.93'/9/5 am DATE INSTALLED 2/19/92

RISER DIA 2" MATERIAL PVC LENGTH 53'

SCREEN DIA 2" MATERIAL PVC LENGTH 15' SLOT SIZE 0.010"

SCHEMATIC

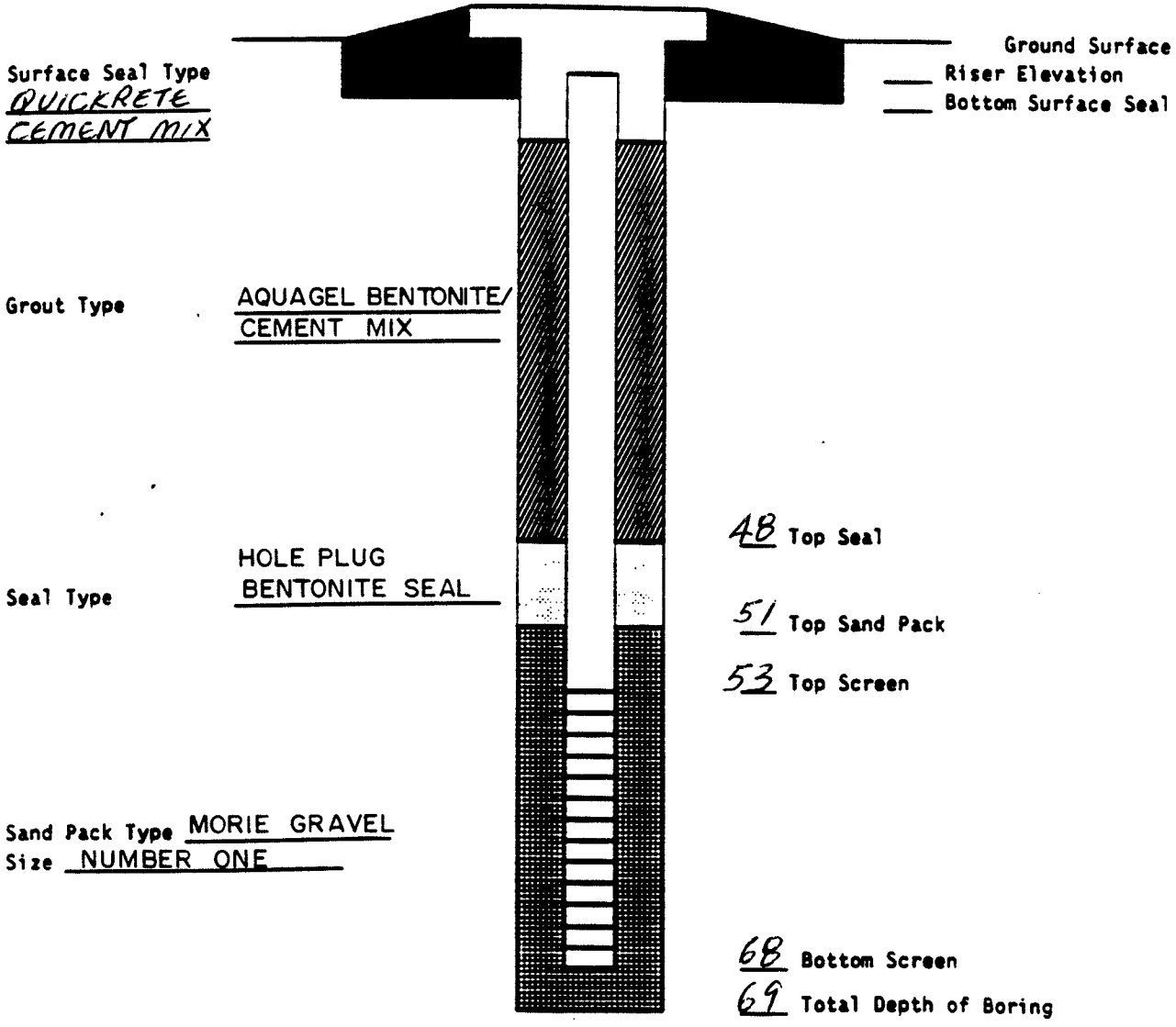


FIGURE 3-4

Based on the information provided from the collection of 16 split spoon soil samples, the soil in the PLMW-1 borehole was identified as gray clay with sand and gravel for the first 6 feet, brown sand and gravel to a depth of 47 feet, followed by a 10-foot layer of medium-fine sand and another 10-foot layer of gray silt, fine sand and clay.

Sixteen split spoon samples were also collected from the PLMW-2 borehole and the PLMW-3 borehole. The split spoon samples indicated that the soil in the area of PLMW-2 was brown sand and gravel for the first 37 feet followed by medium-fine sand to a depth of 67 feet with the exception of a 3-inch layer of clay found at a depth of 45 feet. The samples indicated that the soil in the area of PLMW-3 is mostly brown sand and trace gravel to a depth of about 38 feet followed by a 10-inch layer of silt and trace clay, then mostly fine-medium sand to a depth of 52 feet. Between 52 and 65.7 feet, mostly coarse sand was encountered followed by a 7-inch layer of silt and fine sand with a layer of medium sand and gravel from 57 to 59 feet.

At the PLMW-1 borehole, no readings were detected above ambient utilizing an organic vapor analyzer (OVA). In the PLMW-2 borehole, a 40 ppm reading was obtained from the split spoon sample collected between 55 and 57 feet, and a 6 ppm reading was obtained from the sample collected between 60 and 62 feet. In the PLMW-3 borehole, readings in the range of 2 ppm to 10 ppm above ambient were obtained throughout the depth of the borehole with the highest reading obtained from the sample collected at a depth of 2 to 4 feet. There was no apparent indication of contamination in any of the three boreholes associated with discoloration, odor or soil texture. Soil samples for laboratory analysis were obtained from the split spoon samples collected at the 4 to 6 foot interval from PLMW-1 and at the 2 to 4 foot interval from PLMW-2 and PLMW-3. The split spoon sample collected from the 55 to 57 foot interval at the PLMW-2 borehole was not submitted for laboratory analysis since it was immediately adjacent to the top of the groundwater table and any suspected contamination would be detected by the collection and analysis of a groundwater sample. As will be discussed later in this report, the analyses of groundwater at PLMW-2 did not detect any organic constituents. Therefore, it is likely that the OVA reading was likely due to methane. The soil samples were analyzed for volatile organics using USEPA SW-846, Method 8010/8020 and total petroleum hydrocarbons (TPHCs) using USEPA Method 418.1.

3.3 Groundwater Sampling

Prior to well sampling, a minimum of three times the volume of standing water in the casing and sandpack from each well was removed with a bailer. One sample was collected from each well for laboratory analysis. The water samples were analyzed for volatile organics using Method 624. The groundwater samples were also analyzed for metals using USEPA SW-846 Method 6010. It should be noted that while the 13 metals associated with Method 6010 were selected for analysis due to their inherent toxicity, the analytical results of all 23 metals associated with this method were reported by the laboratory.

3.4 Volatile Organics Monitoring

During the drilling of the three Parking Lot monitoring wells, no volatile organic vapors were detected in the workers' breathing zone. The air monitoring results were documented daily in the Air Monitoring Forms which are available in the project file. Prior to use, the organic vapor analyzer (OVA-128) was calibrated with 95 percent methane gas/zero air. Equipment Calibration Logs are also available in the project file. The split spoon samples were also monitored for volatile organics utilizing the OVA-128.

Section 4

4.0 FINDINGS AND CONCLUSIONS

A site inspection performed on January 6, 1992 did not identify any visual evidence of any chemical and/or fuel spills or releases and does not appear to present any environmental concerns requiring remediation.

The volatile organic results for groundwater samples were compared to the New York State Department of Health drinking water standards. Soil sample results are compared to standards published pursuant to the New Jersey State Environmental Cleanup Responsibility Act (ECRA) program since New York State does not have adopted soil standards. The results are discussed in detail by matrix in the following sections.

4.1 Monitoring Well Borehole Soil Sampling

One soil sample was collected from each of the three monitoring wells and analyzed for volatile organics and total petroleum hydrocarbons (TPHCs). The chemical analyses of soil samples are presented on Table 4-1, and the soil sampling field and trip blank volatile organic and TPHC results are presented on Table 4-2.

In both the PLMW-1 and PLMW-2 samples, methylene chloride was detected in the soil samples collected. In sample PLMW-1, methylene chloride was detected at 3.0 ug/kg, and in sample PLMW-2, at 2.0 ug/kg. However, since methylene chloride was also detected in the field and trip blanks, as well as the method blanks, and the compound is a common laboratory chemical, the detection can be attributed to laboratory contamination.

The levels of total petroleum hydrocarbons for PLMW-1, PLMW-2 and PLMW-3 are also presented on Table 4-1. In sample PLMW-1, the level of TPHC was detected at 96.4 mg/kg. This sample was collected at a depth of 4 to 6 feet below ground surface from the borehole downgradient of the site. In sample PLMW-2, collected from a depth of 2 to 4 feet below ground surface, TPHCs were not detected. At the PLMW-3 location, TPHCs were detected at a concentration of 30.4 ug/kg in the soil sample collected from the 2 to 4 foot depth interval. All TPHC results were below the 100 ppm action level defined by the New Jersey State Department of Environmental Protection ECRA program. The concentration of total petroleum hydrocarbons (TPHCs) detected in these samples is not atypical of shallow subsurface locations overlain by areas of extensive asphalt pavement as is exhibited by this site.

TABLE 4-1
GRUMMAN AEROSPACE CORPORATION
PARKING LOT - SOIL SAMPLING
VOLATILE ORGANIC AND TOTAL PETROLEUM HYDROCARBON
RESULTS

	PLMW-1 2/11/92	PLMW-2 2/13/92	PLMW-3 2/18/92
VOLATILE COMPOUNDS	(ug/kg)	(ug/kg)	(ug/kg)
Chloromethane	U	U	U
Bromomethane	U	U	U
Vinyl Chloride	U	U	U
Chloroethane	U	U	U
Methylene Chloride	3 TB	2 TB	U
1,1-Dichloroethene	U	U	U
1,1-Dichloroethane	U	U	U
1,2-Dichloroethene (trans)	U	U	U
Chloroform	U	U	U
1,2-Dichloroethane	U	U	U
1,1,1-Trichloroethane	U	U	U
Carbon Tetrachloride	U	U	U
Bromodichloromethane	U	U	U
1,2-Dichloropropane	U	U	U
cis-1,3-Dichloropropene	U	U	U
Trichloroethene	U	U	U
Dibromochloromethane	U	U	U
1,1,2-Trichloroethane	U	U	U
Benzene	U	U	U
Trans-1,3-Dichloropropene	U	U	U
Tetrachloroethene	U	U	U
1,1,2,2-Tetrachloroethane	U	U	U
Toluene	U	U	U
Chlorobenzene	U	U	U
Ethylbenzene	U	U	U
Xylene (total)	U	U	U
2-Chloroethylvinylether	U	U	U
Dichlorodifluoromethane	U	U	U
Trichlorofluoromethane	U	U	U
1,2-Dichlorobenzene	U	U	U
1,3-Dichlorobenzene	U	U	U
1,4-Dichlorobenzene	U	U	U
Bromoform	U	U	U
Total Petroleum Hydrocarbons (mg/kg)	96.4	U	30.4

QUALIFIERS
U: analyzed for but not detected
B: compound found in blank as well as sample
T: targeted compound found above the detection limit

TABLE 4-2
GRUMMAN AEROSPACE CORPORATION
SOIL SAMPLING FIELD BLANK AND TRIP BLANK
VOLATILE ORGANIC AND TOTAL PETROLEUM HYDROCARBON
RESULTS

	FIELD BLANK 1/24/92	TRIP BLANK 1/24/92
VOLATILE COMPOUNDS	(ug/l)	(ug/l)
Chloromethane	U	U
Bromomethane	U	U
Vinyl Chloride	U	U
Chloroethane	U	U
Methylene Chloride	2 TB	2 TB
1,1-Dichloroethene	U	U
1,1-Dichloroethane	U	U
1,2-Dichloroethene (trans)	U	U
Chloroform	U	U
1,2-Dichloroethane	U	U
1,1,1-Trichloroethane	U	U
Carbon Tetrachloride	U	U
Bromodichloromethane	U	U
1,2-Dichloropropane	U	U
cis-1,3-Dichloropropene	U	U
Trichloroethene	U	U
Dibromochloromethane	U	U
1,1,2-Trichloroethane	U	U
Benzene	U	U
Trans-1,3-Dichloropropene	U	U
Tetrachloroethene	U	U
1,1,2,2-Tetrachloroethane	U	U
Toluene	U	U
Chlorobenzene	U	U
Ethylbenzene	U	U
Xylene (total)	U	U
2-Chloroethylvinylether	U	U
Dichlorodifluoromethane	U	U
Trichlorofluoromethane	U	U
1,2-Dichlorobenzene	U	U
1,3-Dichlorobenzene	U	U
1,4-Dichlorobenzene	U	U
Bromoform	U	U
Total Petroleum Hydrocarbons (mg/kg)	U	NR

QUALIFIERS
U: analyzed for but not detected
B: compound found in blank as well as sample
T: targeted compound found above the detection limit
NR: Analysis not requested

4.2 Groundwater Sampling

One groundwater sample was collected from each monitoring well and analyzed for volatile organic and inorganic constituents. Table 4-3 presents the volatile organic results and Table 4-4 presents the volatile organic results for the field and trip blanks associated with the groundwater sampling program. In sample PLMW-1, the compound methylene chloride was found at a concentration of 3.67 ug/l. Methylene chloride was also detected in the field and trip blanks associated with this sampling episode. As was mentioned above, methylene chloride is a commonly used laboratory reagent. Since the compound was detected in the trip and field blanks, as well as the environmental sample, its presence can be attributable to laboratory contamination. No targeted compounds were detected in the groundwater samples from PLMW-1 or PLMW-2. In sample PLMW-3, the compound tetrachloroethene was detected at a concentration of 3.04 ug/l, which is below the NYSDOH drinking water standard of 5 ug/l.

The results of inorganic analysis for the groundwater samples and associated field blank are presented on Tables 4-5 and 4-6, respectively. In sample PLMW-1, no inorganic constituents were detected above NYSDOH drinking water standards. In samples PLMW-2 and PLMW-3, iron was detected at a concentration of 0.31 mg/l and 0.50 mg/l, respectively. In addition, manganese was detected in PLMW-3 at 0.42 mg/l. While these values are slightly above the NYSDOH drinking water standards, they are elements commonly found in groundwater on Long Island and not attributable to the site.

4.3 Conclusions

Based on the above findings and on the review of available data we believe that the property is eligible for delisting under New York State regulations.

TABLE 4-3
GRUMMAN AEROSPACE CORPORATION
PARKING LOT - GROUNDWATER SAMPLING
VOLATILE ORGANIC
RESULTS

VOLATILE COMPOUNDS	PLMW-1 (2/25/92) (ug/l)	PLMW-2 (2/25/92) (ug/l)	PLMW-3 (2/25/92) (ug/l)	NYSDOH DRINKING WATER STANDARDS (ug/l)
Chloromethane	U	U	U	5
Bromomethane	U	U	U	5
Vinyl Chloride	U	U	U	2
Chloroethane	U	U	U	5
Methylene Chloride	3.67 J	U	U	5
1,1-Dichloroethene	U	U	U	5
1,1-Dichloroethane	U	U	U	5
1,2-Dichloroethene (total)	U	U	U	5
Chloroform	U	U	U	100
1,2-Dichloroethane	U	U	U	5
1,1,1-Trichloroethane	U	U	U	5
Carbon Tetrachloride	U	U	U	5
Bromodichloromethane	U	U	U	100
1,2-Dichloropropane	U	U	U	5
cis-1,3-Dichloropropene	U	U	U	5
Trichloroethene	U	U	U	5
Dibromochloromethane	U	U	U	100
1,1,2-Trichloroethane	U	U	U	5
Benzene	U	U	U	5
Trans-1,3-Dichloropropene	U	U	U	5
Tetrachloroethene	U	U	3.04 J	5
1,1,2,2-Tetrachloroethane	U	U	U	5
Toluene	U	U	U	5
Chlorobenzene	U	U	U	5
Ethylbenzene	U	U	U	5
Xylene (total)	U	U	U	5*
2-Chloroethylvinylether	U	U	U	----
Dichlorodifluoromethane	U	U	U	5
1,2-Dichlorobenzene	U	U	U	5
1,3-Dichlorobenzene	U	U	U	5
1,4-Dichlorobenzene	U	U	U	5
Bromoform	U	U	U	100

QUALIFIERS
U: analyzed for but not detected
J: compound found below detection limit

NOTES
----: Not established
*: Applies to each isomer individually

TABLE 4-4
GRUMMAN AEROSPACE CORPORATION
GROUNDWATER SAMPLING - FIELD BLANK AND TRIP BLANK
VOLATILE ORGANIC
RESULTS

	FIELD BLANK (2/24/92)	TRIP BLANK (2/24/92)
VOLATILE COMPOUNDS	(ug/l)	(ug/l)
Chloromethane	U	U
Bromomethane	U	U
Vinyl Chloride	U	U
Chloroethane	U	U
Methylene Chloride	4.56 JB	3.74 J
1,1-Dichloroethene	U	U
1,1-Dichloroethane	U	U
1,2-Dichloroethene (total)	U	U
Chloroform	U	U
1,2-Dichloroethane	U	U
1,1,1-Trichloroethane	U	U
Carbon Tetrachloride	U	U
Bromodichloromethane	U	U
1,2-Dichloropropane	U	U
cis-1,3-Dichloropropene	U	U
Trichloroethene	U	U
Dibromochloromethane	U	U
1,1,2-Trichloroethane	U	U
Benzene	U	U
Trans-1,3-Dichloropropene	U	U
Tetrachloroethene	U	U
1,1,2,2-Tetrachloroethane	U	U
Toluene	U	U
Chlorobenzene	U	U
Ethylbenzene	U	U
Xylene (total)	U	U
2-Chloroethylvinylether	U	U
Dichlorodifluoromethane	U	U
1,2-Dichlorobenzene	U	U
1,3-Dichlorobenzene	U	U
1,4-Dichlorobenzene	U	U
Bromoform	U	U

QUALIFIERS
U: analyzed for but not detected
B: compound found in blank as well as sample
J: compound found below detection limit

TABLE 4-5
GRUMMAN AEROSPACE CORPORATION
PARKING LOT - GROUNDWATER
INORGANIC CONSTITUENT
RESULTS

	PLMW-1 2/25/92	PLMW-2 2/25/92	PLMW-3 2/25/92	NYSDOH DRINKING WATER STANDARDS
CONSTITUENTS	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Aluminum	0.30	0.62	0.54	----
Antimony	U	U	U	----
Arsenic	U	U	U	0.05
Barium	U	U	U	1
Beryllium	U	U	U	----
Cadmium	U	U	U	0.01
Calcium	22.1	44.8	29.3	----
Chromium	U	U	U	0.05
Colbalt	U	U	U	----
Copper	U	U	U	1
Iron	0.12	0.31	0.50	0.3
Lead	U	U	U	0.05
Magnesium	3.25	4.49	4.18	----
Manganese	0.09	0.08	0.42	0.3
Mercury	U	U	U	0.002
Nickel	U	U	U	----
Potassium	4.81	4.90	3.16	----
Selenium	U	U	U	0.01
Silver	U	U	U	0.05
Sodium	57.3	38.7	25.5	----
Thallium	U	U	U	----
Vanadium	U	U	U	----
Zinc	0.13	0.26	0.07	5

QUALIFIERS:
U: Analyzed for but not detected

NOTES:
----: Not established
: Exceeds standard value

TABLE 4-6
GRUMMAN AEROSPACE CORPORATION
GROUNDWATER SAMPLING FIELD BLANK
INORGANIC CONSTITUENT
RESULTS

	FIELD BLANK 2/24/92
CONSTITUENTS	(mg/L)
Aluminum	U
Antimony	U
Arsenic	U
Barium	U
Beryllium	U
Cadmium	U
Calcium	U
Chromium	U
Colbalt	U
Copper	U
Iron	U
Lead	U
Magnesium	U
Manganese	U
Mercury	U
Nickel	U
Potassium	U
Selenium	U
Silver	U
Sodium	U
Thallium	U
Vanadium	U
Zinc	U

QUALIFIERS:
U: Analyzed for but not detected

Section 5

5.0 REFERENCES

USEPA - Region 2, Proposed Plan Superfund Update Hooker Chemical/Ruco Polymer Site, Hicksville, New York, July 1990.

USEPA, Declaration for Record of Decision, Hooker Chemical/Ruco Polymer Site, Hicksville, Nassau County, New York, September 1990.

EBASCO, Final Work Plan RI/FS Hooker Chemical/Ruco Polymer Superfund Site, EPA Contract 68-01-7250, Work Assignment No. 186-2443, September 1988.

Legette, Brashear & Graham, Final Field Operations Plan, August 1989.

Legette, Brashear & Graham, Focused Feasibility Study for Remediation of Soils Containing Arochlor 1248 for Occidental Chemical Corp., June 1990.

LKB Aerial Photographs: April 11, 1950; January 20, 1955; January 24, 1957; March 23, 1962; April 11, 1969; April 18, 1972; March 8, 1988.

APPENDIX A

Location Plan

NOTE: CONTOURS BASED ON 1988 GROUNDWATER ELEVATIONS

PARKING LOT

BETHPAGE FIRE DEPT.

GROUNDWATER FLOW DIRECTION

HOOKER CHEMICAL SITE GROUNDWATER FLOW DIRECTION

TOWN OF OYSTER BAY RECREATION AREA

GRUMMAN AEROSPACE

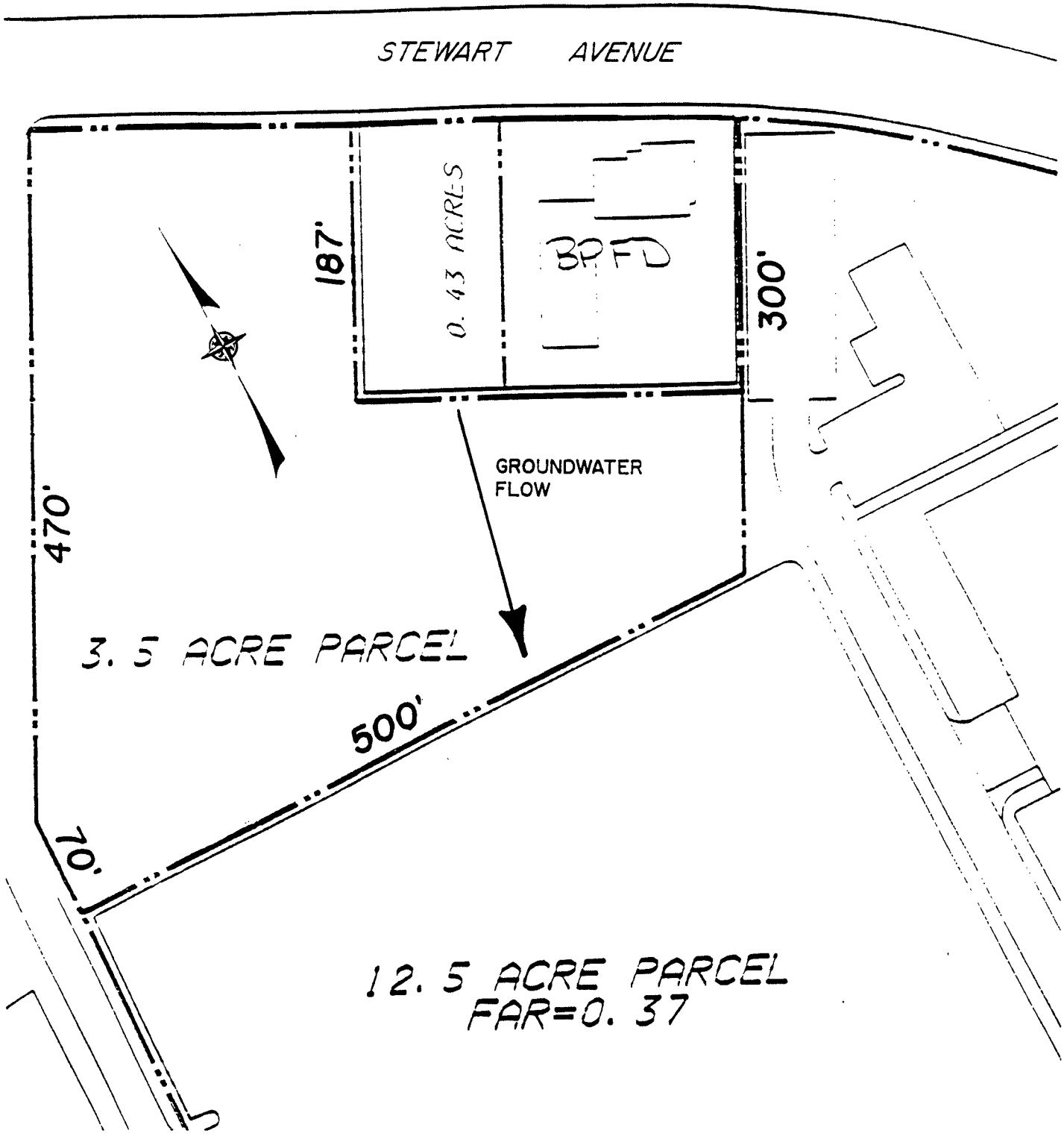
GRUMMAN CORPORATION
BETHPAGE FACILITY

PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT
LOCATION MAP

Dvirka and Bartilucci CONSULTING ENGINEERS

APPENDIX B

Site Plan



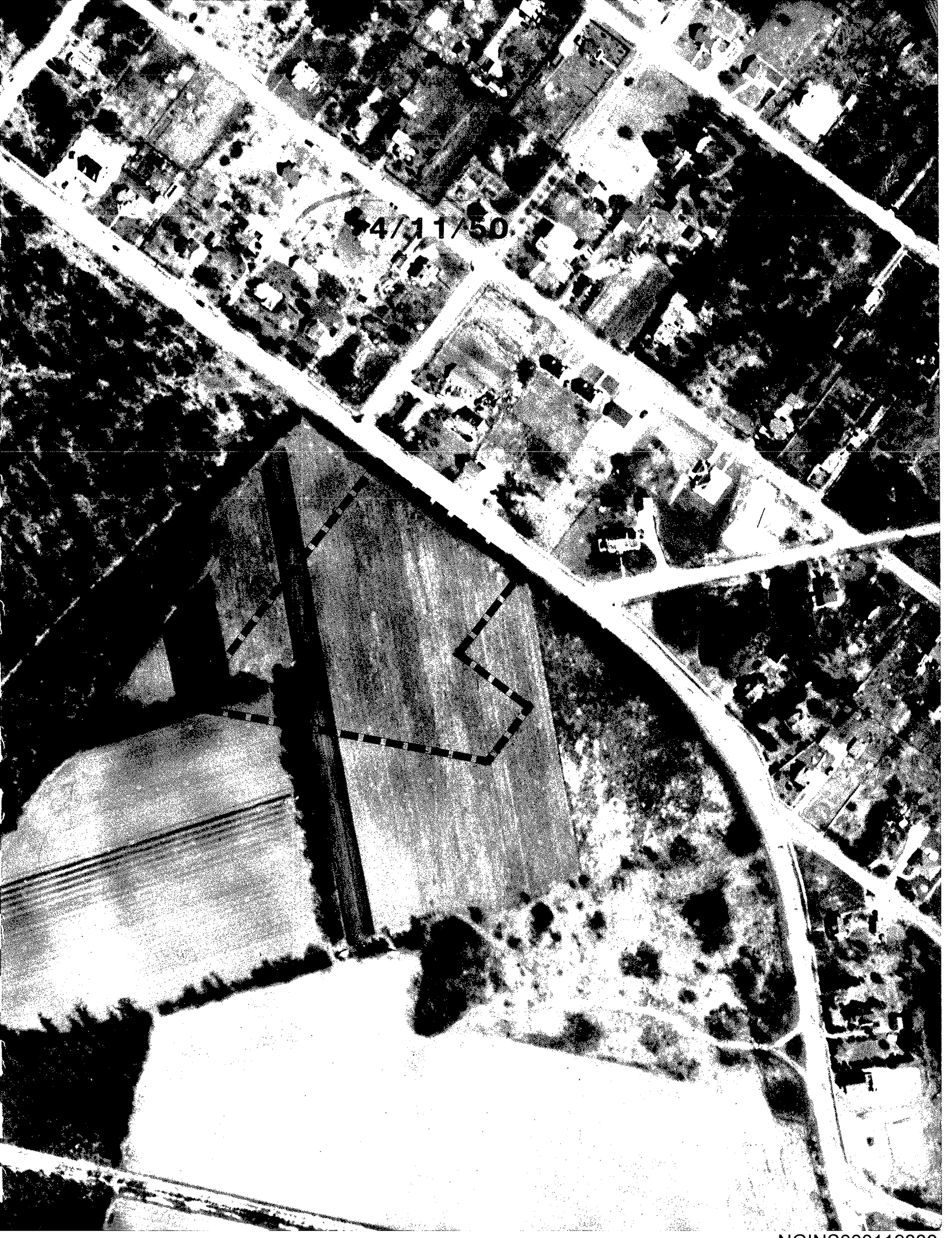
GRUMMAN CORPORATION
BETHPAGE FACILITY

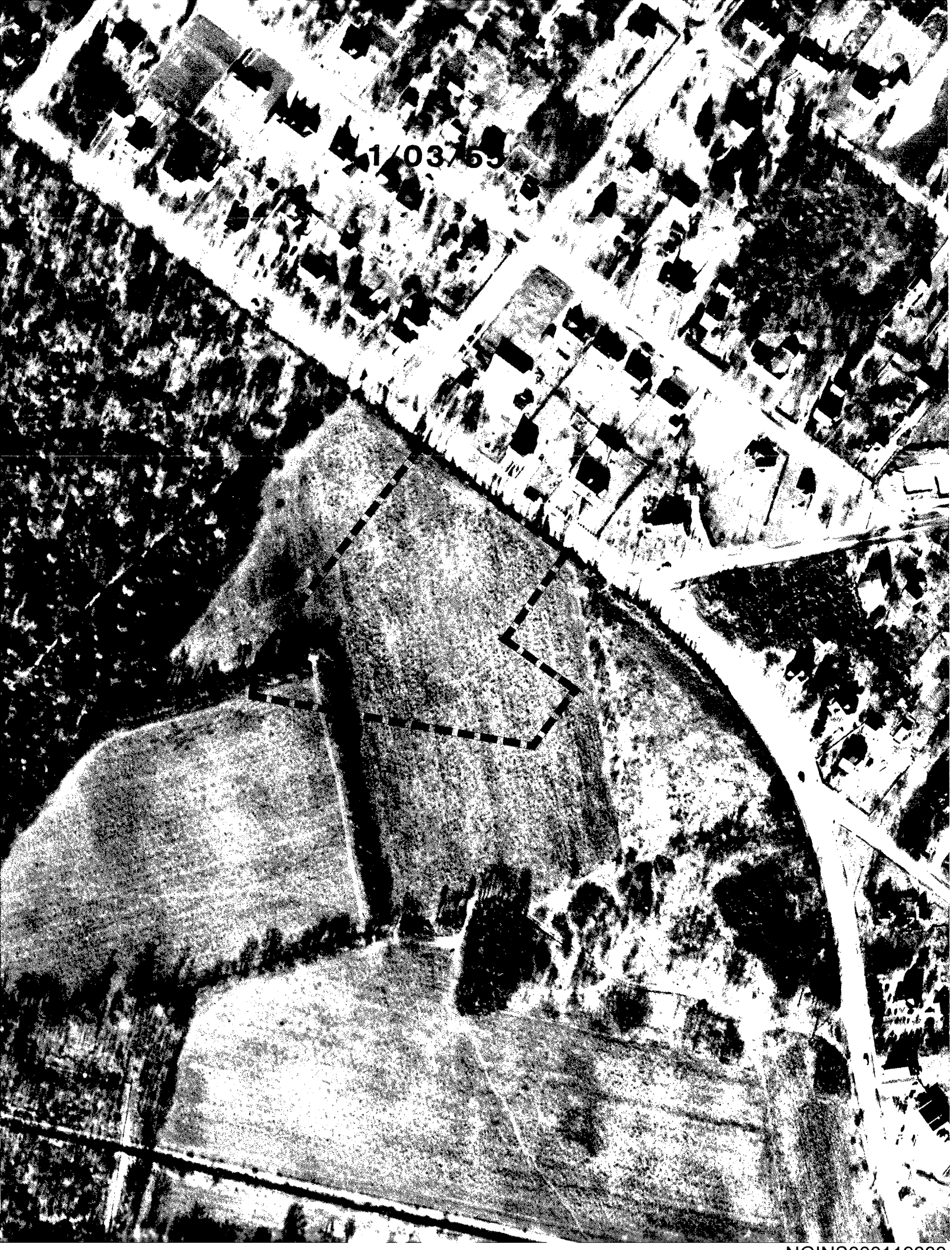
PARKING LOT ADJACENT TO BETHPAGE FIRE DEPARTMENT SITE PLAN

Dvirka and Bartilucci CONSULTING ENGINEERS

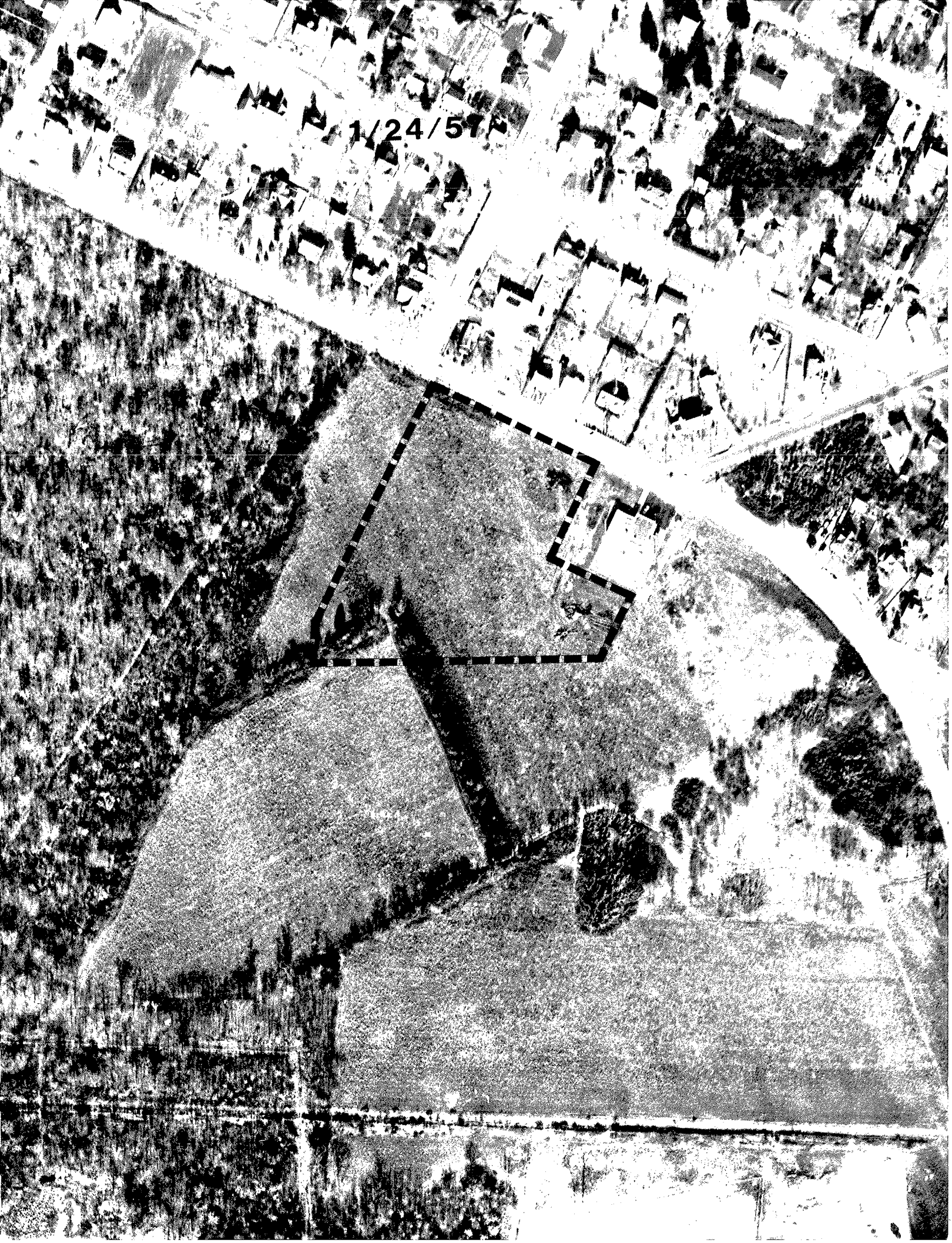
APPENDIX C

Aerial Photographs
(1950-1988)





NGINS000119883



NGINS000119884

NGINS000119888

APPENDIX D

Boring Logs

DVIRKA AND BARTILUCCI

Project No.:
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 1 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/4/92
Geologist: Keith Robins
Drilling Method: Hollow stem Auger
Drive Hammer Wt.: 210 lb
Date Completed: 2/12/92

Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.:

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-		0-2'	17"	2,2, 3,3	0	Asphalt Brown - coarse - medium sand, some silt, some subrounded gravel (moist)
-1-						0-2" 2"-15" 2'
-2-						
-3-		2-4'	20"	2,2, 3,3	0	Gray clay, trace silt, and trace medium sand, trace subrounded gravel, (moist) 4'
-4-						
-5-		4-6'	17"	4,20 16,24	0	Gray clay, little silt 0-5" Brown coarse sand, abundant subangular gravel (quartz) 5"-10" (Moist) 6'
-6-						
-7-		6-8'	11"	4,13, 16,21	0	Brown silt, little clay, trace subrounded gravel 0-3" Brown coarse sand, subrounded - subangular gravel 3"-11" (damp) 8'
-8-						
-9-		8-10'	19"	12,14 14,12	0	Light Brown coarse - medium sand, some subrounded - subangular grabel (quartz) (dump) 10'
-10-						

Remarks:
Soil sample (4-6') obtained for Laboratory analysis

Water Level Measurement 56.4 Date 2/17/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.:
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 2 of 2
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/6/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 2/7/92

Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
11-12-13-14-15-						
15-16-		15-17'	16"	4,8, 6,12	0	Light Brown coarse-medium sand, abundant subrounded-subangular gravel (quartz) (dump) 17'
17-18-19-20-						
20-21-		20-22'	17"	4,10, 16,17	0	Brown-Light Brown coarse-medium Sand, abundant subrounded-subangular gravel (quartz), little iron fragments (dump) 22'

Remarks:

Water Level Measurement 56.4' Date 2/11/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: [illegible]
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 3 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes JR
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/11/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 2/12/92

Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
~~22~~ ~~23~~ ~~24~~ ~~25~~						
~~26~~ 27		25-27	15"	6,6, 12,12	0	Light Brown medium-coarse sand abundant quartz fragments, subrounded-subAngular gravel (damp) 27'
~~28~~ ~~29~~ ~~30~~						
~~31~~ ~~32~~		30-32	15"	5,5, 8,12	0	Light Brown medium-coarse sand, some subangular-subrounded gravel, trace, iron fragments, trace Biotite (damp) 32'

Remarks:

Water Level Measurement 56.4 Date 2/17/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.:
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 4 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burns Jr
Drill Rig: Gus Pech
Sample Spoon I.D.: 1 3/8
Date Started: 2/4/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 340 lbs.
Date Completed: 2/12/92
Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.:

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
33-0- 34-1- 35-2-						
36-3- 37-4-		35-37'	14"	8,8, 8,12	0	Light Brown coarse-medium sand, abundant subangular gravel, some quartz fragments, trace iron fragments (damp) 37'
38-5- 39-6- 40-7-						
41-8- 42-9-		40-42'	18"	4,10) 20,22	0	Light Brown medium-fine sand 0-4" Brown coarse-medium sand, 4"-18" some subrounded gravel (quartz) Little iron fragments (Moist) 42'
43-10-						

Remarks:

Water Level Measurement 56.4 Date 2/11/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: RL-MW-1
Sheet 5 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr. Geologist: Keith Robins
Drill Rig: Gus Peck Drilling Method: Hollow stem Auger
Sample Spoon I.D.: 1 3/8 Drive Hammer Wt.: 210 lbs
Date Started: 2/11/92 Date Completed: 2/12/92

Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
44-45						
46-47		45-47'	12"	4,8, 20,23	0	Brown coarse-medium sand abundant subrounded-subangular gravel (quarty) trace iron fragments (damp) 47'
48-49						
50-51		50-52	17"	8,12, 24,23	0	Light Brown-white, medium-fine sand, (subrounded), trace muscovite. (damp) 52'
52-53						
54-55						

Remarks:

Water Level Measurement 56.4' Date 2/11/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 6 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burgess Jr
Drill Rig: Gus Rock
Sample Spoon I.D.: 3/8
Date Started: 2/11/92
Geologist: Keith Rubins
Drilling Method: Hollow stem Augers
Drive Hammer Wt.: 240 lbs.
Date Completed: 2/12/92

Borehole Completion Depth: 67
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
55-56						
56-57		55-57	17"	5,6, 11,13	0	Brown - orange medium - fine sand, some silt, trace muscovite wet (saturated) 57'
57-58						
58-59						
59-60						
60-61						
61-62		60-62	22"	4,4, 7,9	0	Light Gray silt, some fine sand. 0-7" Light gray silt, Little clay, 7"-22" Altering inches of (Fe) iron and biotite mica layers wet (saturated) 62'
62-63						
63-64						
64-65						
65-66		65-67				

Remarks: Soil sample (65-67') description on following page.

Water Level Measurement 56.4 Date 2/11/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-1
Sheet 7 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burns Jr
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/11/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 2 lb/65
Date Completed: 2/12/92

Borehole Completion Depth: 67'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
66		65-67'	15"	4,5, 10,13	0	Light gray silt, some fine sand, trace clay, trace muscovite. 0-7" Light brown-gray medium-fine sand, trace silt. (wet)(saturated) 67' 9"-15"
67						
68						
69						
70						
71						
72						
73						
74						
75						

Remarks:

Water Level Measurement 56.4' Date 2/11/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: Parking Lot-mw-2
Sheet 1 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/13/92
Geologist: Keith Robins
Drilling Method: Hollow stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 2/13/92

Borehole Completion Depth: 68'
Borehole Diameter: 10"
Ground Surface El.:

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-		0-2'	15"	6,6, 6,6	0	Asphalt Dark Brown - Black, medium-fine sand, Little silt, some fine subrounded gravel Brown fine medium sand, some subrounded gravel. (moist) 2'
-1-						0-2" 2"-10" 10"-15"
-2-						
-3-		2-4'	14"	10,10, 10,20	0	Brown - Dark Brown coarse-fine sand. some Subangular gravel. (moist) 4'
-4-						
-5-		4-6'	19"	9,13, 20,20	0	Brown-orange course-medium sand abundant course subangular gravel (quartz) (moist) 6'
-6-						
-7-		6-8'	12"	6,9 19	0	Brown - Light Brown course-fine sand, trace silt, abundant subrounded-subangular gravel (quartz) fragments (damp) 8'
-8-						
-9-		8-10'	18"	13,20, 20,15	0	Light Brown course-medium sand abundant subrounded-subangular gravel (14"-18") (quartz) (damp) 10'
-10-						

Remarks:

Water Level Measurement 56.6' Date 2/14/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-mw-2
Sheet 2 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes JR
Drill Rig: Gus Pech
Sample Spoon I.D.: 1 3/8
Date Started: 2/13/92
Geologist: Keith Robins
Drilling Method: Hollow stem Auger
Drive Hammer Wt.: 210 lbs.
Date Completed: 2/13/92

Borehole Completion Depth: 68'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
11-0						
12-1						
13-2						
14-3						
15-4						
16-5		15-17'	14"	6,8, 10,13	0	Light Brown course-medium (subrounded sand), abundant subangular-subrounded gravel (quartz), trace biotite. (dump) 19'
17-6						
18-7						
19-8						
20-9						
21-10		20-22	12"	6,9, 11,11	0	Light Brown course sand, abundant subangular-subrounded gravel (quartz), trace iron fragments trace biotite. (dump) 22'

Remarks:

Water Level Measurement 56.6 Date 2/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project Name: Grumman

Well/Boring No.: PL-MW-2
Sheet 3 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burnes Jr. Geologist: Keith Robins
Drill Rig: Gus Peck Drilling Method: Hollowstem Auger
Sample Spoon I.D.: 1 3/8 Drive Hammer Wt.: 210 lb.
Date Started: 2/13/92 Date Completed: 2/13/92

Borehole Completion Depth: 65'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
23-24-25-						
26-27-		25-27	13"	4, 6, 8, 8	0	Light Brown coarse sand, abundant subangular - subrounded gravel, iron fragments 0-14" Light Brown - white medium - fine (subrounded) sand, trace muscovite, Biotite 11"-13" (damp) 27'
28-29-30-						
31-32-		30-32'	15"	5, 7, 10, 10	0	Light Brown medium-coarse (subrounded) sand some subrounded - subangular grave, trace iron fragments, trace biotite. (damp) 32'
33-34-						

Remarks:

Water Level Measurement 56.6' Date 2/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project Name: Grumman

Well/Boring No.: PL-MW-2
Sheet 4 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burns JR
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/12/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 2/13/92

Borehole Completion Depth: 68'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
34-35						
35-36						
36-37		35-37'	17"	8, 9, 15, 12	0	Light Brown course sand, abundant subangular - subrounded gravel, (quartz) trace iron fragments, biotite. (damp) 37'
37-38						
38-39						
39-40						
40-41						
41-42		40-42'	16"	5, 5, 15, 20	0	Orange - Light Brown, medium-fine (subrounded) sand, trace silt, trace muscovite, biotite. (damp) 42'
42-43						
43-44						
44-45						

Remarks:

Water Level Measurement 56.6' Date 2/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.:
Project Name:

Well/Boring No.: PL-mw-2
Sheet 5 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burnes Jr. Geologist: Keith Robins
Drill Rig: Gus Beck Drilling Method: Hollow Stem Auger
Sample Spoon I.D.: 1 3/8 Drive Hammer Wt.: 210 lbs
Date Started: 2/13/92 Date Completed: 2/13/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
45-46						
46-47		45-47'	16"	6,7, 15,24	0	Gray solid clay 0-3" Orange - light brown, medium-fine (subrounded) sand, trace muscovite, biotite. 3"-16"
47-48						(dump) 49'
48-49						
49-50						
50-51						
51-52		50-52'	17"	10,15, 20,26	0	Light gray - white, medium - fine (subrounded) sand) trace muscovite, biotite.
52-53						(dump) 52'
53-54						
54-55						
55-60						

Remarks:

Water Level Measurement 56.6' Date 2/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1112
Project Name: Grumman

Well/Boring No.: PL-MW-2
Sheet 6 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burnes JR
Drill Rig: Gus Beck
Sample Spoon I.D.: 1 3/8
Date Started: 2/13/92
Geologist: Keith Robins
Drilling Method: Hollow stem Augr
Drive Hammer Wt.: 210 lbs
Date Completed: 2/13/92

Borehole Completion Depth: 68
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
55		55-57'	15"	10,13, 20,29	40	Light gray medium-coarse sand (subrounded) trace muscovite, biotite. (moist) 57'
60		60-62'	17"	7,10, 15,20	6	Light gray coarse-fine (subrounded) sand, trace muscovite, biotite. (wet) 62'
65	65-67					

Remarks:
Soil sample (65-67) description on following page.

Water Level Measurement 56.6 Date 4/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-2
Sheet 7 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes JR
Drill Rig: Gus Rock
Sample Spoon I.D.: 1 3/8
Date Started: 2/13/92
Geologist: Keith Robins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 210 lbs.
Date Completed: 2/13/92

Borehole Completion Depth: 68'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
65-0						
66-		65-67'	24"	7,8, 13,18	0	Light gray medium-fine sand, trace biotite 0-13"
67-2-						Brown-orange, medium-fine sand, little silt, trace clay (wet) 13"-24"
68-3-						67'
69-4-						
70-5-						
71-6-						
72-7-						
73-8-						
74-9-						
75-10						

Remarks:

Water Level Measurement 56.6' Date 2/13/92
_____ Date _____
_____ Date _____
_____ Date _____

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-3
Sheet 1 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr. Geologist: Keith Robins
Drill Rig: Gus Peck Drilling Method: Hollow Stem Auger
Sample Spoon I.D.: 1 3/8 Drive Hammer Wt.: 210 lbs.
Date Started: 2/18/92 Date Completed: 2/18/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
-0-		0-2'	16"	5,5, 6,7	4	Asphalt pavement 0-2"
-1-						Brown Course Sand and stones 2"-4"
-2-						Brown, Fine-medium sand, little silt, trace subrounded gravel 4"-16"
-3-		2-4'	20"	4,5, 5,7	10	(damp) 2'
-4-						Light Brown-orange coarse-medium Sand, trace Subangular gravel (damp) 4'
-5-		4-6'	17"	9,13, 15,20	6	Orange-Brown course sand, some subangular-subrounded gravel (quartz)
-6-						(damp) 6'
-7-		6-8'	18"	15,17 20,20	4	Light Brown-orange course sand, little silt, abundant subangular gravel (quartz) (damp) 8'
-8-						
-9-		8-10'	15"	11,15, 20,30	6	Light Brown-Brown course-medium Sand, trace silt, abundant (course-fine) Subangular-subrounded gravel (quartz) fragments (damp) 10'
-10-						

Remarks:
Soil sample (2'-4') obtained for laboratory analysis

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

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-3
Sheet 2 of 7
By: ______ Date: ______
Chk'd: ______ Date: ______

Drilling Contractor: Water Resources
Driller: John Burns Jr.
Drill Rig: Gus Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/18/92
Geologist: Keith Robins
Drilling Method: Hollow stem auger
Drive Hammer Wt.: 140 lbs
Date Completed: 2/18/92
Borehole Completion Depth: 59'
Borehole Diameter: 10"
Ground Surface El.:

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
11						
12						
13						
14						
15						
16		15-17'	17"	5,9, 7,8	2	Brown coarse-fine sand, (subrounded) abundant subangular (quartz) fragments trace biotite (moist) 17'
17						
18						
19						
20						
21		20-22	16"	3,8, 10,10	0	Light Brown coarse-medium sand abundant (coarse-fine) subangular-subrounded) gravel (quartz) (Moist) 22'

Remarks:

Water Level Measurement
______ Date ______
______ Date ______
______ Date ______
______ Date ______

BL

NGINS000119905

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-3
Sheet 3 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes JR
Drill Rig: GW Peck
Sample Spoon I.D.: 1 3/8
Date Started: 2/18/92

Geologist: Keith Rubin
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 140 lb.
Date Completed: 2/18/92

Borehole Completion Depth: 69'
Borehole Diameter: 6"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
23						
24						
25						
26		25-27	12"	6,10, 11,13	4	Light Brown, coarse sand, abundant subrounded-subangular gravel (quartz), trace iron fragments, biotite (dump) 27'
27						
28						
29						
30						
31		30-32	15"	6,8, 9,11	0	Light Brown course-medium sand (subrounded), little gravel (subrounded) trace biotite. (dump) 32'
32						
33						

Remarks:

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

BL

DVIRKA AND BARTILUCCI

Project No.: 1110
Project Name: Grumman

Well/Boring No.: PL-MW-3
Sheet 4 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr
Drill Rig: Gus Pech
Sample Spoon I.D.: 1 3/8
Date Started: 4/10/92
Geologist: Keith Rubins
Drilling Method: Hollow Stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 7/12/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
34-0						
35-1						
36-2		35-37'	15"	7,7, 9,12	4	Light Brown - Brown, Coarse-fine Sand, abundant subangular (quartz) fragments, trace iron fragments, (damp) 37'
37-3						
38-4						
39-5						
40-6						
41-7		40-42'	20"	4,5, 6,6	0	Brown coarse Sand, some subangular gravel 0-10"
42-8						Brown silt, trace clay 10"-20" Tr. muscovite (damp) 42'
43-9						
44-10						

Remarks:

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

BL

DVIRKA AND BARTILUCCI

Project Name: Gumman

Well/Boring No.: PL-MW-3
Sheet 5 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Burns Jr
Drill Rig: Gus Pecic
Sample Spoon I.D.: 1 3/8
Date Started: 2/18/92
Geologist: Keith Rubins
Drilling Method: Hollow Stem Augers
Drive Hammer Wt.: 210 lbs
Date Completed: 2/18/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
45						
46		45-47'	20"	6, 9, 9, 14	6	Light Brown - orange, fine-medium sand, some silt, trace muscovite. (moist) 47'
47						
48						
49						
50						
51		50-52'	20"	9, 19, 18, 23	2	Light Brown - Brown fine-medium sand, 0-8" Light Gray-white medium-fine sand (subrounded) trace muscovite, biotite 8"-20" (Moist) 52'
52						
53						
54						
55						
56		55-57'				

Remarks:
Soil Sample (55-57) description on following page

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

BL

DVIRKA AND BARTILUCCI

Project Name: Grumman

Well/Boring No.: PL-MW-3
Sheet 6 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barnes Jr
Drill Rig: Gus Beck
Sample Spoon I.D.: 3/4
Date Started: 2/18/92
Geologist: Keith Robins
Drilling Method: Hollow stem Auger
Drive Hammer Wt.: 210 lbs
Date Completed: 2/18/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
~~55~~ 56 ~~57~~		(55-57)	15"	12, 15, 26, 28	3	Light Gray-white, medium-coarse (subrounded) Sand, trace muscovite, biotite. (moist) 57'
~~58~~ ~~59~~ 60						
~~60~~ 62 ~~63~~		60-62'	10"	2, 8, 16, 10	2	Light Brown, coarse sand, trace silt, little subangular gravel (wet) 62'
~~63~~ ~~64~~ ~~65~~ ~~66~~ ~~67~~		65-67'				

Remarks:
Sample (65-67) description on following page

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

BL

DVIRKA AND BARTILUCCI

Project No.: [illegible]
Project Name: Grumman

Well/Boring No.: AL-MW-3
Sheet 7 of 7
By: _____ Date: _____
Chk'd: _____ Date: _____

Drilling Contractor: Water Resources
Driller: John Barna Jr.
Drill Rig: Gus Pech
Sample Spoon I.D.: 1 3/8
Date Started: 2/18/92

Geologist: Keith Kutins
Drilling Method: Hollow stem Auger
Drive Hammer Wt.: 140 lbs
Date Completed: 2/18/92

Borehole Completion Depth: 69'
Borehole Diameter: 10"
Ground Surface El.: _____

DEPTH (FT.)	SAMPLE NO.	SAMPLING INTERVAL	RECOVERY/ RQD	BLOWS/6"	HEADSPACE (PPM)	SAMPLE DESCRIPTION
65		65-69'	15"	9,10, 16,16	0	Light Gray-White Course-fine (subrounded) Sand 0-8"
66						Brown-orange silt, some fine sand (wet) 8"-15'
67						67'
68						
69						
70						
71						
72						
73						
74						
75						
76-10						

Remarks:

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

BL

APPENDIX E

Laboratory Data

1A-GC

NYTEST ENVIRONMENTAL INC.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: SOIL
CONC. LEVEL: LOW

SAMPLE ID: GPL - mw15
LAB ID: 11424-02
DIL FACTOR: 1.00
% MOISTURE: ~~NEED MOISTURE~~ 6

CMPD #	CAS Number	VOLATILE COMPOUNDS	UG/KG (DRY BASIS)
1	74-87-3	Chloromethane	1.0 U.
2	74-83-9	Bromomethane	1.0 U.
3	75-01-4	Vinyl Chloride	1.0 U.
4	75-00-3	Chloroethane	1.0 U.
5	75-09-2	Methylene Chloride	~~1.0 U.~~ 3TB
6	75-35-4	1,1-Dichloroethene	1.0 U.
7	75-34-3	1,1-Dichloroethane	1.0 U.
8	156-60-5	1,2-Dichloroethene (trans)	1.0 U.
9	67-66-3	Chloroform	1.0 U.
10	107-06-2	1,2-Dichloroethane	1.0 U.
11	71-55-6	1,1,1-Trichloroethene	1.0 U.
12	56-23-5	Carbon Tetrachloride	1.0 U.
13	75-27-4	Bromodichloromethene	1.0 U.
14	78-87-5	1,2-Dichloropropane	1.0 U.
15	10061-01-5	cis-1,3-Dichloropropene	1.0 U.
16	79-01-6	Trichloroethene	1.0 U.
17	124-48-1	Dibromochloromethane	1.0 U.
18	79-00-5	1,1,2-Trichloroethane	1.0 U.
19	71-43-2	Benzene	1.0 U.
20	10061-02-6	Trans-1,3-Dichloropropene	1.0 U.
21	127-18-4	Tetrachloroethene	1.0 U.
22	79-34-5	1,1,2,2-Tetrachloroethane	1.0 U.
23	108-88-3	Toluene	1.0 U.
24	108-90-7	Chlorobenzene	1.0 U.
25	100-41-4	Ethylbenzene	1.0 U.
26	1330-20-7	Xylene (total)	1.0 U.
27	110-75-8	2-Chloroethylvinylether	1.0 U.
28	75-71-8	Dichlorodifluoromethane	1.0 U.
29	75-69-4	Trichlorofluoromethane	1.0 U.
30	95-50-1	1,2-Dichlorobenzene	1.0 U.
31	541-73-1	1,3-Dichlorobenzene	1.0 U.
32	106-46-7	1,4-Dichlorobenzene	1.0 U.
33	75-25-2	Bromoform	1.0 U.
34			
35			

BFB = 99%

missing UOA Report for GPLMW35

1A-GC

NYTEST ENVIRONMENTAL INC.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MATRIX: SOIL
LEVEL: LOW

SAMPLE ID: GPL-MW25
LAB ID: 11457-01
DIL FACTOR: 1.00
% MOISTURE: ~~NEED MOISTURE~~ 13

	ber	VOLATILE COMPOUNDS	UG/KG (DRY BASIS)
1	74-87-3	Chloromethane	1.0 U.
2	74-83-9	Bromomethane	1.0 U.
3	75-01-4	Vinyl Chloride	1.0 U.
4	75-00-3	Chloroethane	1.0 U.
5	75-09-2	Methylene Chloride	~~1.0 U.~~ 2TB
6	75-35-4	1,1-Dichloroethene	1.0 U.
7	75-34-3	1,1-Dichloroethane	1.0 U.
8	156-60-5	1,2-Dichloroethene (trans)	1.0 U.
9	67-66-3	Chloroform	1.0 U.
10	107-06-2	1,2-Dichloroethane	1.0 U.
11	71-55-6	1,1,1-Trichloroethane	1.0 U.
12	56-23-5	Carbon Tetrachloride	1.0 U.
13	75-27-4	Bromodichloromethane	1.0 U.
14	78-87-5	1,2-Dichloropropene	1.0 U.
15	10061-01-5	cis-1,3-Dichloropropene	1.0 U.
16	79-01-6	Trichloroethene	1.0 U.
17	124-48-1	Dibromochloromethane	1.0 U.
18	79-00-5	1,1,2-Trichloroethene	1.0 U.
19	71-43-2	Benzene	1.0 U.
20	10061-02-6	Trans-1,3-Dichloropropene	1.0 U.
21	127-18-4	Tetrachloroethene	1.0 U.
22	79-34-5	1,1,2,2-Tetrachloroethene	1.0 U.
23	108-88-3	Toluene	1.0 U.
24	108-90-7	Chlorobenzene	1.0 U.
25	100-41-4	Ethylbenzene	1.0 U.
26	1330-20-7	Xylene (total)	1.0 U.
27	110-75-8	2-Chloroethylvinylether	1.0 U.
28	75-71-8	Dichlorodifluoromethane	1.0 U.
29	75-69-4	Trichlorofluoromethane	1.0 U.
30	95-50-1	1,2-Dichlorobenzene	1.0 U.
31	541-73-1	1,3-Dichlorobenzene	1.0 U.
32	106-46-7	1,4-Dichlorobenzene	1.0 U.
33	75-25-2	Bromoform	1.0 U.
34			
35			

nytest environmental inc.

REPORT OF ANALYSIS

Log in No.: 11457

We find as follows:

Results in mg/kg (dry weight basis):

Sample Identification	Parameter(s)
	Total Petroleum Hydrocarbons
1145701 GPL-MW2S	<10.0
Method Blank	<10.0
Method Detection Limit	10.0

nytest environmental inc

REPORT OF ANALYSIS

Log in No.: 11424

We find as follows:

Results in mg/kg (dry weight basis):

Sample Identification	Parameter(s)
	Total Petroleum Hydrocarbons
1142401 G28-MW2S	160
1142402 GPL-MW1S	96.4
Method Blank	<10.0
Method Detection Limit	10.0

missing TPH for GPL MW35

1A-QC

NYTEST ENVIRONMENTAL INC.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MATRIX: ~~SOIL~~ water SAMPLE ID: TB 1/24

LEVEL: LOW LAB ID: 1121403

DIL FACTOR: 1.00

% MOISTURE: ~~NEED MOISTURE~~ NA

ber		VOLATILE COMPOUNDS	UG/KG (DRY BASIS)	
		Chloromethane	1.0 U.	
2	74-83-9	Bromomethane	1.0 U.	
3	75-01-4	Vinyl Chloride	1.0 U.	
4	75-00-3	Chloroethane	1.0 U.	
5	75-09-2	Methylene Chloride	~~1.0 U.~~	2TB
6	75-35-4	1,1-Dichloroethene	1.0 U.	
7	75-34-3	1,1-Dichloroethane	1.0 U.	
8	156-60-5	1,2-Dichloroethene (trans)	1.0 U.	
9	67-66-3	Chloroform	1.0 U.	
10	107-06-2	1,2-Dichloroethane	1.0 U.	
11	71-55-6	1,1,1-Trichloroethane	1.0 U.	
12	56-23-5	Carbon Tetrachloride	1.0 U.	
13	75-27-4	Bromodichloromethane	1.0 U.	
14	78-87-5	1,2-Dichloropropane	1.0 U.	
15	10061-01-5	cis-1,3-Dichloropropene	1.0 U.	
16	79-01-6	Trichloroethene	1.0 U.	
17	124-48-1	Dibromochloromethane	1.0 U.	
18	79-00-5	1,1,2-Trichloroethane	1.0 U.	
19	71-43-2	Benzene	1.0 U.	
20	10061-02-6	Trans-1,3-Dichloropropene	1.0 U.	
21	127-18-4	Tetrachloroethene	1.0 U.	
22	79-34-5	1,1,2,2-Tetrachloroethane	1.0 U.	
23	108-88-3	Toluene	1.0 U.	
24	108-90-7	Chlorobenzene	1.0 U.	
25	100-41-4	Ethylbenzene	1.0 U.	
26	1330-20-7	Xylene (total)	1.0 U.	
27	110-75-8	2-Chloroethylvinylether	1.0 U.	
28	75-71-8	Dichlorodifluoromethane	1.0 U.	
29	75-69-4	Trichlorofluoromethane	1.0 U.	
30	95-50-1	1,2-Dichlorobenzene	1.0 U.	
31	541-73-1	1,3-Dichlorobenzene	1.0 U.	
32	106-46-7	1,4-Dichlorobenzene	1.0 U.	
33	75-25-2	Bromoform	1.0 U.	
34				
35				

1A-OC

NYTEST ENVIRONMENTAL INC.

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX: ~~SOIL~~ water SAMPLE ID: FB-5

CONC. LEVEL: LOW LAB ID: 1121402

DIL FACTOR: 1.00

% MOISTURE: ~~NEED MOISTURE~~ NA

CMPD #	CAS Number	VOLATILE COMPOUNDS	UG/KG (DRY BASIS)	
1	74-87-3	Chloromethane	1.0 U.	
2	74-83-9	Bromomethane	1.0 U.	
3	75-01-4	Vinyl Chloride	1.0 U.	
4	75-00-3	Chloroethane	1.0 U.	
5	75-09-2	Methylene Chloride	~~1.0 U.~~	2TB
6	75-35-4	1,1-Dichloroethene	1.0 U.	
7	75-34-3	1,1-Dichloroethane	1.0 U.	
8	156-60-5	1,2-Dichloroethene (trans)	1.0 U.	
9	67-66-3	Chloroform	1.0 U.	
10	107-06-2	1,2-Dichloroethane	1.0 U.	
11	71-55-6	1,1,1-Trichloroethane	1.0 U.	
12	56-23-5	Carbon Tetrachloride	1.0 U.	
13	75-27-4	Bromodichloromethane	1.0 U.	
14	78-87-5	1,2-Dichloropropane	1.0 U.	
15	10061-01-5	cis-1,3-Dichloropropene	1.0 U.	
16	79-01-6	Trichloroethene	1.0 U.	
17	124-48-1	Dibromochloromethane	1.0 U.	
18	79-00-5	1,1,2-Trichloroethane	1.0 U.	
19	71-43-2	Benzene	1.0 U.	
20	10061-02-6	Trans-1,3-Dichloropropene	1.0 U.	
21	127-18-4	Tetrachloroethene	1.0 U.	
22	79-34-5	1,1,2,2-Tetrachloroethane	1.0 U.	
23	108-88-3	Toluene	1.0 U.	
24	108-90-7	Chlorobenzene	1.0 U.	
25	100-41-4	Ethylbenzene	1.0 U.	
26	1330-20-7	Xylene (total)	1.0 U.	
27	110-75-8	2-Chloroethylvinylether	1.0 U.	
28	75-71-8	Dichlorodifluoromethane	1.0 U.	
29	75-69-4	Trichlorofluoromethane	1.0 U.	
30	95-50-1	1,2-Dichlorobenzene	1.0 U.	
31	541-73-1	1,3-Dichlorobenzene	1.0 U.	
32	106-46-7	1,4-Dichlorobenzene	1.0 U.	
33	75-25-2	Bromoform	1.0 U.	
34				
35				

KBF POLLUTION MANAGEMENT, INC.
1110 FARMINGDALE ROAD, NORTH LINDENHURST NEW YORK 11757-1024
PHONE (516)225-0007 - (800)366-1456 - FAX (516)225-0048

Client Sample ID:	*PL MW-1*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-1*	**Date Analyzed**	*February 26, 1992*
Sample Matrix:	*Water*	**Customer ID#:**	*KBF ID #1327*

PRIORITY POLLUTANT ANALYSIS EPA METHOD 624 VOLATILES

CAS #	PARAMETER	ug/l
67-64-1	Acetone	<10.0
78-93-3	2-Butanone	<10.0
71-43-2	Benzene	<5.0
75-27-4	Bromodichloromethane	<5.0
75-25-2	Bromoform	<5.0
74-83-9	Bromomethane	<10.0
75-15-0	Carbon Disulfide	<5.0
56-23-5	Carbon Tetrachloride	<5.0
108-90-7	Chlorobenzene	<5.0
75-00-3	Chloroethane	<10.0
110-75-8	2-Chloroethylvinyl ether	<10.0
67-66-3	Chloroform	<5.0
74-87-3	Chloromethane	<10.0
124-48-1	Dibromochloromethane	<5.0
95-50-1	1,2-Dichlorobenzene	<10.0
541-73-1	1,3-Dichlorobenzene	<10.0
106-46-7	1,4-Dichlorobenzene	<10.0
75-71-8	Dichlorodifluoromethane	<10.0
75-34-3	1,1-Dichloroethene	<5.0
107-06-2	1,2-Dichloroethane	<5.0
75-35-4	1,1-Dichloroethene	<5.0
156-60-5	trans-1,2-Dichloroethene	<5.0
78-87-5	1,2-Dichloropropane	<5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0
100-41-4	Ethylbenzene	<5.0
591-78-6	2-Hexanone	<10.0
108-10-1	4-Methyl-2-Pentanone	<10.0
75-09-2	Methylene Chloride	3.67 J
100-42-5	Styrene	<5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0
127-18-4	Tetrachloroethene	<5.0
108-88-3	Toluene	<5.0
71-55-6	1,1,1-Trichloroethane	<5.0
79-00-5	1,1,2-Trichloroethane	<5.0
79-01-6	Trichloroethene	<5.0
75-69-4	Trichlorofluoromethane	<10.0
75-01-4	Vinyl Chloride	<5.0
	Total Xylenes	

CERTIFIED BY: Michael Veraldi
MICHAEL VERALDI LABORATORY DIRECTOR

DRAFT

KBF POLLUTION MANAGEMENT, INC.
1110 FARMINGDALE ROAD, NORTH LINDENHURST NEW YORK 11757-1024
PHONE (516)225-0007 - (800)366-1456 - FAX (516)225-0048

Client Sample ID:	*PL MW-2*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-2*	**Date Analyzed**	*February 26, 1992*
Sample Matrix:	*Water*	**Customer ID#:**	*KBF ID #1327*

PRIORITY POLLUTANT ANALYSIS EPA METHOD 624 VOLATILES

CAS #	PARAMETER	ug/l
67-64-1	Acetone	<10.0
78-93-3	2-Butanone	<10.0
71-43-2	Benzene	<5.0
75-27-4	Bromodichloromethane	<5.0
75-25-2	Bromoform	<5.0
74-83-9	Bromomethane	<10.0
75-15-0	Carbon Disulfide	<5.0
56-23-5	Carbon Tetrachloride	<5.0
108-90-7	Chlorobenzene	<5.0
75-00-3	Chloroethane	<10.0
110-75-8	2-Chloroethylvinyl ether	<10.0
67-66-3	Chloroform	<5.0
74-87-3	Chloromethane	<10.0
124-48-1	Dibromochloromethane	<5.0
95-50-1	1,2-Dichlorobenzene	<10.0
541-73-1	1,3-Dichlorobenzene	<10.0
106-46-7	1,4-Dichlorobenzene	<10.0
75-71-8	Dichlorodifluoromethane	<10.0
75-34-3	1,1-Dichloroethene	<5.0
107-06-2	1,2-Dichloroethane	<5.0
75-35-4	1,1-Dichloroethane	<5.0
156-60-5	trans-1,2-Dichloroethene	<5.0
78-87-5	1,2-Dichloropropane	<5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0
100-41-4	Ethylbenzene	<5.0
591-78-6	2-Hexanone	<10.0
108-10-1	4-Methyl-2-Pentanone	<10.0
75-09-2	Methylene Chloride	<5.0
100-42-5	Styrene	<5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0
127-18-4	Tetrachloroethene	<5.0
108-88-3	Toluene	<5.0
71-55-6	1,1,1-Trichloroethane	<5.0
79-00-5	1,1,2-Trichloroethane	<5.0
79-01-6	Trichloroethene	<5.0
75-69-4	Trichlorofluoromethane	<5.0
75-01-4	Vinyl Chloride	<10.0
	Total Xylenes	<5.0

CERTIFIED BY: Michael Veraldi
MICHAEL VERALDI LABORATORY DIRECTOR

DRAFT

US EPA TREATMENT AND RECOVERY FACILITY PERMIT NUMBER NYD981182709
NYS DOH ENVIRONMENTAL ANALYTICAL LABORATORY CERTIFICATION NUMBER NYS DOH 11014
NYS DEC HAZARDOUS WASTE TRANSPORTER NYS DEC 1A 140
CONNECTICUT DEP HAZARDOUS WASTE TRANSPORTER CT 1IW 410

KBF POLLUTION MANAGEMENT, INC.
1110 FARMINGDALE ROAD, NORTH LINDENHURST NEW YORK 11757-1024
PHONE (516)225-0007 - (800)366-1456 - FAX (516)225-0048

Client Sample ID:	*PL MW-3*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-3*	**Date Analyzed**	*February 26, 1992*
Sample Matrix:	*Water*	**Customer ID#:**	*KBF ID #1327*

PRIORITY POLLUTANT ANALYSIS EPA METHOD 624 VOLATILES

CAS #	PARAMETER	ug/l
67-64-1	Acetone	<10.0
78-93-3	2-Butanone	<10.0
71-43-2	Benzene	<5.0
75-27-4	Bromodichloromethane	<5.0
75-25-2	Bromoform	<5.0
74-83-9	Bromomethane	<10.0
75-15-0	Carbon Disulfide	<5.0
56-23-5	Carbon Tetrachloride	<5.0
108-90-7	Chlorobenzene	<5.0
75-00-3	Chloroethane	<10.0
110-75-8	2-Chloroethylvinyl ether	<10.0
67-66-3	Chloroform	<5.0
74-87-3	Chloromethane	<10.0
124-48-1	Dibromochloromethane	<5.0
95-50-1	1,2-Dichlorobenzene	<10.0
541-73-1	1,3-Dichlorobenzene	<10.0
106-46-7	1,4-Dichlorobenzene	<10.0
75-71-8	Dichlorodifluoromethane	<10.0
75-34-3	1,1-Dichloroethene	<5.0
107-06-2	1,2-Dichloroethane	<5.0
75-35-4	1,1-Dichloroethene	<5.0
156-60-5	trans-1,2-Dichloroethene	<5.0
78-87-5	1,2-Dichloropropane	<5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0
100-41-4	Ethylbenzene	<5.0
591-78-6	2-Hexanone	<10.0
108-10-1	4-Methyl-2-Pentanone	<10.0
75-09-2	Methylene Chloride	<5.0
100-42-5	Styrene	<5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0
127-18-4	Tetrachloroethene	3.04 J
108-88-3	Toluene	<5.0
71-55-6	1,1,1-Trichloroethane	<5.0
79-00-5	1,1,2-Trichloroethane	<5.0
79-01-6	Trichloroethene	<5.0
75-69-4	Trichlorofluoromethane	<5.0
75-01-4	Vinyl Chloride	<10.0
	Total Xylenes	<5.0

CERTIFIED BY: Michael Veraldi

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Client Sample ID:	*TB-1*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-6*	**Date Analyzed**	*February 26, 1992*
Sample Matrix:	*Water*	**Customer ID#:**	*KBF ID #1327*

PRIORITY POLLUTANT ANALYSIS EPA METHOD 624 VOLATILES

CAS #	PARAMETER	ug/l
67-64-1	Acetone	<10.0
78-93-3	2-Butanone	<10.0
71-43-2	Benzene	<5.0
75-27-4	Bromodichloromethane	<5.0
75-25-2	Bromoform	<5.0
74-83-9	Bromomethane	<10.0
75-15-0	Carbon Disulfide	<5.0
56-23-5	Carbon Tetrachloride	<5.0
108-90-7	Chlorobenzene	<5.0
75-00-3	Chloroethane	<10.0
110-75-8	2-Chloroethylvinyl ether	<10.0
67-66-3	Chloroform	<5.0
74-87-3	Chloromethane	<10.0
124-48-1	Dibromochloromethane	<5.0
95-50-1	1,2-Dichlorobenzene	<10.0
541-73-1	1,3-Dichlorobenzene	<10.0
106-46-7	1,4-Dichlorobenzene	<10.0
75-71-8	Dichlorodifluoromethane	<10.0
75-34-3	1,1-Dichloroethene	<5.0
107-06-2	1,2-Dichloroethane	<5.0
75-35-4	1,1-Dichloroethane	<5.0
156-60-5	trans-1,2-Dichloroethene	<5.0
78-87-5	1,2-Dichloropropane	<5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0
100-41-4	Ethylbenzene	<5.0
591-78-6	2-Hexanone	<10.0
108-10-1	4-Methyl-2-Pentanone	<10.0
75-09-2	Methylene Chloride	3.74 J
100-42-5	Styrene	<5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0
127-18-4	Tetrachloroethene	<5.0
108-88-3	Toluene	<5.0
71-55-6	1,1,1-Trichloroethane	<5.0
79-00-5	1,1,2-Trichloroethane	<5.0
79-01-6	Trichloroethene	<5.0
75-69-4	Trichlorofluoromethane	<10.0
75-01-4	Vinyl Chloride	<5.0
	Total Xylenes	

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NYS DEC HAZARDOUS WASTE TRANSPORTER NYS DEC 1A 140
CONNECTICUT DEQ HAZARDOUS WASTE TRANSPORTER CT HW 410

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1110 FARMINGDALE ROAD, NORTH LINDENHURST NEW YORK 11757-1024
PHONE (516)225-0007 - (800)366-1456 - FAX (516)225-0048

Client Sample ID:	*Field Blank*	**Date Received:**	*February 24, 1992*
Lab Sample ID:	*780-6*	**Date Analyzed**	*February 25, 1992*
Sample Matrix:	*Water*	**Customer ID#:**	*KBF ID #1327*

PRIORITY POLLUTANT ANALYSIS EPA METHOD 624 VOLATILES

CAS #	PARAMETER	ug/l
67-64-1	Acetone	<10.0
78-93-3	2-Butanone	<10.0
71-43-2	Benzene	<5.0
75-27-4	Bromodichloromethane	<5.0
75-25-2	Bromoform	<5.0
74-83-9	Bromomethane	<10.0
75-15-0	Carbon Disulfide	<5.0
56-23-5	Carbon Tetrachloride	<5.0
108-90-7	Chlorobenzene	<5.0
75-00-3	Chloroethane	<10.0
110-75-8	2-Chloroethylvinyl ether	<10.0
67-66-3	Chloroform	<5.0
74-87-3	Chloromethane	<10.0
124-48-1	Dibromochloromethane	<5.0
95-50-1	1,2-Dichlorobenzene	<10.0
541-73-1	1,3-Dichlorobenzene	<10.0
106-46-7	1,4-Dichlorobenzene	<10.0
75-71-8	Dichlorodifluoromethane	<10.0
75-34-3	1,1-Dichloroethene	<5.0
107-06-2	1,2-Dichloroethane	<5.0
75-35-4	1,1-Dichloroethane	<5.0
156-60-5	trans-1,2-Dichloroethene	<5.0
78-87-5	1,2-Dichloropropane	<5.0
10061-01-5	cis-1,3-Dichloropropene	<5.0
10061-02-6	trans-1,3-Dichloropropene	<5.0
100-41-4	Ethylbenzene	<5.0
591-78-6	2-Hexanone	<10.0
108-10-1	4-Methyl-2-Pentanone	<10.0
75-09-2	Methylene Chloride	4.56 J B
100-42-5	Styrene	<5.0
79-34-5	1,1,2,2-Tetrachloroethane	<5.0
127-18-4	Tetrachloroethene	<5.0
108-88-3	Toluene	<5.0
71-55-6	1,1,1-Trichloroethane	<5.0
79-00-5	1,1,2-Trichloroethane	<5.0
79-01-6	Trichloroethene	<5.0
75-69-4	Trichlorofluoromethane	<5.0
75-01-4	Vinyl Chloride	<10.0
	Total Xylenes	<5.0

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February 28, 1992

Client Sample ID:	*PL MW-1*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-1*	**Date Digested:**	*2/26, 2/27/92*
Sample Matrix:	*Water*	**Date Analyzed:**	*2/27, 2/28/92*
Customer ID#:	*KBF-ID# 1327*		

ANALYTICAL DATA FOR METAL DIGESTION

Metal	Chemical Symbol	Concentration mg/l
Aluminum	Al	0.30
Arsenic	As	<0.05
Barium	Ba	<1.0
Beryllium	Be	<0.05
Cadmium	Cd	<0.05
Calcium	Ca	22.1
Chromium	Cr	<0.05
Cobalt	Co	<0.05
Copper	Cu	<0.05
Iron	Fe	0.12
Lead	Pb	<0.05
Magnesium	Mg	3.25
Manganese	Mn	0.09
Mercury	Hg	<0.002
Nickel	Ni	<0.05
Potassium	K	4.81
Antimony	Sb	<0.05
Selenium	Se	<0.05
Silver	Ag	<0.05
Sodium	Na	57.3
Thallium	Tl	<0.05
Vanadium	V	<0.05
Zinc	Zn	0.13

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February 28, 1992

Client Sample ID:	*PL MW-2*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-2*	**Date Digested:**	*2/26, 2/27/92*
Sample Matrix:	*Water*	**Date Analyzed:**	*2/27, 2/28/92*
Customer ID#:	*KBF-ID# 1327*		

ANALYTICAL DATA FOR METAL DIGESTION

Metal	Chemical Symbol	Concentration mg/l
Aluminum	Al	0.62
Arsenic	As	<0.05
Barium	Ba	<1.0
Beryllium	Be	<0.05
Cadmium	Cd	<0.05
Calcium	Ca	44.8
Chromium	Cr	<0.05
Cobalt	Co	<0.05
Copper	Cu	<0.05
Iron	Fe	0.31
Lead	Pb	<0.05
Magnesium	Mg	4.49
Manganese	Mn	0.08
Mercury	Hg	<0.002
Nickel	Ni	<0.05
Potassium	K	4.90
Antimony	Sb	<0.05
Selenium	Se	<0.05
Silver	Ag	<0.05
Sodium	Na	38.7
Thallium	Tl	<0.05
Vanadium	V	<0.05
Zinc	Zn	0.26

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February 28, 1992

Client Sample ID:	*PL MW-3*	**Date Received:**	*February 25, 1992*
Lab Sample ID:	*785-3*	**Date Digested:**	*2/26, 2/27/92*
Sample Matrix:	*Water*	**Date Analyzed:**	*2/27, 2/28/92*
Customer ID#:	*KBF-ID# 1327*		

ANALYTICAL DATA FOR METAL DIGESTION

Metal	Chemical Symbol	Concentration mg/l
Aluminum	Al	0.54
Arsenic	As	<0.05
Barium	Ba	<1.0
Beryllium	Be	<0.05
Cadmium	Cd	<0.05
Calcium	Ca	29.3
Chromium	Cr	<0.05
Cobalt	Co	<0.05
Copper	Cu	<0.05
Iron	Fe	0.50
Lead	Pb	<0.05
Magnesium	Mg	4.18
Manganese	Mn	0.42
Mercury	Hg	<0.002
Nickel	Ni	<0.05
Potassium	K	3.16
Antimony	Sb	<0.05
Selenium	Se	<0.05
Silver	Ag	<0.05
Sodium	Na	25.5
Thallium	Tl	<0.05
Vanadium	V	<0.05
Zinc	Zn	0.07

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February 27, 1992

Client Sample ID:	*Field Blank*	**Date Received:**	*February 24, 1992*
Lab Sample ID:	*780-6*	**Date Digested:**	*February 25, 1992*
Sample Matrix:	*Water*	**Date Analyzed:**	*February 26, 1992*
Customer ID#:	*KBF-ID# 1327*		

ANALYTICAL DATA FOR METAL DIGESTION

Metal	Chemical Symbol	Concentration mg/l
Aluminum	Al	<0.05
Arsenic	As	<0.05
Barium	Ba	<1.0
Beryllium	Be	<0.05
Cadmium	Cd	<0.05
Calcium	Ca	<0.05
Chromium	Cr	<0.05
Cobalt	Co	<0.05
Copper	Cu	<0.05
Iron	Fe	<0.05
Lead	Pb	<0.05
Magnesium	Mg	<0.05
Manganese	Mn	<0.05
Mercury	Hg	<0.002
Nickel	Ni	<0.05
Potassium	K	<0.05
Antimony	Sb	<0.05
Selenium	Se	<0.05
Silver	Ag	<0.05
Sodium	Na	<0.05
Thallium	Tl	<0.05
Vanadium	V	<0.05
Zinc	Zn	<0.05

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