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CONTAMINATION ASSESSMENT REPORT ADDENDUM FOR BACHELOR ENLISTED
QUARTERS BUILDING 1587 NS MAYPORT FL
7/1/1998
HARDING LAWSON ASSOCIATES



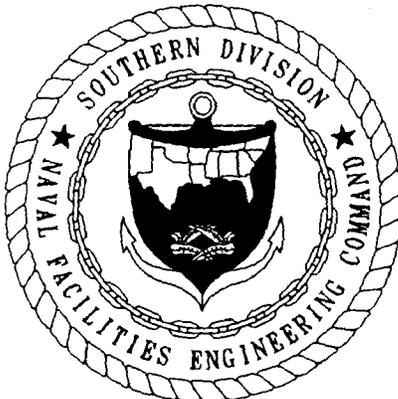
CONTAMINATION ASSESSMENT REPORT ADDENDUM

**BACHELOR ENLISTED QUARTERS
BUILDING 1587**

**U.S. NAVAL STATION
MAYPORT, FLORIDA**

**UNIT IDENTIFICATION CODE: N60201
CONTRACT NO.: N62467-89-D-0317/119**

July 1998



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29418**

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CONTAMINATION ASSESSMENT REPORT ADDENDUM

**BACHELOR ENLISTED QUARTERS
BUILDING 1587**

**U.S. NAVAL STATION
MAYPORT, FLORIDA**

Unit Identification Code: N60201

Contract No.: N62467-89-D-0317/119

Prepared by:

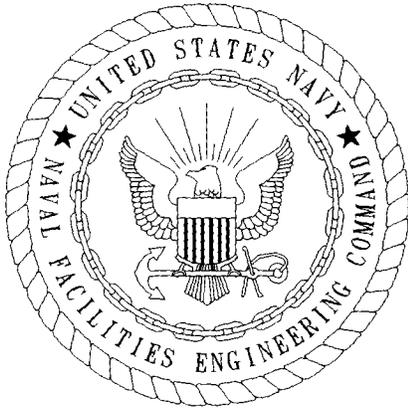
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July 1998



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates (formerly ABB Environmental Services, Inc.), hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/119 are complete and accurate and comply with all requirements of this contract.

DATE: July 13, 1998

NAME AND TITLE OF CERTIFYING OFFICIAL: Terry Hansen, P.G.
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Michael J. Williams, P.G.
Project Technical Lead

(DFAR 252.227-7036)



FOREWORD

To meet its mission objectives, the U.S. Navy performs a variety of operations, some requiring the use, handling, storage, and/or disposal of hazardous materials. Through accidental spills or leaks, or conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable by present standards. With growing knowledge of the long-term effects of hazardous materials on the environment, the Department of Defense initiated various programs to investigate and remediate conditions related to suspected past releases of hazardous materials at their facilities.

One of these programs is the Comprehensive Long-Term Environmental Action, Navy Underground Storage Tank (UST) program. This program complies with Subtitle I of the Resource Conservation and Recovery Act, and the Hazardous and Solid Waste Amendments of 1984. In addition, the UST program complies with all appropriate State and local storage tank regulations as they pertain to each naval facility.

The UST program includes the following activities:

- registration and management of Navy and Marine Corps storage tank systems
- contamination assessment planning
- site field investigations
- preparation of contamination assessment reports
- remedial (corrective) action planning
- implementation of the remedial action plans
- tank and pipeline closures

The Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) manages the UST program, and the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection oversee the Navy UST program at the U.S. Naval Station in Mayport, Florida.

Questions regarding this report should be addressed to the Environmental Coordinator, U.S. Naval Station, Mayport, Florida, at (904) 270-6730, or to SOUTHNAVFACENGCOM, Beverly Washington, Code 18410, at DSN 563-0613 or (803) 743-0613.

EXECUTIVE SUMMARY

The Bachelor Enlisted Quarters (BEQ), Building 1587, is located east of the Turning Basin, near the intersection of Biltmore Street and Bailey Avenue, at the U.S. Naval Station (NAVSTA), Mayport, Florida. A 4,000-gallon underground storage tank (UST) containing Number 2 fuel oil was installed in 1960 to heat the BEQ. On March 18, 1994, a contractor discovered contaminated soil while attempting to install a cathodic protection system on the UST. The UST was removed from service and replaced with a temporary, trailer mounted, aboveground storage tank until the UST could be replaced. A new 4,000-gallon UST and dispensing system was installed in July 1995 and, after tightness testing, became operational in August 1995.

ABB Environmental Services, Inc., (ABB-ES) (presently Harding Lawson Associates [HLA]), under contract to Southern Division, Naval Facilities Engineering Command, conducted a site assessment at Building 1587 and submitted a contamination assessment report (CAR) (ABB-ES, 1996). The assessment was conducted from May to October 1995 in accordance with the requirements defined in Chapter 62-770, Florida Administrative Code (FAC), effective February 21, 1990.

The findings, conclusions, and recommendations of the February 1996 CAR for the BEQ, Building 1587 site at NAVSTA Mayport are summarized below.

- A small area of excessively contaminated soil was identified near the southern perimeter of the former UST, adjacent to the BEQ and fuel pumphouse.
- The areal extent of groundwater contamination at the site appears to be limited to the vicinity of the former UST and fuel pumphouse. Benzene, ethylbenzene, and xylenes were identified in groundwater samples obtained from various monitoring wells; however, the concentrations were below No Further Action guidelines for G-II groundwater established by the State.
- Free product was not observed in any site monitoring well.
- Only the upper surficial aquifer was encountered during drilling operations conducted at the site. The minimal groundwater contamination documented for the surficial aquifer did not warrant the installation of a deep monitoring well to assess the extent of groundwater contamination in the lower surficial aquifer.
- Five on-site supply wells at NAVSTA Mayport are used for potable and irrigation purposes. The supply wells are numbered N-1 through N-4 (potable water) and D-236 (irrigation water). The closest well, N-3, is located approximately 1/2-mile upgradient of Building 1587 and should not be impacted by petroleum contaminants detected in the groundwater at the site.
- A No Further Action proposal was recommended in the CAR based on the following conditions: (1) the source of the contamination at the site had been abated (i.e., the UST and associated piping have been replaced), (2) free product is not present at the site, (3) all

accessible excessively contaminated soil at the site had been removed, and (4) groundwater contamination was not widespread and did not extend off site.

In response to Florida Department of Environmental Protection comments, dated March 29, 1996 (Appendix A, Correspondence), a supplemental investigation was performed at the site in accordance with Chapter 62-770, FAC, effective September 23, 1997. The supplemental assessment was performed on January 29, 1998, and included the following tasks:

- Collect three soil samples in areas of high, medium, and low organic vapor analyzer (OVA) headspace readings for analysis of Kerosene Analytical Group chemicals of concern specified in Chapter 62-770, FAC, Table I (U.S. Environmental Protection Agency [USEPA] Methods 8020, 8310, and Florida Petroleum Residual Organics and USEPA Method 1312, Synthetic Precipitation Leaching Procedure [SPLP]).
- Collect groundwater samples from source area monitoring well MPT-BQ-MW04 and downgradient monitoring well MPT-BQ-MW06 for laboratory analysis of USEPA Methods 601 and 602 parameters.
- Measure depth to groundwater in site monitoring wells and calculate water table elevation and groundwater flow direction.

The findings, conclusions, and recommendations of this CAR Addendum are summarized below.

FINDINGS:

The summary of findings at the BEQ, Building 1587 site presented below is based on the results of the supplemental investigation and laboratory analytical results.

- OVA headspace concentrations measured January 29, 1998, were significantly lower than the 1995 site assessment OVA headspace data.
- The total recoverable petroleum hydrocarbons concentration in soil sample BQB01105 (14,000 milligrams per kilogram) exceeded the State soil cleanup target level of 350 milligrams per kilogram.
- SPLP analytical results indicate none of the petroleum chemicals of concern detected in excessively contaminated soil samples exceeded the State soil cleanup target levels for leachability based on the values listed in Chapter 62-770, FAC, Table IV (Table V^a) (Groundwater Cleanup Target Levels [GCTLs] for Resource Protection/Recovery).
- Free product was not detected in any site monitoring well.
- Benzene, ethylbenzene, and methyl tert-butyl ether (MTBE) were detected in groundwater samples collected January 29, 1998, from monitoring wells MPT-BQ-MW04 and MPT-BQ-MW06. Ethylbenzene and MTBE concentrations were less than the respective State GCTLs. The

benzene concentration was slightly greater than the State GCTL of 1 microgram per liter.

- Benzene concentrations in groundwater samples collected from monitoring wells MPT-BQ-MW04 and MPT-BQ-MW06 on January 29, 1998, have significantly decreased compared to May 1995 groundwater analytical data.
- The general groundwater flow direction in the surficial aquifer is north-northeast.

CONCLUSIONS:

The following conclusions are based on the findings of the supplemental assessment at the BEQ, Building 1587 site:

- Lower OVA concentrations in excessively contaminated soil may indicate a reduction in volatile organic compound concentrations resulting from *in situ* biodegradation.
- Based on leachability values listed in Chapter 62-770, FAC, Table IV (Table V^a) (GCTLs for Resource Protection/Recovery), excessively contaminated soil at the site is not a continuing source of groundwater contamination.
- Groundwater sample analytical results indicate petroleum chemicals of concern concentrations have decreased from May 1995 to January 1998, and may indicate natural attenuation of contamination by biodegradation is occurring.

RECOMMENDATIONS:

Based on the findings of the supplemental assessment, HLA recommends overdevelopment of monitoring well MPT-BQ-MW04 for a 72-hour period. Groundwater samples should be collected from monitoring well MPT-BQ-MW04 approximately 2 weeks after the 72-hour overdevelopment period and analyzed for USEPA Method 602 parameters, including MTBE. A recommendation for either No Further Action with land-use restrictions (Chapter 62-770.680[2]) or Monitoring Only for Natural Attenuation (Chapter 62-770.690[1]) will be made based on the post-overdevelopment groundwater samples analytical results.

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AST	aboveground storage tank
BEQ	Bachelor Enlisted Quarters
bls	below land surface
CAR	contamination assessment report
CompQAP	Comprehensive Quality Assurance Plan
FAC	Florida Administrative Code
FL-PRO	Florida Petroleum Residual Organics
GCTL	Groundwater Cleanup Target Level
HLA	Harding Lawson Associates
$\mu\text{g}/\text{l}$	micrograms per liter
MTBE	methyl tert-butyl ether
NAVSTA	Naval Station
OVA	organic vapor analyzer
PAH	polynuclear aromatic hydrocarbon
ppm	parts per million
SCTL	soil cleanup target level
SPLP	Synthetic Precipitation Leaching Procedure
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOA	volatile organic aromatic
VOC	volatile organic compound

1.0 INTRODUCTION

Harding Lawson Associates (HLA) (formerly ABB Environmental Services, Inc. [ABB-ES]), was contracted by Southern Division, Naval Facilities Engineering Command to perform supplemental soil and groundwater sampling and submit a contamination assessment report (CAR) addendum for the Bachelor Enlisted Quarters (BEQ), Building 1587, at U.S. Naval Station (NAVSTA), Mayport, Florida. The scope of services is described in Modification 04 to Contract Task Order No. 119, and includes the following tasks:

- Collect a total of three grab soil samples in areas of high, medium, and low organic vapor analyzer (OVA) headspace readings for analysis of Kerosene Analytical Group chemicals of concern specified in Chapter 62-770, Florida Administrative Code (FAC), Table I (U.S. Environmental Protection Agency [USEPA] Methods 8020, 8310, and Florida Petroleum Residual Organics [FL-PRO]) and USEPA Method 1312, Synthetic Precipitation Leaching Procedure (SPLP).
- Collect groundwater samples from source area monitoring well MPT-BQ-MW04 and downgradient monitoring well MPT-BQ-MW06 for laboratory analysis of USEPA Methods 601 and 602 parameters.
- Measure depth to groundwater and calculate water table elevation in site monitoring wells and groundwater flow direction.

The following sections of this CAR Addendum present the background information, field investigative activities, analytical results, findings, conclusions, and recommendations for further action at the site.

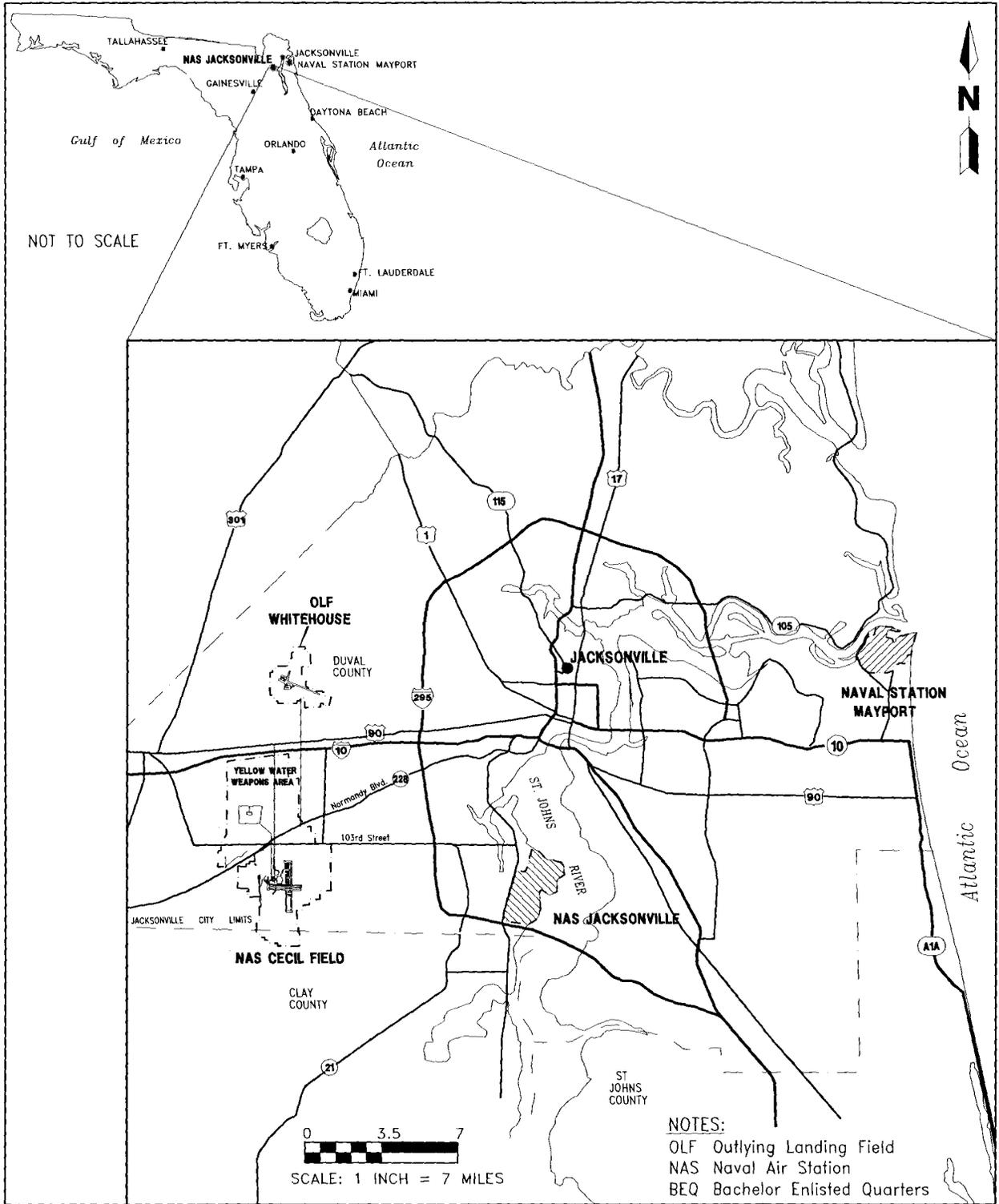
For consistency, the prefix MPT-1587 has been replaced with MPT-BE for soil boring and monitoring well location designations in the text, tables, and figures of this report. The revised location and sample identification conforms with the format currently in use for other underground storage tank (UST) and installation restoration program documents submitted for NAVSTA Mayport sites.

2.0 SITE DESCRIPTION AND BACKGROUND

The U.S. Naval Station at Mayport, Florida, is located approximately 15 miles east-northeast of downtown Jacksonville, Florida (Figure 2-1). NAVSTA Mayport was established in 1942 on approximately 700 acres of land. The original mission of the station included use of patrol craft, target boats, and rescue boats. The station was placed in caretaker status in 1946, reopened in 1948, and in 1952 was assigned an aircraft carrier. Today NAVSTA Mayport is primarily involved in intermediate level maintenance of equipment, ships, aircraft, and other support units assigned to that part of the Second Fleet stationed at the facility.

The BEQ, Building 1587, is located in the northeast section of NAVSTA Mayport, east of the Turning Basin, at the west end of Biltmore Avenue near the intersection of Baltimore Street and Bailey Avenue (Figure 2-2).

2.1 SITE HISTORY. A 4,000-gallon UST containing Number 2 fuel oil was installed in 1960 and used to heat the BEQ. On March 18, 1994, a subcontractor discovered contaminated soil while attempting to install a cathodic protection system on the UST. A Discharge Reporting Form was submitted stating that an unknown amount of fuel had been released as a result of tank corrosion. The UST was taken out of service and replaced with a temporary, trailer-mounted aboveground storage tank (AST), which was located northeast of the UST area. Plastic sheeting and sand bags were placed around the AST to form a secondary containment dike until a new UST could be installed. A new 4,000-gallon UST and dispensing system was installed in July 1995 and, after tightness testing, became operational in August 1995.



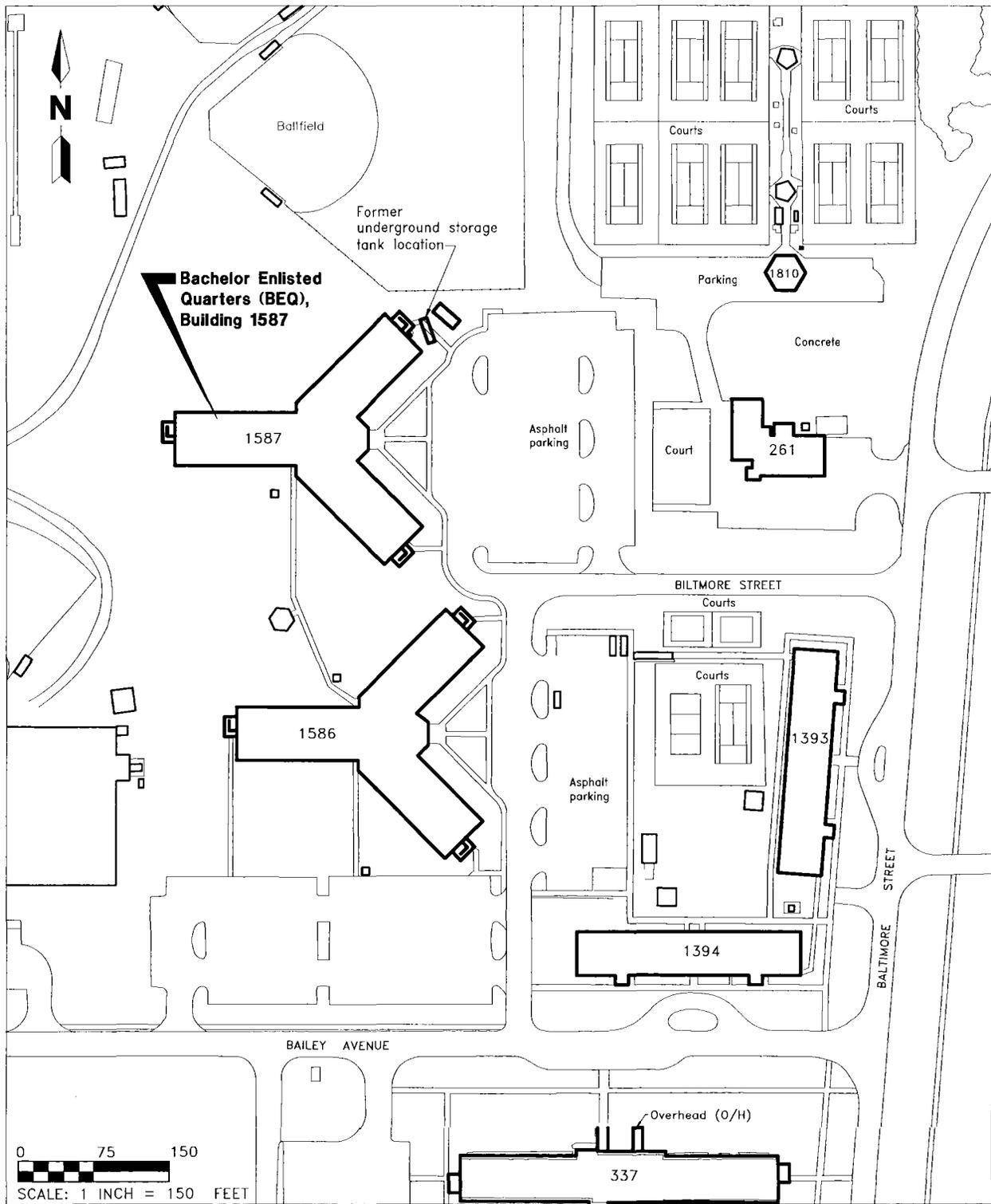
**FIGURE 2-1
 FACILITY LOCATION MAP**



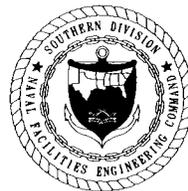
**CONTAMINATION ASSESSMENT
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 BEQ, BUILDING 1587**

**NAVAL STATION MAYPORT
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**FIGURE 2-2
SITE LOCATION MAP**



**CONTAMINATION ASSESSMENT
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BEQ, BUILDING 1587**

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3.0 SUPPLEMENTAL CONTAMINATION ASSESSMENT

Methodologies and equipment used during the January 29, 1998, supplemental assessment were in conformance with the HLA, Florida Department of Environmental Protection-approved Comprehensive Quality Assurance Plan (CompQAP). Investigative methodologies and equipment are discussed in the CAR (ABB-ES, 1996) in Appendix B, Investigative Methodologies and Equipment.

3.1 SOIL SAMPLING AND ANALYSIS. Contaminated soil is defined in Rule 62-770.200(4), FAC, as soil contaminated with petroleum or petroleum products or their chemical constituents to the extent that applicable soil cleanup target levels (SCTLs) defined in Chapter 62-770, FAC, are exceeded. Soil that causes a total corrected OVA reading of 50 parts per million (ppm) or higher for the Kerosene analytical Group is defined as excessively contaminated. Excessively contaminated soil may be analyzed to validate the relevance of the OVA data and determine if contaminants in the soil exceed State SCTLs.

On January 29, 1998, a total of three grab soil samples were collected to verify petroleum contamination in the unsaturated zone in areas of high, medium, and low OVA headspace readings. Soil borings were advanced to approximately 5 feet below land surface (bls) using stainless-steel hand augers adjacent to the locations of soil borings SB-5, SB-11, and SB-12. Groundwater was encountered at approximately 6 feet bls.

Soil samples BQB00505, BQB01105, and BQB01205 from locations adjacent to soil borings SB-5, SB-11, and SB-12, respectively, were collected approximately 1 foot above the water table (5 feet bls) and underwent OVA headspace screening to verify OVA concentrations measured during the 1995 site assessment. Samples were placed in glass mason jars, sealed with aluminum foil, and analyzed using an OVA equipped with a flame ionization detector, in accordance with Chapter 62-770, FAC. After OVA headspace verification, soil samples were collected for analysis of volatile organic aromatics (VOAs), including methyl tert-butyl ether (MTBE), polynuclear aromatic hydrocarbons (PAHs), and total recoverable petroleum hydrocarbons (TRPH), using Florida Petroleum Residual Organics (FL-PRO). Soil samples were also analyzed for VOAs, MTBE, PAHs, and TRPH after undergoing the USEPA Method 1312, SPLP. Soil boring locations and analytical results for soil and SPLP samples are presented on Figure 3-1.

Soil sample and SPLP analytical results are presented in Appendix B, Laboratory Analytical Results, and summarized in Table 3-1 and Table 3-2, respectively. The SPLP sample, which is liquid, is designated BQB01105L, to differentiate it from its corresponding soil sample. Soil analytical results (Table 3-1) indicate that ethylbenzene, total xylenes, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, and TRPH were detected in soil sample BQB1105 from soil boring location SB-11. Of the compounds detected, only benzo(a)anthracene (5.1 mg/kg) and TRPH (14,000 mg/kg) exceeded the State SCTLs. However, when SPLP was applied to soil sample BQB1105, producing SPLP sample BQB1105L, none of the compounds detected in the soil sample, including benzo(a)anthracene and TRPH, exceeded the State SCTLs for leachability based on the values listed in Chapter 62-770, FAC, Table IV (Table V^a) (Groundwater Cleanup Target Levels [GCTLs] for Resource Protection/Recovery). The SPLP data verify that excessively contaminated soil at the site is not a continuing source of groundwater contamination.

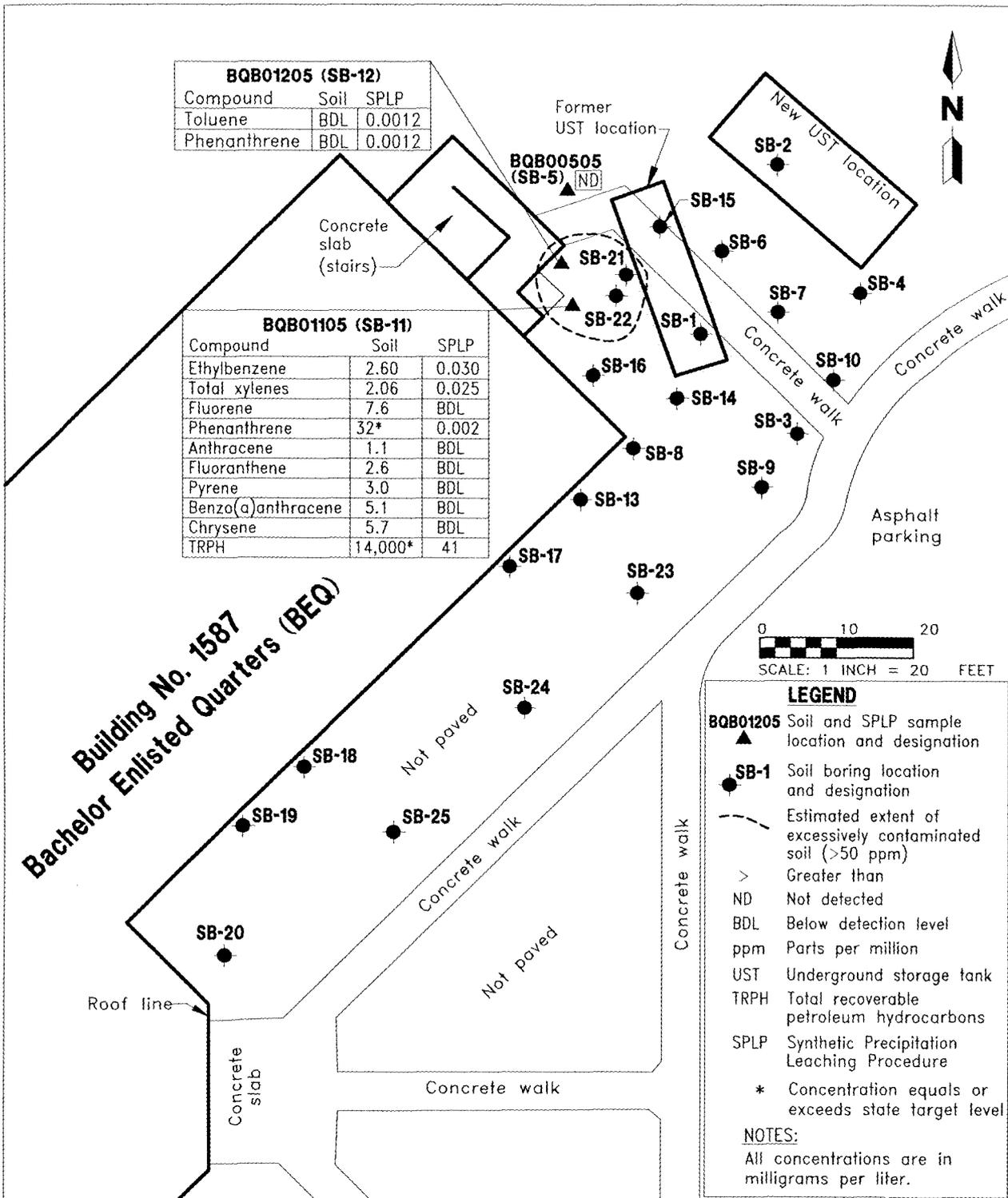


FIGURE 3-1
SOIL CONTAMINATION DISTRIBUTION MAP
JANUARY 29, 1998



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NAVAL STATION MAYPORT
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**Table 3-1
Soil Sample Analytical Results
January 29, 1998**

Contamination Assessment Report Addendum
Bachelor Enlisted Quarters, Building 1587
U.S. Naval Station
Mayport, Florida

Contaminant	Soil Boring, Sample Identifier, and OVA Headspace Reading			¹ State SCTL
	SB-5 BQB00505 (0 ppm)	SB-12 BQB01205 (3 ppm)	SB-11 BQB01105 (180 ppm)	
<u>Purgeable Aromatic Hydrocarbons (USEPA Method 602) (mg/kg)</u>				
Benzene	<0.0012	<0.0013	<0.14	1.1
Toluene	<0.0012	<0.0013	<0.14	300
Ethylbenzene	<0.0012	<0.0013	2.60	240
Xylenes, total	<0.0025	<0.0025	2.06	290
Methyl tert-butyl ether	<0.0012	<0.0013	<0.14	350
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)</u>				
Fluorene	<0.0084	<0.0084	7.6	2,100
Phenanthrene	<0.0084	<0.0084	32	1,900
Anthracene	<0.0041	<0.0041	1.1	19,000
Fluoranthene	<0.0041	<0.0041	2.6	2,800
Pyrene	<0.0041	<0.0041	3.0	2,200
Benzo(a)anthracene	<0.0041	<0.0041	² 5.1	1.4
Chrysene	<0.0041	<0.0041	5.7	140
<u>Total Recoverable Petroleum Hydrocarbons [TRPH] (FL-PRO Method) (mg/kg)</u>				
TRPH	<5.0	<5.1	² 14,000	350

¹ Chapter 62-770, Florida Administrative Code, Table IV, Direct Exposure 1#.

² Concentration equals or exceeds State SCTLs.

Notes: Values in parentheses represent corrected OVA readings of soil sample in ppm.

OVA = organic vapor analyzer.

ppm = parts per million.

SCTL = Soil Cleanup Target Level (Chapter 62-770, Florida Administrative Code); Table IV Soil Cleanup Target Levels: Direct Exposure 1#.

USEPA = U.S. Environmental Protection Agency.

mg/kg = milligrams per kilogram.

< = less than.

FL-PRO = Florida Petroleum Residual Organics.

**Table 3-2
Analytical Results of Soil SPLP Samples
January 29, 1998**

Contamination Assessment Report Addendum
Bachelor Enlisted Quarters, Building 1587
U.S. Naval Station
Mayport, Florida

Contaminant	Soil Boring, Sample Identifier, and OVA Headspace Concentration			¹ State SCTL
	SB-5 BQB00505L (0 ppm)	SB-12 BQB01205L (3 ppm)	SB-11 BQB01105L (180 ppm)	
<u>Purgeable Aromatic Hydrocarbons (USEPA Method 602) (mg/l)</u>				
Benzene	<0.001	<0.001	<0.001	0.007
Toluene	<0.001	0.0012	<0.001	0.4
Ethylbenzene	<0.001	<0.001	0.030	0.4
Xylenes, total	<0.002	<0.002	0.025	0.3
Methyl tert-butyl ether	<0.001	<0.001	<0.001	0.2
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/l)</u>				
Fluoranthene	0.00065	<0.0005	<0.0005	550
Phenanthrene	<0.001	0.0012	0.0022	120
<u>Total Recoverable Petroleum Hydrocarbons (TRPH) (FLA-PRO Method) (mg/l)</u>				
TRPH	NA	NA	41	340

¹ Chapter 62-770, Florida Administrative Code.

Notes: Values in parentheses represent corrected OVA readings of soil sample in ppm.

SPLP = Synthetic Precipitation Leaching Procedure.

OVA = organic vapor analyzer.

ppm = parts per million.

SCTL = Soil Cleanup Target Level (Chapter 62-770, Florida Administrative Code); Table IV Soil Cleanup Target Levels: Table V^a.

USEPA = U.S. Environmental Protection Agency.

mg/l = milligrams per liter.

< = less than.

FL-PRO = Florida Petroleum Residual Organics.

NA = not analyzed.

OVA headspace readings measured during the May 1995 site assessment were significantly higher than the January 1998 verification soil sampling OVA headspace readings. The 1995 OVA readings at 4.5 to 5 feet bls in soil borings SB-11 and SB-12 were 4,200 ppm and 1,800 ppm, respectively. The 1998 OVA readings at 5 feet bls in soil borings SB-11 and SB-12 were 180 ppm and 3 ppm, respectively. The discrepancy in OVA results may, in part, be attributed to small differences in sample location and depth, or to a reduction in volatile organic compound (VOC) concentrations due to *in situ* biodegradation.

3.2 GROUNDWATER MONITORING WELL SAMPLING. Groundwater samples were collected from shallow monitoring wells MPT-BE-MW04 and MPT-BE-MW06, in accordance with the HLA CompQAP. Prior to sample collection a minimum of five well volumes were purged from each monitoring well at a rate not exceeding 1 liter per minute using a peristaltic pump with Teflon™ tubing. Groundwater samples were collected using precleaned, disposable, teflon bailers. The groundwater samples were placed in appropriate containers, packed with ice, and shipped via express overnight delivery under chain-of-custody protocol to CH₂M Hill Laboratories in Montgomery, Alabama, for analyses.

Groundwater samples were analyzed for VOAs (USEPA Methods 601 and 602) only because no other petroleum chemicals of concern were detected during the 1995 site assessment. Equipment rinseate blanks and trip blanks were also collected and analyzed, as appropriate. Analytical results of groundwater samples collected on January 29, 1998, are presented in Appendix B, Laboratory Analytical Results, and summarized in Table 3-3 with the May 1995 groundwater analytical results. Groundwater sample locations and groundwater analytical results are shown on Figure 3-2.

3.2.1 Groundwater Analytical Results Benzene, ethylbenzene, and MTBE were detected in groundwater sample BQG00401 collected from monitoring well MPT-BQ-MW04 on January 29, 1998. Only benzene (1.7 micrograms per liter [$\mu\text{g}/\text{l}$]) slightly exceeded the State Groundwater Cleanup Target Level (GCTL) of 1 $\mu\text{g}/\text{l}$. Ethylbenzene and MTBE concentrations in BQG00401 (1.5 $\mu\text{g}/\text{l}$ and 1.4 $\mu\text{g}/\text{l}$, respectively) were significantly below the respective State GCTLs of 30 $\mu\text{g}/\text{l}$ and 35 $\mu\text{g}/\text{l}$. Only MTBE was detected in groundwater sample BQG00601 from monitoring well MPT-BQ-MW06. The MTBE concentration in BQG00601 (1.1 $\mu\text{g}/\text{l}$) was significantly less than the 35 $\mu\text{g}/\text{l}$ State GCTL.

3.3 GROUNDWATER ELEVATION SURVEY AND AQUIFER CHARACTERISTICS. Depth-to-groundwater measurements for each monitoring well were obtained on January 29, 1998, using an electronic water level indicator. Monitoring wells MPT-BQ-MW01 and MW-05 could not be located and were assumed destroyed during construction activities to replace the UST and sidewalk. Groundwater levels in site monitoring wells ranged from approximately 4 to 7 feet bls. Free product was not detected in any monitoring well at the site.

Monitoring well locations and the top-of-casing elevations were surveyed on August 11, 1995, by a Florida registered professional land surveyor and referenced to the U.S. Coastal and Geodetic Survey 1927 North American Datum and to the National Geodetic Vertical Datum of 1929, respectively. Water table elevations were calculated by subtracting the depth to groundwater from the top-

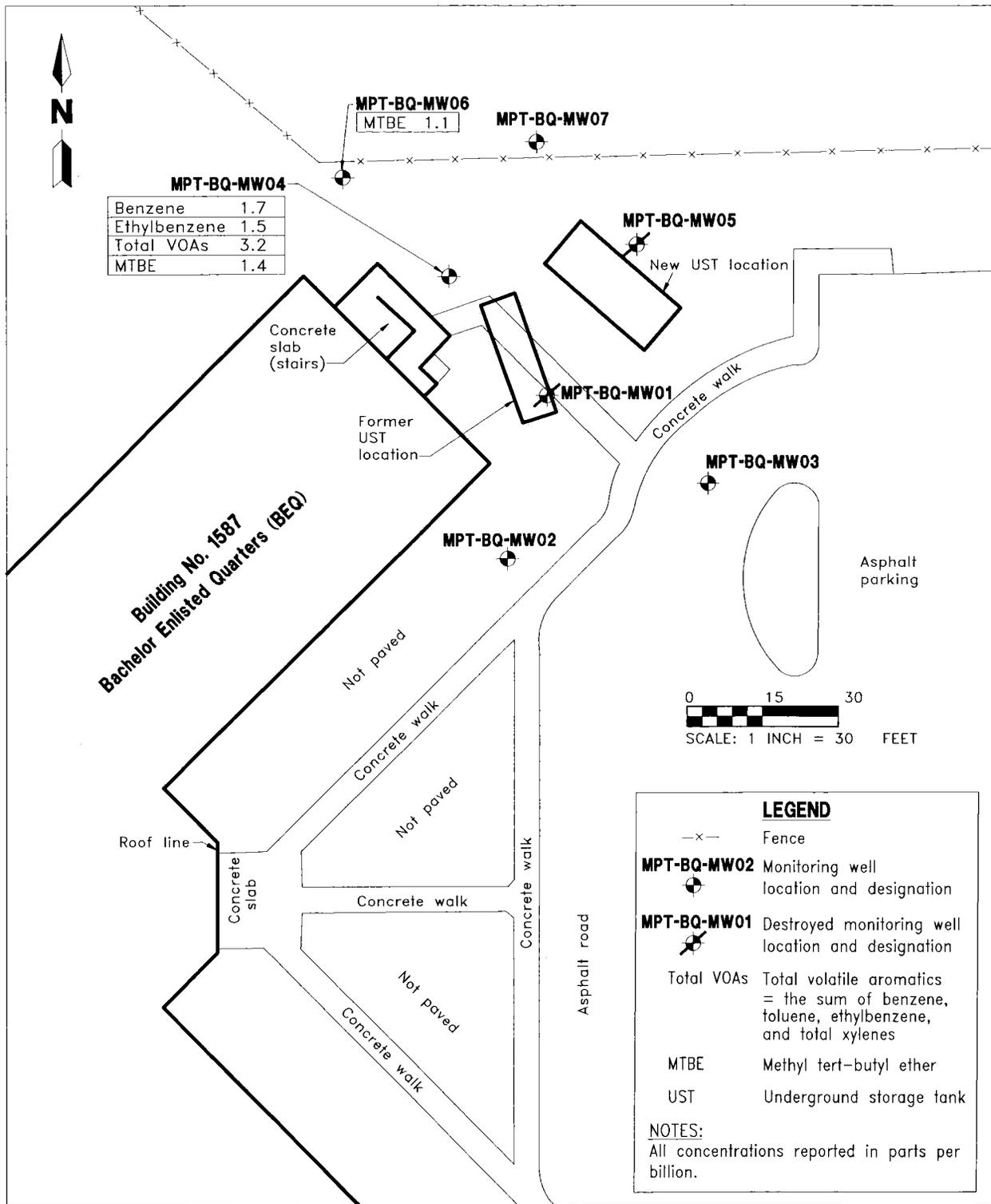
Table 3-3
Summary of Groundwater Analytical Results
May 31, 1995, and January 29, 1998

Contamination Assessment Report Addendum
Bachelor Enlisted Quarters, Building 1587
U.S. Naval Station
Mayport, Florida

Contaminant	Well Identification (MPT-BQ-) and Date Sampled										State Target Level ¹
	MW01 5/31/95	MW01DS 5/31/95	MW02 5/31/95	MW03 5/31/95	MW04 5/31/95	MW04 1/29/98	MW05 5/31/95	MW06 5/31/95	MW06 1/29/98	MW07 5/31/95	
Volatile Organic Compounds (USEPA Method 601/602) ($\mu\text{g}/\ell$)											
Benzene	2.5	3.2	ND	ND	3.1	1.7	ND	ND	ND	ND	1
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40
Ethylbenzene	5.7	6.9	ND	ND	16	1.5	ND	2.7	ND	ND	30
Xylenes, total	3.2	4.5	ND	20							
Total VOAs	11.4	14.6	ND	ND	19.1	3.2	ND	2.7	ND	ND	NA
Methyl tert-butyl ether	ND	ND	ND	ND	ND	1.4	ND	ND	1.1	ND	35
Polynuclear Aromatic Hydrocarbons (PAHs) (USEPA Method 610) ($\mu\text{g}/\ell$)											
Total Naphthalenes	ND	ND	ND	ND	ND	NS	ND	ND	NS	ND	NA
Total PAHs (excluding naphthalenes)	ND	ND	ND	ND	ND	NS	ND	ND	NS	ND	NA
Total Recoverable Petroleum Hydrocarbons (TRPH) (USEPA Method 418.1) (mg/l)											
TRPH	ND	ND	ND	ND	ND	NS	ND	ND	NS	ND	5
Ethylene Dibromide (EDB) (EPA 601) ($\mu\text{g}/\ell$)											
EDB	ND	ND	ND	ND	ND	NS	ND	ND	NS	ND	0.02
Lead (USEPA Method 239.2) ($\mu\text{g}/\ell$)											
Lead, unfiltered	ND	ND	ND	ND	ND	NS	ND	ND	NS	ND	15

¹ Chapter 62-770, Florida Administrative Code, Table V, Groundwater Cleanup Target Levels for Resource Protection/Recovery (September 23, 1997).

Notes: DS = duplicate sample.
 USEPA = U.S. Environmental Protection Agency.
 $\mu\text{g}/\ell$ = micrograms per liter.
 ND = not detected.
 Total VOAs = total volatile organic aromatics: the sum of benzene, toluene, ethylbenzene, and xylenes.
 NA = not applicable.
 mg/ℓ = milligrams per liter.
 NS = not sampled.



**FIGURE 3-2
DISTRIBUTION OF PETROLEUM
COMPOUNDS IN GROUNDWATER,
JANUARY 29, 1998**



**CONTAMINATION ASSESSMENT
REPORT ADDENDUM
BEQ, BUILDING 1587**

**NAVAL STATION MAYPORT
MAYPORT, FLORIDA**

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-of-casing elevation recorded for each monitoring well. Depth-to-water, top-of-casing, and water table elevation data for each groundwater monitoring well are presented in Table 3-4. A water table elevation map is shown on Figure 3-3.

The January 29, 1998, water table elevation data indicate the groundwater flow direction is north-northeast with an average hydraulic gradient of 0.0017 foot per foot. The January 29, 1998, groundwater flow direction and hydraulic gradient are consistent with the May 31, 1995, results.

**Table 3-4
Water Table Elevation Data, January 29, 1998**

Contamination Assessment Report Addendum
Bachelor Enlisted Quarters, Building 1587
U.S. Naval Station
Mayport, Florida

Monitoring Well Number	Total Well Depth (feet bls)	Screened Interval (feet bls)	TOC Elevation	Depth to Water (feet TOC)	Water Level Elevation (feet TOC)
MPT-BQ-MW01	14.0	4.0 to 14.0	10.47	NM	NM
MPT-BQ-MW02	13.5	3.5 to 13.5	10.18	5.29	4.89
MPT-BQ-MW03	13.0	3.0 to 13.0	8.63	3.77	4.86
MPT-BQ-MW04	14.0	4.0 to 14.0	11.95	7.12	4.83
MPT-BQ-MW05	14.0	4.0 to 14.0	10.58	NM	NM
MPT-BQ-MW06	14.0	4.0 to 14.0	12.27	7.48	4.79
MPT-BQ-MW07	14.0	4.0 to 14.0	12.07	7.32	4.75

Notes: bls = below land surface.
TOC = top of casing.
NM = not measured.

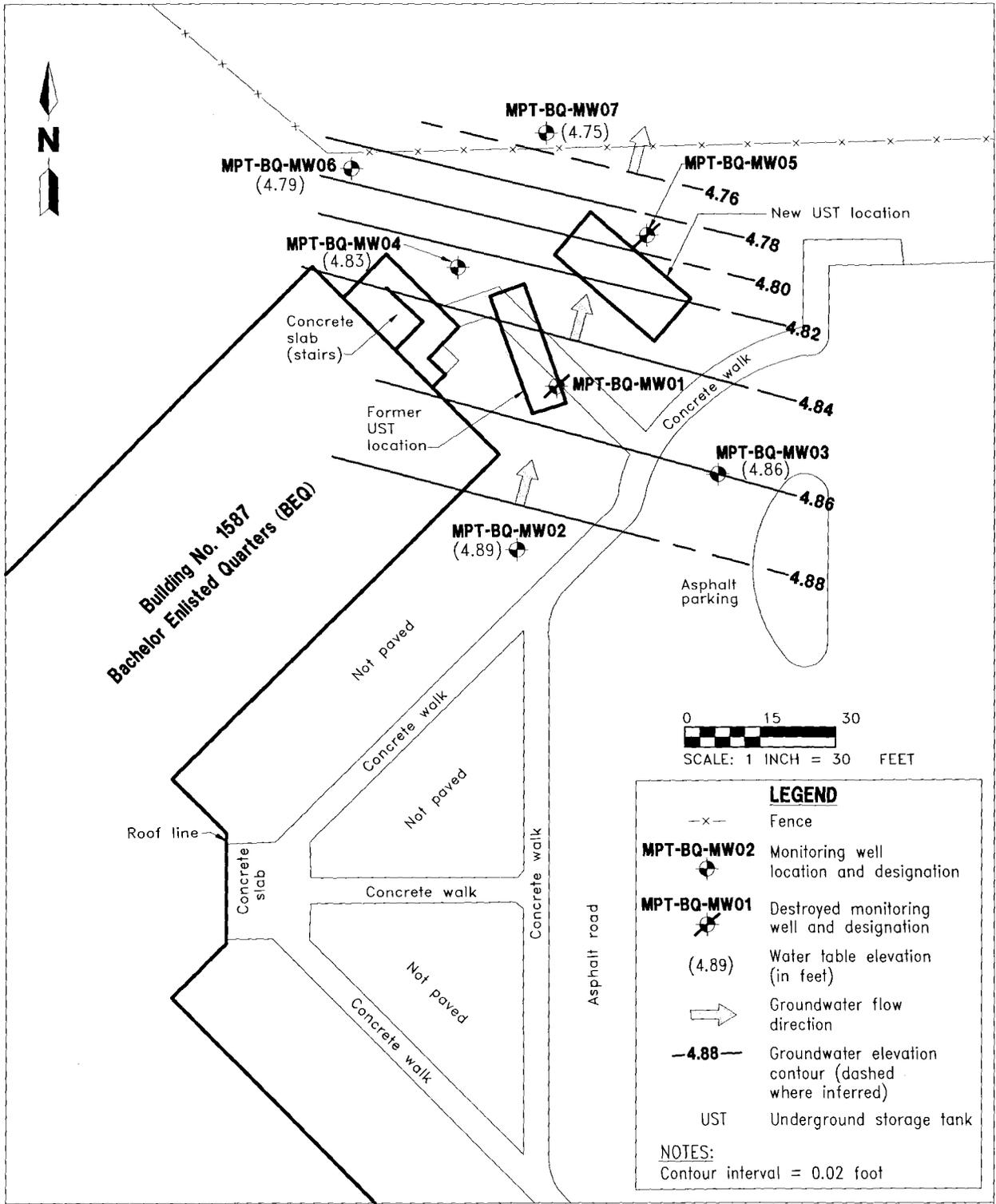


FIGURE 3-3
WATER TABLE ELEVATION CONTOUR MAP
JANUARY 29, 1998



CONTAMINATION ASSESSMENT
REPORT ADDENDUM
BEQ, BUILDING 1587

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

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4.0 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

4.1 FINDINGS. The summary of findings at the BEQ, Building 1587 site presented below is based on the results of the supplemental investigation and laboratory analytical results.

- OVA headspace concentrations measured January 29, 1998, were significantly lower than the 1995 site-assessment OVA headspace data.
- The TRPH concentration in soil sample BQB01105 (14,000 mg/kg) exceeded the State SCTL of 350 mg/kg.
- SPLP analytical results indicate that none of the petroleum chemicals of concern detected in excessively contaminated soil samples exceeded the State SCTLs for leachability based on the values listed in Chapter 62-770, FAC, Table IV (Table V^a) (Groundwater Cleanup Target Levels for Resource Protection/Recovery).
- Free product was not detected in any site monitoring well.
- Benzene, ethylbenzene, and MTBE were detected in groundwater samples collected January 29, 1998, from monitoring wells MPT-BQ-MW04 and MPT-BQ-MW06. Ethylbenzene and MTBE concentrations were less than the respective State GCTLs. The benzene concentration was slightly greater than the State GCTL of 1 $\mu\text{g}/\ell$.
- Benzene concentrations in groundwater samples collected from monitoring wells MPT-BQ-MW04 and MPT-BQ-MW06 on January 29, 1998, have significantly decreased compared to May 31, 1995, groundwater analytical data.
- The general groundwater flow direction in the surficial aquifer is north-northeast.

4.2 CONCLUSIONS. The following conclusions are based on the findings of the supplemental assessment at the BEQ, Building 1587 site.

- Lower OVA readings in excessively contaminated soil may indicate a reduction in VOC concentrations resulting from *in situ* biodegradation.
- Based on leachability values listed in Chapter 62-770, FAC, Table IV (Table V^a) (Groundwater Cleanup Target Levels for Resource Protection/Recovery), excessively contaminated soil at the site is not a continuing source of groundwater contamination.
- Groundwater sample analytical results indicate petroleum chemicals of concern concentrations have decreased from May 1995 to January 1998, and may indicate natural attenuation of contamination by biodegradation is occurring.

4.3 RECOMMENDATIONS. Based on the findings of the supplemental assessment, HLA recommends overdevelopment of monitoring well MPT-BQ-MW04 for a 72-hour period.

Groundwater samples should be collected from monitoring well MPT-BQ-MW04 approximately 2 weeks after the 72-hour overdevelopment period and analyzed for USEPA Method 602 parameters, including MTBE. A recommendation for either No Further Action with land-use restrictions (Chapter 62-770.680[2]) or Monitoring Only for Natural Attenuation (Chapter 62-770.690[1]) will be made based on the post-overdevelopment groundwater samples analytical results.

5.0 PROFESSIONAL REVIEW CERTIFICATION

This Contamination Assessment Report Addendum was prepared under the direct supervision of a Professional Geologist registered in the State of Florida. This assessment was conducted using sound hydrogeologic principles and professional judgement and is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This report meets the criteria set in Chapter 492 of the Florida Statutes with regard to good professional practices as applied to Chapter 62-770 of the Florida Administrative Code. This report was developed for the BEQ, Building 1587, NAVSTA Mayport, Mayport, Florida, and should not be construed to apply to any other site.

Michael J. Williams
Professional Geologist
P.G. No. 344

Date

REFERENCE

ABB Environmental Services, Inc. 1996. *Contamination Assessment Report, Bachelor Enlisted Quarters, Building 1587, U.S. Naval Station, Mayport, Florida.* Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina (February).

APPENDIX A
CORRESPONDENCE

Department of Environmental Protection

awton Chiles
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

March 29, 1996

Mr. Byas Glover
Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive, PO Box 190010
North Charleston, SC. 29419-9010

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RE: Contamination Assessment Report for Bachelor Enlisted Quarters, Building 1587, U.S.
Naval Station Mayport

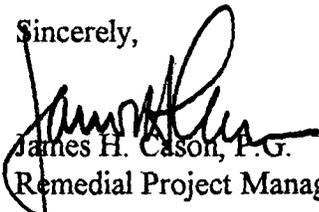
Dear Mr. Glover:

I have reviewed the above document dated February 1996 (received February 26, 1996).
In order to comply with Chapter 62-770, F.A.C., the Navy should accomplish the following:

1. Conduct an Interim Remedial Action in the form of the removal and proper disposal of the excessively contaminated soil.
2. Install a temporary monitoring well in the excavated area and sample the ground water for EPA Method 602 and EPA Method 610 constituents.
3. Resample monitoring wells MW01 through MW07 for EPA Method 602 constituents to confirm the previous analytical data.
4. Submit a CAR Addendum which documents the above actions and which contains appropriate recommendations for the site.

If you have questions or require further clarification, please contact me at (904) 921-4230.

Sincerely,



James H. Cason, P.G.
Remedial Project Manager

APPENDIX B

SOIL AND GROUNDWATER ANALYTICAL DATA

US Naval Station, Mayport
Building 1587 - Analytical Data Report

Lab Sample Number:	MF460008	MF460010	MF460009
Site	MAYPORT-460/1587	MAYPORT-460/1587	MAYPORT-460/1587
Locator	BQB00505	BQB01105	BQB01205
Collect Date:	29-JAN-98	29-JAN-98	29-JAN-98

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Volatile Organics (8010/8020)			ug/kg									
1,1,1-Trichloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
1,1,2,2-Tetrachloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
1,1,2-Trichloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
1,1-Dichloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
1,1-Dichloroethene	-		ug/kg		-		ug/kg		-		ug/kg	
1,2-Dichlorobenzene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
1,2-Dichloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
1,2-Dichloropropane	-		ug/kg		-		ug/kg		-		ug/kg	
1,3-Dichlorobenzene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
1,4-Dichlorobenzene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
2-Chloroethylvinyl ether	-		ug/kg		-		ug/kg		-		ug/kg	
Bromodichloromethane	-		ug/kg		-		ug/kg		-		ug/kg	
Bromoform	-		ug/kg		-		ug/kg		-		ug/kg	
Bromomethane	-		ug/kg		-		ug/kg		-		ug/kg	
Carbon tetrachloride	-		ug/kg		-		ug/kg		-		ug/kg	
Chlorobenzene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
Chloroethane	-		ug/kg		-		ug/kg		-		ug/kg	
Chloroform	-		ug/kg		-		ug/kg		-		ug/kg	
Chloromethane	-		ug/kg		-		ug/kg		-		ug/kg	
Dibromochloromethane	-		ug/kg		-		ug/kg		-		ug/kg	
Dichlorodifluoromethane	-		ug/kg		-		ug/kg		-		ug/kg	
Methylene chloride	-		ug/kg		-		ug/kg		-		ug/kg	
Tetrachloroethene	-		ug/kg		-		ug/kg		-		ug/kg	
Trichloroethene	-		ug/kg		-		ug/kg		-		ug/kg	
Trichlorofluoromethane	-		ug/kg		-		ug/kg		-		ug/kg	
Vinyl chloride	-		ug/kg		-		ug/kg		-		ug/kg	
cis-1,3-Dichloropropene	-		ug/kg		-		ug/kg		-		ug/kg	
trans-1,2-Dichloroethene	-		ug/kg		-		ug/kg		-		ug/kg	
trans-1,3-Dichloropropene	-		ug/kg		-		ug/kg		-		ug/kg	
Benzene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
Ethylbenzene	1.2	U	ug/kg	1.2	2600	ug/kg	ug/kg	140	1.3	U	ug/kg	1.3
Toluene	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3
Xylenes (total)	-		ug/kg		-		ug/kg		-		ug/kg	
m,p-Xylenes	2.5	U	ug/kg	2.5	1600	ug/kg	ug/kg	290	2.5	U	ug/kg	2.5
o-Xylene	1.2	U	ug/kg	1.2	460	ug/kg	ug/kg	140	1.3	U	ug/kg	1.3
Methyl tert-butyl ether	1.2	U	ug/kg	1.2	140	U	ug/kg	140	1.3	U	ug/kg	1.3

US Naval Station, Mayport
Building 1587 - Analytical Data Report

Lab Sample Number:	MF460008	MF460010	MF460010DL	MF460009
Site	MAYPORT-460/1587	MAYPORT-460/1587	MAYPORT-460/1587	MAYPORT-460/1587
Locator	BQB00505	BQB01105	BQB01105DL	BQB01205
Collect Date:	29-JAN-98	29-JAN-98	29-JAN-98	29-JAN-98
	VALUE QUAL UNITS DL			

	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Modified PAH's			ug/kg													
Acenaphthene	84	U	ug/kg	84	16000	U	ug/kg	16000	39000	U	ug/kg	39000	80	U	ug/kg	80
Acenaphthylene	84	U	ug/kg	84	16000	U	ug/kg	16000	39000	U	ug/kg	39000	80	U	ug/kg	80
Anthracene	4.1	U	ug/kg	4.1	1100	U	ug/kg	770	1900	U	ug/kg	1900	3.9	U	ug/kg	3.9
Benzo (a) anthracene	4.1	U	ug/kg	4.1	5100	U	ug/kg	770	5200	U	ug/kg	1900	3.9	U	ug/kg	3.9
Benzo (a) pyrene	4.1	U	ug/kg	4.1	770	U	ug/kg	770	1900	U	ug/kg	1900	3.9	U	ug/kg	3.9
Benzo (b) fluoranthene	4.1	U	ug/kg	4.1	770	U	ug/kg	770	1900	U	ug/kg	1900	3.9	U	ug/kg	3.9
Benzo (g,h,i) perylene	8.4	U	ug/kg	8.4	1600	U	ug/kg	1600	3900	U	ug/kg	3900	8	U	ug/kg	8
Benzo (k) fluoranthene	4.1	U	ug/kg	4.1	770	U	ug/kg	770	1900	U	ug/kg	1900	3.9	U	ug/kg	3.9
Chrysene	4.1	U	ug/kg	4.1	5700	U	ug/kg	770	5600	U	ug/kg	1900	3.9	U	ug/kg	3.9
Dibenzo (a,h) anthracene	8.4	U	ug/kg	8.4	1600	U	ug/kg	1600	3900	U	ug/kg	3900	8	U	ug/kg	8
Fluoranthene	4.1	U	ug/kg	4.1	2600	U	ug/kg	770	2300	U	ug/kg	1900	3.9	U	ug/kg	3.9
Fluorene	8.4	U	ug/kg	8.4	7600	U	ug/kg	1600	7100	U	ug/kg	3900	8	U	ug/kg	8
Indeno (1,2,3-cd) pyrene	8.4	U	ug/kg	8.4	1600	U	ug/kg	1600	3900	U	ug/kg	3900	8	U	ug/kg	8
1-Methylnaphthalene	-		ug/kg		-		ug/kg		-		ug/kg		-		ug/kg	
2-Methylnaphthalene	-		ug/kg		-		ug/kg		-		ug/kg		-		ug/kg	
Naphthalene	84	U	ug/kg	84	16000	U	ug/kg	16000	39000	U	ug/kg	39000	80	U	ug/kg	80
Phenanthrene	8.4	U	ug/kg	8.4	32000	E	ug/kg	1600	32000	D	ug/kg	3900	8	U	ug/kg	8
Pyrene	4.1	U	ug/kg	4.1	3000	U	ug/kg	770	2400	U	ug/kg	1900	3.9	U	ug/kg	3.9
TRPH			mg/kg													
Total petroleum hydrocarbons	5	U	mg/kg	5	-		mg/kg		14000		mg/kg	460	5.1	U	mg/kg	5.1

US Naval Station, Mayport
 Building 1587 - Analytical Data Report

Lab Sample Number:	MF460016	MF460018	MF460017
Site	MAYPORT-460/1587	MAYPORT-460/1587	MAYPORT-460/1587
Locator	BQB00505L	BQB01105L	BQB01205L
Collect Date:	29-JAN-98	29-JAN-98	29-JAN-98

	ug/l	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
Volatile Organics (8010/8020)													
1,1,1-Trichloroethane	-			ug/l		-			ug/l	-			ug/l
1,1,2,2-Tetrachloroethane	-			ug/l		-			ug/l	-			ug/l
1,1,2-Trichloroethane	-			ug/l		-			ug/l	-			ug/l
1,1-Dichloroethane	-			ug/l		-			ug/l	-			ug/l
1,1-Dichloroethene	-			ug/l		-			ug/l	-			ug/l
1,2-Dichlorobenzene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
1,2-Dichloroethane	-			ug/l		-			ug/l	-			ug/l
1,2-Dichloropropane	-			ug/l		-			ug/l	-			ug/l
1,3-Dichlorobenzene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
1,4-Dichlorobenzene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
2-Chloroethylvinyl ether	-			ug/l		-			ug/l	-			ug/l
Bromodichloromethane	-			ug/l		-			ug/l	-			ug/l
Bromoform	-			ug/l		-			ug/l	-			ug/l
Bromomethane	-			ug/l		-			ug/l	-			ug/l
Carbon tetrachloride	-			ug/l		-			ug/l	-			ug/l
Chlorobenzene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
Chloroethane	-			ug/l		-			ug/l	-			ug/l
Chloroform	-			ug/l		-			ug/l	-			ug/l
Chloromethane	-			ug/l		-			ug/l	-			ug/l
Dibromochloromethane	-			ug/l		-			ug/l	-			ug/l
Dichlorodifluoromethane	-			ug/l		-			ug/l	-			ug/l
Methylene chloride	-			ug/l		-			ug/l	-			ug/l
Tetrachloroethene	-			ug/l		-			ug/l	-			ug/l
Trichloroethene	-			ug/l		-			ug/l	-			ug/l
Trichlorofluoromethane	-			ug/l		-			ug/l	-			ug/l
Vinyl chloride	-			ug/l		-			ug/l	-			ug/l
cis-1,3-Dichloropropene	-			ug/l		-			ug/l	-			ug/l
trans-1,2-Dichloroethene	-			ug/l		-			ug/l	-			ug/l
trans-1,3-Dichloropropene	-			ug/l		-			ug/l	-			ug/l
Benzene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
Ethylbenzene	1 U			ug/l	1	30			ug/l	1	1 U		ug/l
Toluene	1 U			ug/l	1	1 U			ug/l	1	1.2		ug/l
Xylenes (total)	-			ug/l		-			ug/l	-			ug/l
m,p-Xylenes	2 U			ug/l	2	25			ug/l	2	2 U		ug/l
o-Xylene	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l
Methyl tert-butyl ether	1 U			ug/l	1	1 U			ug/l	1	1 U		ug/l

US Naval Station, Mayport
Building 1587 - Analytical Data Report

Lab Sample Number:	MF460016			MF460018			MF634001DL			MF460017		
Site	MAYPORT-460/1587			MAYPORT-460/1587			MAYPORT-460/1587			MAYPORT-460/1587		
Locator	BQB00505L			BQB01105L			BQB01105L			BQB01205L		
Collect Date:	29-JAN-98			29-JAN-98			29-JAN-98			29-JAN-98		
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL

	ug/l											
Modified PAH's												
Acenaphthene	10 U	ug/l		10	10 U	ug/l		10	-	ug/l		10
Acenaphthylene	10 U	ug/l		10	10 U	ug/l		10	-	ug/l		10
Anthracene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Benzo (a) anthracene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Benzo (a) pyrene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Benzo (b) fluoranthene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Benzo (g,h,i) perylene	1 U	ug/l		1	1 U	ug/l		1	-	ug/l		1
Benzo (k) fluoranthene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Chrysene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Dibenzo (a,h) anthracene	1 U	ug/l		1	1 U	ug/l		1	-	ug/l		1
Fluoranthene	.65 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
Fluorene	1 U	ug/l		1	1 U	ug/l		1	-	ug/l		1
Indeno (1,2,3-cd) pyrene	1 U	ug/l		1	1 U	ug/l		1	-	ug/l		1
1-Methylnaphthalene	-	ug/l		-	-	ug/l		-	-	ug/l		-
2-Methylnaphthalene	-	ug/l		-	-	ug/l		-	-	ug/l		-
Naphthalene	10 U	ug/l		10	10 U	ug/l		10	-	ug/l		10
Phenanthrene	1 U	ug/l		1	2.2 U	ug/l		1	-	ug/l		1
Pyrene	.5 U	ug/l		.5	.5 U	ug/l		.5	-	ug/l		.5
TRPH	mg/l											
Total petroleum hydrocarbons	-	mg/l		-	-	mg/l		41	mg/l	.1	-	mg/l

Sample extracted by SPLP Method 1312

US Naval Station, Mayport
 Building 1587 - Analytical Data Report

Lab Sample Number: MF460011 MF460012
 Site MAYPORT-460/1587 MAYPORT-460/1587
 Locator BQG00401 BQG00601
 Collect Date: 29-JAN-98 29-JAN-98

VALUE QUAL UNITS DL VALUE QUAL UNITS DL

	ug/l					
Volatile Organics (601/602)						
1,1,1-Trichloroethane	1 U	ug/l	1	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1	1 U	ug/l	1
1,2-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1	1 U	ug/l	1
1,3-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1
1,4-Dichlorobenzene	1 U	ug/l	1	1 U	ug/l	1
2-Chloroethylvinyl ether	1 U	ug/l	1	1 U	ug/l	1
Bromodichloromethane	1 U	ug/l	1	1 U	ug/l	1
Bromoform	1 U	ug/l	1	1 U	ug/l	1
Bromomethane	1 U	ug/l	1	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1	1 U	ug/l	1
Chloroethane	1 U	ug/l	1	1 U	ug/l	1
Chloroform	1 U	ug/l	1	1 U	ug/l	1
Chloromethane	1 U	ug/l	1	1 U	ug/l	1
Dibromochloromethane	1 U	ug/l	1	1 U	ug/l	1
Dichlorodifluoromethane	1 U	ug/l	1	1 U	ug/l	1
Methylene chloride	5 U	ug/l	5	5 U	ug/l	5
Tetrachloroethene	1 U	ug/l	1	1 U	ug/l	1
Trichloroethene	1 U	ug/l	1	1 U	ug/l	1
Trichlorofluoromethane	1 U	ug/l	1	1 U	ug/l	1
Vinyl chloride	1 U	ug/l	1	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1	1 U	ug/l	1
trans-1,2-Dichloroethene	1 U	ug/l	1	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1	1 U	ug/l	1
Benzene	1.7	ug/l	1	1 U	ug/l	1
Ethylbenzene	1.5	ug/l	1	1 U	ug/l	1
Toluene	1 U	ug/l	1	1 U	ug/l	1
Xylenes (total)	-	ug/l		-	ug/l	
m,p-Xylenes	2 U	ug/l	2	2 U	ug/l	2
o-Xylene	1 U	ug/l	1	1 U	ug/l	1
Methyl tert-butyl ether	1.4	ug/l	1	1.1	ug/l	1

MF 460

ABB ENVIRONMENTAL SERVICES, INC.

SDG # MU010

COC# 012998A1 DATE: 29-Jan-98

ABB-ES Task Order #: 119 Job #: 2536-15 Tallahassee Ph#: (904) 656-1293 Field Office Ph#: (904) 246-0205 Field Fax #: Not Available	PROJECT NAME: NAVSTA MAYPORT		LAB TEST CODES								COC Serial No.			
	SITE NAME: MAYPORT		1	2	3	4	5	6	7	8	B 0400			
	PROJECT MANAGER: TERRY HANSEN		TOTAL	VOC	VOC/SPLP	SVOC	SVOC & TRPH	SPLP	EDB	T	QAL LAB CODE			
COPY TO: Terry Hansen & Frank Lesesne		CON	601/602	8020/602	8310	8310/FLPro	8310	504	I	PARAMETER				
REQ. COMPLETION DATE: 02/28/98		ERS	HCL	NONE	NONE	NONE	NONE	NONE	C	METHOD				
SAMPLE IDENTIFIER	SAMPLE DATE	SAMPLE TIME	M A	SAMPLE TYPE					S	PRESERVATIVE				
			T	C						VOLUME				
			R	O										
			I	M										
			X	P										
Comments				B										
	CUT010	28-Jan-98	10:00	W	W	3	3				N			
	CUR010	28-Jan-98	10:50	W	W	4	3		1		N			
	CUB00205	28-Jan-98	12:40	S	S	4		2		1	N			
	CUB00605	28-Jan-98	12:45	S	S	4		2		1	N			
	CUB01305	28-Jan-98	13:30	S	S	4		2		1	N			
	CUG00401	28-Jan-98	15:10	W	W	4	3		1		N			
	CUG00301	28-Jan-98	15:45	W	W	4	3		1		N			
	BQB00505	29-Jan-98	09:45	S	S	4		2		1	N			
	BQB01205	29-Jan-98	10:15	S	S	4		2		1	N			
	BQB01105	29-Jan-98	10:45	S	S	4		2		1	N			
	BQG00401	29-Jan-98	13:15	W	W	3	3				N			
TOTAL PARAMETERS PER COLUMN						42	15	12	3	6	6	0	0	EPA QC LEVEL

NOTES:

SENT TO QAL - MONTGOMERY, AL

SAMPLED/RELINQUISHED BY: <i>Michael O. Jayne</i>	DATE: 1/29/98	TIME: 1700	RECEIVED BY: <i>J. H. H.</i>	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:

SHIPPING AIRBILL NUMBER:

0783466574 SHIPPED VIA FEDERAL EXPRESS

WHITE/YELLOW COPY - LABORATORY PINK COPY - ABB-ES PAGE ___ OF ___

0077

MF460

ABB ENVIRONMENTAL SERVICES, INC.

SDG # MU010

COC# 012998A2

DATE: 29-Jan-98

ABB-ES Task Order #: 119 Job #: 2536-15 Tallahassee Ph#: (904) 656-1293 Field Office Ph#: (904) 246-0205 Field Fax #: Not Available Comments	PROJECT NAME: NAVSTA MAYPORT SITE NAME: MAYPORT PROJECT MANAGER: TERRY HANSEN COPY TO: Terry Hansen & Frank Lesesne REQ. COMPLETION DATE: 02/28/98		LAB TEST CODES 1 2 3 4 5 6 7 8 9									COC Serial No. B 0399		
	SAMPLE IDENTIFIER BQG00601	SAMPLE DATE 29-Jan-98	SAMPLE TIME 13:45	M A W	SAMPLE TYPE W	TOTAL CON TAIN ERS 3	VOC 601/602 HCL 3 x 40 ml	VOC/SPLP 8020/602 NONE 2 x 2 oz	SVOC 8310 NONE 1 L	SVOC & TRPH 8310/FLPro NONE 8 oz	SPLP 8310 NONE 8 oz	EDB 504 NONE 125 mL	T I C S N	QAL LAB CODE PARAMETER METHOD PRESERVATIVE VOLUME
*End of SDG MU010					3	3	0	0	0	0	0			
TOTAL PARAMETERS PER COLUMN					3	3	0	0	0	0	0			
NOTES: SENT TO QAL - MONTGOMERY, AL														
SAMPLED/RELINQUISHED BY: <i>Michael O. Jagne</i>				RECEIVED BY: <i>Jan 30/98</i>				RELINQUISHED BY:				RECEIVED BY:		
DATE: 1/29/98 TIME: 1700				DATE: 1/30/98 TIME: 1000				DATE: TIME:				DATE: TIME:		
RELINQUISHED BY:				RECEIVED BY:				RELINQUISHED BY:				RECEIVED BY:		
DATE: TIME:				DATE: TIME:				DATE: TIME:				DATE: TIME:		
SHIPPING AIRBILL NUMBER: 0783466574 SHIPPED VIA FEDERAL EXPRESS														

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PAGE ___ OF ___

000078



ENSECO-WADSWORTH/ALERT
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW05

WO #: O4628104
LAB #: B4F210008-007
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylene dibromide	ND	0.020	FL-HRS 601-M	06/30/94	4182046

SURROGATE RECOVERY

%

ACCEPTABLE LIMITS

Bromoform

85

(41 - 152)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW05

WO #: 04628
LAB #: B4F210008-007
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	6/28/94	4180122

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW05 FILTERED

WO #: 04629
LAB #: B4F210008-008
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
- - DISSOLVED METALS - - Lead	ND	5.0	ug/L	MCAWW 239.2	6/22/94	4173037

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW06

WO #: 04630103
LAB #: B4F210008-009
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC Volatiles -----					
2 OF 2					
<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Trichlorofluoromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Methylene chloride	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Tetrachloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
Toluene	5.7	1.0	USEPA 601/2	06/29/94	4180048
1,1,1-Trichloroethane	2.9	1.0	USEPA 601/2	06/29/94	4180048
1,1,2-Trichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Trichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
Vinyl chloride	ND	1.0	USEPA 601/2	06/29/94	4180048
Xylenes, Total	11	1.0	USEPA 601/2	06/29/94	4180048
Methyl tert-butyl ether	ND	1.0	USEPA 601/2	06/29/94	4180048

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	111	(78 - 122)
Trifluorotoluene	98	(73 - 131)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW06

WO #: 04630102
LAB #: B4F210008-009
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC/MS Semi-Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Acenaphthylene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Anthracene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Benzo (a) anthracene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Benzo (b) fluoranthene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Benzo (k) fluoranthene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Benzo (ghi) perylene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Benzo (a) pyrene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Chrysene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Dibenz (a, h) anthracene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Fluoranthene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
Fluorene	6.1	5.0	USEPA 625	06/22-06/27/94	4173064
Indeno (1, 2, 3 - cd) pyrene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
2-Methylnaphthalene	56	5.0	USEPA 625	06/22-06/27/94	4173064
Naphthalene	50	5.0	USEPA 625	06/22-06/27/94	4173064
Phenanthrene	6.2	5.0	USEPA 625	06/22-06/27/94	4173064
Pyrene	ND	5.0	USEPA 625	06/22-06/27/94	4173064
1-Methylnaphthalene	57	5.0	USEPA 625	06/22-06/27/94	4173064

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	51	(22 - 135)
2-Fluorobiphenyl	38	(34 - 140)
Terphenyl-d14	14	(10 - 132)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW06

WO #: 04630
LAB #: B4F210008-009
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Lead	20.6	5.0	ug/L	MCAWW 239.2	6/23/94	4174003

NOTE: AS RECEIVED



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW09

WO #: 04632103
LAB #: B4F210008-011
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC Volatiles -----					
PARAMETER	1 OF 2		METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
	RESULT (ug/L)	REPORTING LIMIT			
Benzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromodichloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromoform	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromomethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Carbon tetrachloride	ND	1.0	USEPA 601/2	06/29/94	4180048
Chlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Dibromochloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
2-Chloroethyl vinyl ether	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloroform	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,3-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,4-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Dichlorodifluoromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1-Dichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
cis-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
trans-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichloropropane	ND	1.0	USEPA 601/2	06/29/94	4180048
cis-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/29/94	4180048
trans-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/29/94	4180048
Ethylbenzene	3.8	1.0	USEPA 601/2	06/29/94	4180048
<u>SURROGATE RECOVERY</u>	%	<u>ACCEPTABLE LIMITS</u>			
Bromochloromethane	96	(78 - 122)			
Trifluorotoluene	99	(73 - 131)			

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW09

WO #: 04632104
LAB #: B4F210008-011
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylene dibromide	ND	0.020	FL-HRS 601-M	06/30/94	4182046

SURROGATE RECOVERY

%

ACCEPTABLE LIMITS

Bromoform

129

(41 - 152)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW09

WO #: 04632
LAB #: B4F210008-011
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Lead	27.5	5.0	ug/L	MCAWW 239.2	6/23/94	4174003

NOTE: AS RECEIVED



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-04S

WO #: 04633
LAB #: B4F210008-012
MATRIX: SOLID

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Nitrogen, Total Kjeldahl	9.6	0.62	mg/kg	MCAWW 351.3	7/01/94	4182048
Nitrate-Nitrite	0.32	0.31	mg/kg	MCAWW 353.3	7/06/94	4187089
Phosphorous, Total	165	24.9	mg/kg	MCAWW 365.2	7/01/94	4182120
Sulfide	69.6	62.1	mg/kg	SW846 9030	6/23/94	4175068
Petroleum Hydrocarbons, Total Recoverable	1,260	24.9	mg/kg	SW846 9073	6/23/94	4172062
Solids, Total (TS)	80.5	1.0	%	MCAWW 160.3 M	6/24/94	4175126
Nitrogen, Ammonia	ND	31.1	mg/kg	MCAWW 350.2 M	6/30/94	4181070

NOTE: DRY WEIGHT

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-EQ1

WO #: O4634103
LAB #: B4F210008-013
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

GC Volatiles

1 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromodichloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromoform	ND	1.0	USEPA 601/2	06/29/94	4180048
Bromomethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Carbon tetrachloride	ND	1.0	USEPA 601/2	06/29/94	4180048
Chlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Dibromochloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
2-Chloroethyl vinyl ether	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloroform	ND	1.0	USEPA 601/2	06/29/94	4180048
Chloromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,3-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,4-Dichlorobenzene	ND	1.0	USEPA 601/2	06/29/94	4180048
Dichlorodifluoromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1-Dichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
cis-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
trans-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,2-Dichloropropane	ND	1.0	USEPA 601/2	06/29/94	4180048
cis-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/29/94	4180048
trans-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/29/94	4180048
Ethylbenzene	ND	1.0	USEPA 601/2	06/29/94	4180048

SURROGATE RECOVERY

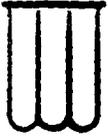
%

ACCEPTABLE LIMITS

Bromochloromethane	105	(78 - 122)
Trifluorotoluene	98	(73 - 131)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-EQ1

WO #: 04634104
LAB #: B4F210008-013
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylene dibromide	ND	0.020	FL-HRS 601-M	06/30/94	4182046

SURROGATE RECOVERY

%

ACCEPTABLE LIMITS

Bromoform

97

(41 - 152)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW09 FILTERED

WO #: 04784
LAB #: B4F210008-015
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
- - DISSOLVED METALS - -						
Lead	ND	5.0	ug/L	MCAWW 239.2	6/22/94	4173037

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-EQ1

WO #: 04634
LAB #: B4F210008-013
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Lead	ND	5.0	ug/L	MCAWW 239.2	6/23/94	4174003

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

TRIP BLANK

WO #: O4636101
LAB #: B4F210008-014
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/21/94

GC Volatiles

2 OF 2

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Trichlorofluoromethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Methylene chloride	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Tetrachloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
Toluene	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1,1-Trichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
1,1,2-Trichloroethane	ND	1.0	USEPA 601/2	06/29/94	4180048
Trichloroethene	ND	1.0	USEPA 601/2	06/29/94	4180048
Vinyl chloride	ND	1.0	USEPA 601/2	06/29/94	4180048
Xylenes, Total	ND	1.0	USEPA 601/2	06/29/94	4180048
Methyl tert-butyl ether	ND	1.0	USEPA 601/2	06/29/94	4180048

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	111	(78 - 122)
Trifluorotoluene	98	(73 - 131)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



ENSECO-WADSWORTH/
Laboratories

QUALITY ASSURANCE / QUALITY CONTROL
PROGRAM SUMMARY

Wadsworth/ALERT Laboratories considers continuous analytical method performance evaluations to be an integral portion of the data package, and routinely includes the pertinent QA/QC data associated with various analytical result reports. Brief discussions of the various QA/QC procedures utilized to measure acceptable method and matrix performance follow.

Surrogate Spike Recovery Evaluations

Known concentrations of designated surrogate spikes, consisting of a number of similar, non-method compounds or method compound analogues, are added, as appropriate, to routine GC and GC/MS sample fractions prior to extraction and analysis. The percent recovery determinations calculated from the subsequent analysis is an indication of the overall method efficiency for the individual sample. This surrogate spike recovery data is displayed alongside acceptable analytical method performance limits at the bottom of each applicable analytical result report sheet.

NOTE: Acceptable method performance for Base/Neutral Acid extractables is indicated by two (2) of three (3) surrogates for each fraction with a minimum recovery of ten (10) percent each. For Pesticides one (1) of two (2) surrogates meeting performance criteria is acceptable.

Laboratory Analytical Method Blank Evaluations

Laboratory analytical method blanks are systematically prepared and analyzed in order to continuously evaluate the system interferences and background contamination levels associated with each analytical method. These method blanks include all aspects of actual laboratory method analysis (chemical reagents, glassware, etc.), substituting laboratory reagent water or solid for actual sample. The method blank must not contain any analytes above the reported detection limit. The following common laboratory contaminants are exceptions to this rule provided they are not present at greater than five times the detection limit.

Volatiles

Methylene chloride
Toluene
2-Butanone
Acetone

Semi-volatiles

Dimethyl phthalate
Diethyl phthalate
Di-n-butyl phthalate
Butyl benzyl phthalate
Bis (2-ethylhexyl) phthalate

Metals

Calcium
Magnesium
Sodium

A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method blanks.

Laboratory Analytical Method Check Sample Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to a laboratory reagent blank prior to extraction and analysis. Percent recovery determinations demonstrate the performance of the analytical method. Failure of a check sample to meet established laboratory recovery criteria is cause to stop the analysis until the problem is resolved.



LAB #: B4F290000-048

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (<u>ug/L</u>)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	6/28/94	4180048
Bromodichloromethane	ND	1.0	6/28/94	4180048
Bromoform	ND	1.0	6/28/94	4180048
Bromomethane	ND	1.0	6/28/94	4180048
Carbon tetrachloride	ND	1.0	6/28/94	4180048
Chlorobenzene	ND	1.0	6/28/94	4180048
Dibromochloromethane	ND	1.0	6/28/94	4180048
Chloroethane	ND	1.0	6/28/94	4180048
2-Chloroethyl vinyl ether	ND	1.0	6/28/94	4180048
Chloroform	ND	1.0	6/28/94	4180048
Chloromethane	ND	1.0	6/28/94	4180048
1,2-Dichlorobenzene	ND	1.0	6/28/94	4180048
1,3-Dichlorobenzene	ND	1.0	6/28/94	4180048
1,4-Dichlorobenzene	ND	1.0	6/28/94	4180048
Dichlorodifluoromethane	ND	1.0	6/28/94	4180048
1,1-Dichloroethane	ND	1.0	6/28/94	4180048
1,2-Dichloroethane	ND	1.0	6/28/94	4180048
1,1-Dichloroethene	ND	1.0	6/28/94	4180048
cis-1,2-Dichloroethene	ND	1.0	6/28/94	4180048
trans-1,2-Dichloroethene	ND	1.0	6/28/94	4180048
1,2-Dichloropropane	ND	1.0	6/28/94	4180048
cis-1,3-Dichloropropene	ND	1.0	6/28/94	4180048
trans-1,3-Dichloropropene	ND	1.0	6/28/94	4180048
Ethylbenzene	ND	1.0	6/28/94	4180048
Trichlorofluoromethane	ND	1.0	6/28/94	4180048
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Bromochloromethane	101	(78 - 122)		
Trifluorotoluene	99	(73 - 131)		

NOTE:

ND (NONE DETECTED)



LAB #: B4F300000-090

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	6/29/94	4181090
Bromodichloromethane	ND	1.0	6/29/94	4181090
Bromoform	ND	1.0	6/29/94	4181090
Bromomethane	ND	1.0	6/29/94	4181090
Carbon tetrachloride	ND	1.0	6/29/94	4181090
Chlorobenzene	ND	1.0	6/29/94	4181090
Dibromochloromethane	ND	1.0	6/29/94	4181090
Chloroethane	ND	1.0	6/29/94	4181090
2-Chloroethyl vinyl ether	ND	1.0	6/29/94	4181090
Chloroform	ND	1.0	6/29/94	4181090
Chloromethane	ND	1.0	6/29/94	4181090
1,2-Dichlorobenzene	ND	1.0	6/29/94	4181090
1,3-Dichlorobenzene	ND	1.0	6/29/94	4181090
1,4-Dichlorobenzene	ND	1.0	6/29/94	4181090
Dichlorodifluoromethane	ND	1.0	6/29/94	4181090
1,1-Dichloroethane	ND	1.0	6/29/94	4181090
1,2-Dichloroethane	ND	1.0	6/29/94	4181090
1,1-Dichloroethene	ND	1.0	6/29/94	4181090
cis-1,2-Dichloroethene	ND	1.0	6/29/94	4181090
trans-1,2-Dichloroethene	ND	1.0	6/29/94	4181090
1,2-Dichloropropane	ND	1.0	6/29/94	4181090
cis-1,3-Dichloropropene	ND	1.0	6/29/94	4181090
trans-1,3-Dichloropropene	ND	1.0	6/29/94	4181090
Ethylbenzene	ND	1.0	6/29/94	4181090
Trichlorofluoromethane	ND	1.0	6/29/94	4181090
<u>SURROGATE RECOVERY</u>	<u>3</u>	<u>ACCEPTABLE LIMITS</u>		
Bromochloromethane	93	(78 - 122)		
Trifluorotoluene	99	(73 - 131)		

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4G010000-046

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> <u>(ug/L)</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylene dibromide	ND	0.020	5/30/94	4182046

SURROGATE RECOVERY
Bromoform

%
95

ACCEPTABLE LIMITS
(41 - 152)

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4F210008

METALS

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
		BATCH: 4174003			
Lead	ND	5.0	ug/L	MCAWW 239.2	6/23/94
		BATCH: 4174009			
Iron	ND	50.0	ug/L	MCAWW 200.7	6/23- 6/24/94
Manganese	ND	10.0	ug/L	MCAWW 200.7	6/23- 6/24/94
Lead	ND	5.0	ug/L	MCAWW 239.2	6/23/94

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



LAB #: B4F210008

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Carbon, Total Organic	ND	50.0	mg/kg	6/28/94	4179089
Petroleum Hydrocarbons, Total Recoverable	ND	5.0	mg/kg	6/23/94	4172062
Nitrogen, Ammonia	ND	25.0	mg/kg	6/30/94	4181070
Color	ND	5.0	C.U.	6/22/94	4173050
Hardness	ND	5.0	mg/L	6/30/94	4181116
Total Dissolved Solids	ND	5.0	mg/L	6/22- 6/23/94	4174061
Solids, Total Suspended	ND	5.0	mg/L	6/22- 6/23/94	4174064
Solids, Total (TS)	ND	5.0	mg/L	6/22- 6/23/94	4174065
Nitrogen, Total Kjeldahl	ND	0.50	mg/L	7/01/94	4182048
Nitrate-Nitrite	ND	0.050	mg/L	7/06/94	4187089
Phosphorous, Total	ND	0.10	mg/L	7/01/94	4182120
Sulfide	ND	1.0	mg/L	6/23/94	4175068
Biochemical Oxygen Demand - 5 Day	ND	3.0	mg/L	6/22- 6/27/94	4173038
Chloride	ND	1.0	mg/L	7/06/94	4187069
Carbon, Total Organic	ND	1.0	mg/L	6/23/94	4173103
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	6/28/94	4180122
Oil and Grease, Gravimetric	ND	5.0	mg/L	6/30- 7/01/94	4182058
Nitrogen, Ammonia	ND	0.10	mg/L	7/05/94	4186122
Sulfate	ND	5.0	mg/L	6/30/94	4181079
Alkalinity, Total	ND	5.0	mg/L	6/30/94	4181073
Chemical Oxygen Demand	ND	20.0	mg/L	6/22/94	4173121

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4180048
LAB #: B4F290000-048 C

PREPARATION DATE: 5/28/94
DATE ANALYZED: 6/28/94

----- GC Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Methyl tert-butyl ether	97	(70-133)
Benzene	107	(76-124)
Toluene	103	(81-120)
Chlorobenzene	99	(80-117)
Ethylbenzene	103	(89-120)
Nylenes, Total	97	(61-142)
1,3-Dichlorobenzene	88	(61-136)
1,4-Dichlorobenzene	83	(75-121)
1,2-Dichlorobenzene	96	(77-126)



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4181090
LAB #: B4F300000-090 C

PREPARATION DATE: 6/29/94
DATE ANALYZED: 6/29/94

----- GC Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Methyl tert-butyl ether	99	(70-133)
Benzene	107	(76-124)
Toluene	105	(81-120)
Ethylbenzene	103	(89-120)
Nylenes, Total	98	(61-142)
Chlorobenzene	99	(71-113)
1,3-Dichlorobenzene	89	(61-136)
1,4-Dichlorobenzene	84	(75-121)
1,2-Dichlorobenzene	98	(77-126)



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4173064
LAB #: B4F220000-064 C

PREPARATION DATE: 6/22/94
DATE ANALYZED: 6/25/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Naphthalene	69	(22-151)
1-Methylnaphthalene	69	(33-120)
2-Methylnaphthalene	70	(39-113)
Acenaphthylene	73	(17-145)
Acenaphthene	72	(30-150)
Fluorene	75	(24-117)
Phenanthrene	75	(26-126)
Anthracene	85	(20-117)
Fluoranthene	78	(29-118)
Pyrene	72	(34-125)
Benzo (a) anthracene	77	(31-115)
Chrysene	71	(18-140)
Benzo (b) fluoranthene	69	(12-119)
Benzo (k) fluoranthene	66	(23-134)
Benzo (a) pyrene	70	(40-115)
Indeno (1, 2, 3- cd) pyrene	67	(22-95)
Dibenzo (a, h) anthracene	70	(10-93)
Benzo (ghi) perylene	70	(10-103)



ENSECO-WADSWORTH/
Laboratories

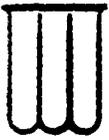
CHECK SAMPLE REPORT

LAB #: B4F210008

*** DISSOLVED METALS ***

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
Lead	BATCH:4173037 104	(70-126)	6/22/94



ENSECO-WADSWORTH/
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4180048
LAB #: B4F210008-009 S
MATRIX: WATER

WO #: 04630
PREPARATION DATE: 6/29/94
DATE ANALYZED: 6/29/94

----- GC Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Methyl tert-butyl ether	88	89	(75-108)	1.6	(0-16)
Benzene	85	57	(70-117)	39	(0-15)
Toluene	86	86	(70-117)	11	(0-16)
Ethylbenzene	86	80	(84-106)	4.0	(0-10)
Xylenes, Total	80	79	(84-108)	1.8	(0-21)
Dichlorodifluoromethane	80	76	(40-160)	17	(0-20)
Chloromethane	76	70	(67-134)	7.8	(0-33)
Vinyl chloride	76	69	(44-176)	10	(0-22)
Bromomethane	75	79	(37-148)	5.0	(0-36)
Chloroethane	80	67	(67-117)	17	(0-25)
Trichlorofluoromethane	61	55	(65-125)	9.4	(0-16)
1,1-Dichloroethene	70	63	(45-137)	9.8	(0-30)
Methylene chloride	93	77	(83-135)	19	(0-25)
trans-1,2-Dichloroethene	95	91	(77-108)	3.6	(0-15)
1,1-Dichloroethane	80	74	(63-125)	7.9	(0-15)
cis-1,2-Dichloroethene	76	66	(70-130)	14	(0-20)
Chloroform	84	78	(66-125)	6.9	(0-17)
1,1,1-Trichloroethane	69	73	(83-119)	5.9	(0-17)
Carbon tetrachloride	86	85	(62-111)	1.2	(0-24)
1,2-Dichloroethane	86	82	(70-125)	4.4	(0-16)
Trichloroethene	80	76	(64-121)	4.5	(0-28)
1,2-Dichloropropane	91	83	(60-111)	8.8	(0-25)
Bromodichloromethane	86	79	(65-127)	8.5	(0-31)
Dibromomethane	86	88	(86-143)	2.3	(0-28)
2-Chloroethyl vinyl ether	0	0	(54-127)	0	(0-36)
cis-1,3-Dichloropropene	80	79	(28-125)	1.3	(0-26)
trans-1,3-Dichloropropene	91	88	(58-125)	3.3	(0-26)
1,1,2-Trichloroethane	87	84	(68-119)	3.8	(0-25)
Tetrachloroethene	91	84	(65-125)	7.4	(0-22)
Dibromochloromethane	97	94	(69-133)	3.6	(0-31)
1-Chlorohexane	88	96	(75-119)	8.7	(0-15)
1,1,1,2-Tetrachloroethane	99	105	(72-116)	5.8	(0-28)
Bromoform	73	71	(77-125)	2.4	(0-28)
Chlorobenzene	86	84	(58-133)	2.5	(0-24)
1,1,2,2-Tetrachloroethane	95	94	(56-125)	0.92	(0-24)
1,2,3-Trichloropropane	99	113	(84-119)	13	(0-18)
Bromobenzene	75	84	(82-106)	12	(0-11)
1,3-Dichlorobenzene	74	74	(84-115)	0.75	(0-15)
1,4-Dichlorobenzene	80	79	(85-119)	1.2	(0-17)



ENSECO-WADSWORTH/
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4173064
LAB #: B4F210008-009 S
MATRIX: WATER

WO #: 04630
PREPARATION DATE: 6/22/94
DATE ANALYZED: 6/27/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Naphthalene	66	66	(25-97)	0.14	(0-23)
1-Methylnaphthalene	65	62	(48-101)	4.9	(0-24)
2-Methylnaphthalene	68	67	(43-82)	1.8	(0-15)
Acenaphthylene	61	56	(57-104)	5.2	(0-19)
Acenaphthene	61	53	(57-104)	15	(0-24)
Fluorene	62	58	(34-118)	6.2	(0-28)
Phenanthrene	64	58	(36-118)	9.3	(0-27)
Anthracene	69	61	(39-124)	13	(0-28)
Fluoranthene	53	47	(60-120)	12	(0-30)
Pyrene	56	49	(53-148)	14	(0-30)
Benzo (a) anthracene	54	46	(36-128)	17	(0-31)
Chrysene	51	44	(48-118)	15	(0-36)
Benzo (b) fluoranthene	58	47	(43-108)	19	(0-22)
Benzo (k) fluoranthene	50	45	(28-126)	9.4	(0-33)
Benzo (a) pyrene	56	48	(35-117)	14	(0-27)
Indeno (1, 2, 3-cd) pyrene	58	49	(33-194)	17	(0-41)
Dibenzo (a, h) anthracene	57	48	(32-180)	16	(0-37)
Benzo (ghi) perylene	57	49	(29-232)	16	(0-51)

Calculations are performed before rounding to avoid round-off errors in calculated results



ENSECO-WADSWORTH/
Laboratories

MATRIX SPIKE REPORT

LAB #: B4F210008-010

*** DISSOLVED METALS ***

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
	BATCH:4173037 MATRIX: WATER					
Lead	105	106	(76-124)	0.23	(0-24)	6/22- 6/23/94

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results



BATCH:4174009

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
Arsenic	0	0		0	10	6/23/94
Chromium	96	96		0.31	20	6/23- 6/24/94
Copper	99	98		1.0	20	6/23- 6/24/94
Manganese	94	94		0.11	20	6/23- 6/24/94
Lead						6/23/94

DIL

DIL Diluted out

UNSECO-WADSWORTH/ALERT LABORATORY SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB-ES Project Name/Number: 7587.31

Samples Received By: Earl A. Ecker Date Received: 6/21/94
(Signature)

Sample Evaluation Form By: Earl A. Ecker LAB No: 34F210008
(Signature)

Type of shipping container samples received in? WAL Cooler
Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

	YES	NO
1. Were custody seals on shipping container(s) intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Were custody papers properly included with samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Were custody papers properly filled out (ink, signed, match labels)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Did all bottles arrive in good condition (unbroken)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Were correct bottles used for the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Were proper sample preservation techniques indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Were samples received within adequate holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Were samples accepted into the laboratory? (If no see comments)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cooler # 481522 Temp 8 °C Cooler # 72588 Temp 8 °C
Cooler # 48211 Temp 8 °C Cooler # 486 Temp 8 °C

Comments: VOA air bubble 01, 2, 02

01, - 01-01; 02-01, 03-02, 04-01, 05-01, 06-01, 07-03, EB-01
01-03, 02-01, 02-02. BOD is not written on COC for MW-4.
There isn't a filtered Pb bottle for MW3, 4 & 9. MW-5 has 2 filtered Pb bottles, with one being the only pl. liter of the project.



**ADSWORTH/ALEXI
BORATORIES**
Sampling, testing, mobile labs

5910 Breckenridge Pkwy.
Suite H
Tampa, FL 33610

(813) 621-0784
Fax (813) 623-6021

Record # **38**

Client:		Project Name / Location			No. of CONTAINERS	Parameter										Remarks
Sampler(s)		Project #:				VOC-COY/CO2	PAH-CO2S	METALS-Pb	TRPH-412.1	EDB-	Tox Sulphide	TRPH-TM, POC	TRPH-NI, NI, NI, NI, NI	TRPH-CIN, NI, NI, NI, NI	TRPH-TM, Hardness	
Item #	Date	Time	MATRIX	Sample Location												
1	6/24	11:15	Water	...	2											
2	6/24	11:15	Soil	...	2											
3	6/24	11:15	Soil	...	5											
4																
5																
6																
7																
8																
9																
10																
11																

93 + 9 = 102 bottles

Total Containers **9** Number of Coolers in Shipment Bailers

Report To:	Transfer Number	Item Number(s)	Relinquished By / Company	Accepted By / Company	Date	Time
Additional Comments:	1		Kelly Murray	FedEx	6/24/09	11:00
	2				6/24/09	11:00
	3					
	4					
	5					
	6					

Original Accompanies Shipment



ENSECO-WADSWORTH/
Division of Corning Lab Services, Inc.

Laboratories

8910 Breckenridge Parkway, Suite H 813-621-0784
Tampa, FL 33610 FAX 813-623-6021

ANALYTICAL REPORT

PROJECT NO. 7587.31

NAVSTA MAYPORT BEQ

KAREN HARTNETT

ABB ENVIRONMENTAL SERVICES

ENSECO-WADSWORTH/ALERT LABORATORIES
Certification Numbers: E84059, HRS84297
FDEP CompQAP: 370270G

Chris Amstutz
Project Manager

July 5, 1994



ENSECO-WADSWORTH/
Laboratories

EXECUTIVE SUMMARY - Detection Highlights

B4F220054

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>
MPT-1586-MW-08D				
Bromodichloromethane	1.9	1.0	ug/L	USEPA 601/2
Chloroform	6.9	1.0	ug/L	USEPA 601/2
MPT-1586-MW-07				
Benzene	1.3	1.0	ug/L	USEPA 601/2
Lead	2.6	5.0	ug/L	MCAWW 239.2
MPT-1586-MW-DUP1				
Acenaphthene	5.2	5.0	ug/L	USEPA 625
Fluorene	6.1	5.0	ug/L	USEPA 625
2-Methylnaphthalene	8.5	5.0	ug/L	USEPA 625
Phenanthrene	6.6	5.0	ug/L	USEPA 625
1-Methylnaphthalene	46	5.0	ug/L	USEPA 625
Benzene	45	1.0	ug/L	USEPA 601/2
Xylenes, Total	6.0	1.0	ug/L	USEPA 601/2
Lead	14.0	5.0	ug/L	MCAWW 239.2
Petroleum Hydrocarbons Total Recoverable	1.4	1.0	mg/L	MCAWW 418.1



ENSECO-WADSWORTH/
Laboratories

SAMPLE SUMMARY

The analytical results of the samples listed below are presented on the following pages.

<u>WO #</u>	<u>LABORATORY ID</u>	<u>SAMPLE IDENTIFICATION</u>
05310	B4F220054-001	MPT-1586-MW-08D
05311	B4F220054-002	MPT-1586-MW-07
05312	B4F220054-003	MPT-1586-MW-07 FILTERED
05313	B4F220054-004	MPT-1586-MW-DUP1
05314	B4F220054-005	MPT-1586-MW-DUP1 FILTERED
05315	B4F220054-006	MPT-1586-MW-MW03 FILTERED
05316	B4F220054-007	MPT-1586-MW-MW04 FILTERED



**ENSECO-WADSWORTH/
Laboratories**

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-08D

WO #: 05310103
LAB #: B4F220054-001
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- GC Volatiles -----					
2 OF 2					
<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Trichlorofluoromethane	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Methylene chloride	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Tetrachloroethene	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Toluene	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
1,1,1-Trichloroethane	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
1,1,2-Trichloroethane	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Trichloroethene	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Vinyl chloride	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Xylenes, Total	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090
Methyl tert-butyl ether	ND	1.0	USEPA 601/2	06/29-06/30/94	4181090

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	91	(78 - 122)
Trifluorotoluene	98	(73 - 131)

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-08D

WO #: 05310102
LAB #: B4F220054-001
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

GC/MS Semi-Volatiles

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Acenaphthylene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Anthracene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Benzo (a) anthracene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Benzo (b) fluoranthene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Benzo (k) fluoranthene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Benzo (ghi) perylene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Benzo (a) pyrene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Chrysene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Dibenz (a, h) anthracene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Fluoranthene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Fluorene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Indeno (1, 2, 3 - cd) pyrene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
2-Methylnaphthalene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Naphthalene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Phenanthrene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
Pyrene	ND	5.0	USEPA 625	06/23-06/27/94	4174050
1-Methylnaphthalene	ND	5.0	USEPA 625	06/23-06/27/94	4174050

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	48	(22 - 135)
2-Fluorobiphenyl	45	(34 - 140)
Terphenyl-d14	34	(10 - 132)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-08D

WO #: 05310
LAB #: B4F220054-001
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons Total Recoverable	ND	1.0	mg/L	MCAWW 418.1	6/28/94	4180122

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/
Laboratories**

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-07

WO #: 05311103
LAB #: B4F220054-002
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- GC Volatiles -----					
1 OF 2					
<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Trichlorofluoromethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Methylene chloride	ND	1.0	USEPA 601/2	06/30/94	4181090
1,1,2,2-Tetrachloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Tetrachloroethene	ND	1.0	USEPA 601/2	06/30/94	4181090
Toluene	ND	1.0	USEPA 601/2	06/30/94	4181090
1,1,1-Trichloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
1,1,2-Trichloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Trichloroethene	ND	1.0	USEPA 601/2	06/30/94	4181090
Vinyl chloride	ND	1.0	USEPA 601/2	06/30/94	4181090
Xylenes, Total	ND	1.0	USEPA 601/2	06/30/94	4181090
Methyl tert-butyl ether	ND	1.0	USEPA 601/2	06/30/94	4181090

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromochloromethane	91	(78 - 122)
Trifluorotoluene	99	(73 - 131)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-07

WO #: 05311102
LAB #: B4F220054-002
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

GC/MS Semi-Volatiles

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Acenaphthylene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Anthracene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Benzo (a) anthracene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Benzo (b) fluoranthene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Benzo (k) fluoranthene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Benzo (ghi) perylene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Benzo (a) pyrene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Chrysene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Dibenz (a,h) anthracene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Fluoranthene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Fluorene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Indeno (1,2,3-cd) pyrene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
2-Methylnaphthalene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Naphthalene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Phenanthrene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
Pyrene	ND	5.0	USEPA 625	06/23-06/28/94	4174050
1-Methylnaphthalene	ND	5.0	USEPA 625	06/23-06/28/94	4174050

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	55	(22 - 135)
2-Fluorobiphenyl	48	(34 - 140)
Terphenyl-d14	21	(10 - 132)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-07 FILTERED

WO #: 05312
LAB #: B4F220054-003
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
- - DISSOLVED METALS - -						
Lead	ND	5.0	ug/L	MCAWW 239.2	6/27/94	4178080

NOTE: AS RECEIVED
ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-DUP1

WO #: 05313103
LAB #: B4F220054-004
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

GC Volatiles

1 OF 2

PARAMETER	RESULT (ug/L)	REPORTING LIMIT	METHOD	EXTRACTION- ANALYSIS DATE	QC BATCH
Benzene	45	1.0	USEPA 601/2	06/30/94	4181090
Bromodichloromethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Bromoform	ND	1.0	USEPA 601/2	06/30/94	4181090
Bromomethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Carbon tetrachloride	ND	1.0	USEPA 601/2	06/30/94	4181090
Chlorobenzene	ND	1.0	USEPA 601/2	06/30/94	4181090
Dibromochloromethane	ND	1.0	USEPA 601/2	06/30/94	4181090
Chloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
2-Chloroethyl vinyl ether	ND	1.0	USEPA 601/2	06/30/94	4181090
Chloroform	ND	1.0	USEPA 601/2	06/30/94	4181090
Chloromethane	ND	1.0	USEPA 601/2	06/30/94	4181090
1,2-Dichlorobenzene	ND	1.0	USEPA 601/2	06/30/94	4181090
1,3-Dichlorobenzene	ND	1.0	USEPA 601/2	06/30/94	4181090
1,4-Dichlorobenzene	ND	1.0	USEPA 601/2	06/30/94	4181090
Dichlorodifluoromethane	ND	1.0	USEPA 601/2	06/30/94	4181090
1,1-Dichloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
1,2-Dichloroethane	ND	1.0	USEPA 601/2	06/30/94	4181090
1,1-Dichloroethene	ND	1.0	USEPA 601/2	06/30/94	4181090
cis-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/30/94	4181090
trans-1,2-Dichloroethene	ND	1.0	USEPA 601/2	06/30/94	4181090
1,2-Dichloropropane	ND	1.0	USEPA 601/2	06/30/94	4181090
cis-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/30/94	4181090
trans-1,3-Dichloropropene	ND	1.0	USEPA 601/2	06/30/94	4181090
Ethylbenzene	ND	1.0	USEPA 601/2	06/30/94	4181090
<u>SURROGATE RECOVERY</u>		<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Bromochloromethane	92		(78 - 122)		
Trifluorotoluene	99		(73 - 131)		

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-DUP1

WO #: 05313104
LAB #: B4F220054-004
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> (ug/L)	<u>REPORTING</u> <u>LIMIT</u>	<u>METHOD</u>	<u>EXTRACTION-</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Ethylene dibromide	ND	0.020	FL-HRS 601-M	06/29/94	4180022

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Bromoform	25*	(41 - 152)

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT

* SURROGATE(S) OUTSIDE ACCEPTANCE CRITERIA DUE TO DEMONSTRATED MATRIX EFFECT.



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-DUP1

WO #: 05313
LAB #: B4F220054-004
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Lead	14.0	5.0	ug/L	MCAWW 239.2	6/23/94	4174003

NOTE: AS RECEIVED



LAB #: B4F230000-050

GC/MS Semi-Volatiles

<u>PARAMETER</u>	<u>RESULT</u> <u>(ug/L)</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Acenaphthene	ND	5.0	6/23- 6/27/94	4174050
Acenaphthylene	ND	5.0	6/23- 6/27/94	4174050
Anthracene	ND	5.0	6/23- 6/27/94	4174050
Benzo (a) anthracene	ND	5.0	6/23- 6/27/94	4174050
Benzo (b) fluoranthene	ND	5.0	6/23- 6/27/94	4174050
Benzo (k) fluoranthene	ND	5.0	6/23- 6/27/94	4174050
Benzo (ghi) perylene	ND	5.0	6/23- 6/27/94	4174050
Benzo (a) pyrene	ND	5.0	6/23- 6/27/94	4174050
Chrysene	ND	5.0	6/23- 6/27/94	4174050
Dibenz (a, h) anthracene	ND	5.0	6/23- 6/27/94	4174050
Fluoranthene	ND	5.0	6/23- 6/27/94	4174050
Fluorene	ND	5.0	6/23- 6/27/94	4174050
Indeno (1, 2, 3-cd) pyrene	ND	5.0	6/23- 6/27/94	4174050
2-Methylnaphthalene	ND	5.0	6/23- 6/27/94	4174050
Naphthalene	ND	5.0	6/23- 6/27/94	4174050
Phenanthrene	ND	5.0	6/23- 6/27/94	4174050
Pyrene	ND	5.0	6/23- 6/27/94	4174050
1-Methylnaphthalene	ND	5.0	6/23- 6/27/94	4174050

<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>
Nitrobenzene-d5	55	(22 - 135)
2-Fluorobiphenyl	50	(34 - 140)
Terphenyl-d14	65	(10 - 132)

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4F290000-122

----- INORGANIC ANALYTICAL REPORT -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>QC BATCH</u>
Petroleum Hydrocarbons	ND	1.0	mg/L	6/28/94	4180122

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/
Laboratories

INTRA-LAB BLANK REPORT

LAB #: B4F220054

METALS

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION - ANALYSIS DATE</u>
Lead	ND	BATCH: 4174003 5.0	ug/L	MCAWW 239.2	6/23/94

NOTE:

ND NOT DETECTED AT THE STATED REPORTING LIMIT



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4181090
LAB #: B4F300000-090

PREPARATION DATE: 6/29/94
DATE ANALYZED: 6/29/94

----- GC Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Methyl tert-butyl ether	99	(70-133)
Benzene	107	(76-124)
Toluene	105	(81-120)
Ethylbenzene	103	(89-120)
Xylenes, Total	98	(61-142)
Chlorobenzene	99	(71-113)
1,3-Dichlorobenzene	99	(61-136)
1,4-Dichlorobenzene	84	(75-121)
1,2-Dichlorobenzene	98	(77-126)



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

QC BATCH: 4174050
LAB #: B4F230000-050 C

PREPARATION DATE: 6/23/94
DATE ANALYZED: 6/27/94

----- GC/MS Semi-Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS
Naphthalene	57	(22-151)
1-Methylnaphthalene	55	(33-120)
2-Methylnaphthalene	55	(39-113)
Acenaphthylene	59	(17-145)
Acenaphthene	58	(30-150)
Fluorene	64	(24-117)
Phenanthrene	60	(26-126)
Anthracene	67	(20-117)
Fluoranthene	53	(29-118)
Pyrene	61	(34-125)
Benzo (a) anthracene	57	(31-115)
Chrysene	55	(18-140)
Benzo (b) fluoranthene	58	(12-119)
Benzo (k) fluoranthene	57	(23-134)
Benzo (a) pyrene	59	(40-115)
Indeno (1, 2, 3 -cd) pyrene	60	(22-95)
Dibenzo (a, h) anthracene	59	(10-93)
Benzo (ghi) perylene	58	(10-103)



ENSECO-WADSWORTH/
Laboratories

ABB ENVIRONMENTAL SERVICES

MPT-1586-MW-MW03 FILTERED

WO #: 05315
LAB #: B4F220054-006
MATRIX: WATER

DATE SAMPLED: 6/20/94
DATE RECEIVED: 6/22/94

----- REQUESTED METALS -----

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNIT</u>	<u>METHOD</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
- - DISSOLVED METALS - -						
Lead	ND	5.0	ug/L	MCAWW 239.2	6/27/94	4178080

NOTE: AS RECEIVED

ND NOT DETECTED AT THE STATED REPORTING LIMIT



**ENSECO-WADSWORTH/
Laboratories**

QUALITY CONTROL SECTION

- Quality Control Summary
- Laboratory Blanks
- Laboratory Control Sample
- Matrix Spike/Matrix Spike Duplicate Results
- Sample Custody Documentation



LAB #: B4F300000-090

----- GC Volatiles -----

<u>PARAMETER</u>	<u>RESULT</u> <u>(ug/L)</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>PREPARATION -</u> <u>ANALYSIS DATE</u>	<u>QC</u> <u>BATCH</u>
Benzene	ND	1.0	6/29/94	4181090
Bromodichloromethane	ND	1.0	6/29/94	4181090
Bromoform	ND	1.0	6/29/94	4181090
Bromomethane	ND	1.0	6/29/94	4181090
Carbon tetrachloride	ND	1.0	6/29/94	4181090
Chlorobenzene	ND	1.0	6/29/94	4181090
Dibromochloromethane	ND	1.0	6/29/94	4181090
Chloroethane	ND	1.0	6/29/94	4181090
2-Chloroethyl vinyl ether	ND	1.0	6/29/94	4181090
Chloroform	ND	1.0	6/29/94	4181090
Chloromethane	ND	1.0	6/29/94	4181090
1,2-Dichlorobenzene	ND	1.0	6/29/94	4181090
1,3-Dichlorobenzene	ND	1.0	6/29/94	4181090
1,4-Dichlorobenzene	ND	1.0	6/29/94	4181090
Dichlorodifluoromethane	ND	1.0	6/29/94	4181090
1,1-Dichloroethane	ND	1.0	6/29/94	4181090
1,2-Dichloroethane	ND	1.0	6/29/94	4181090
1,1-Dichloroethene	ND	1.0	6/29/94	4181090
cis-1,2-Dichloroethene	ND	1.0	6/29/94	4181090
trans-1,2-Dichloroethene	ND	1.0	6/29/94	4181090
1,2-Dichloropropane	ND	1.0	6/29/94	4181090
cis-1,3-Dichloropropene	ND	1.0	6/29/94	4181090
trans-1,3-Dichloropropene	ND	1.0	6/29/94	4181090
Ethylbenzene	ND	1.0	6/29/94	4181090
Trichlorofluoromethane	ND	1.0	6/29/94	4181090
<u>SURROGATE RECOVERY</u>	<u>%</u>	<u>ACCEPTABLE LIMITS</u>		
Bromochloromethane	93	(78 - 122)		
Trifluorotoluene	99	(73 - 131)		

NOTE:

ND (NONE DETECTED)



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

LAB #: B4F220054

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	Q/C LIMITS	PREPARATION - ANALYSIS DATE
Lead	BATCH: 4174003 104	(70-126)	6/23/94



ENSECO-WADSWORTH/
Laboratories

CHECK SAMPLE REPORT

LAB #: B4F220054

----- INORGANIC ANALYTICAL REPORT -----

<u>COMPOUND</u>	<u>SPIKE PERCENT RECOVERY</u>	<u>LIMITS</u>	<u>PREPARATION - ANALYSIS DATE</u>	<u>Q/C BATCH</u>
Petroleum Hydrocarbons Total Recoverable	97	(69-125)	6/28/94	4180122



ENSECO-WADSWORTH/
Laboratories

MATRIX SPIKE REPORT

QC BATCH: 4180022
LAB #: B4F220054-002 S
MATRIX: WATER

WO #: 05311
PREPARATION DATE: 6/29/94
DATE ANALYZED: 6/29/94

----- GC Volatiles -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMIT
Ethylene dibromide	53	60	(81-135)	13	(0-25)

Calculations are performed before rounding to avoid round-off errors in calculated results



ENSECO-WADSWORTH/
Laboratories

MATRIX SPIKE REPORT

LAB #: B4F220054-002

----- METALS -----

COMPOUND	SPIKE PERCENT RECOVERY	SPIKE/DUP PERCENT RECOVERY	Q/C LIMITS	RPD	RPD LIMITS	PREPARATION - ANALYSIS DATE
	BATCH: 4174003 MATRIX: WATER					
Lead	98	99	(76-124)	0.50	(0-24)	6/23/94

NOTE:

Calculations are performed before rounding to avoid round-off errors in calculated results

ENSECO-WADSWORTH/ALERT LABORATORIES SAMPLE SHIPPER EVALUATION AND RECEIPT FORM

Client: ABB-ES Project Name/Number: 7587.31 Mayport NAS.

Samples Received By: [Signature] Date Received: 6/22/94
(Signature)

Sample Evaluation Form By: [Signature] LAB No: B4F220054
(Signature)

Type of shipping container samples received in? WAL Cooler
 Client Cooler WAL Shipper Box Other

Any "NO" responses or discrepancies should be explained in comments section.

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 1. Were custody seals on shipping container(s) intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Were custody papers properly included with samples? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Were custody papers properly filled out (ink, signed, match labels)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Did all bottles arrive in good condition (unbroken)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Were all bottle labels complete (Sample No., date, signed, analysis preservatives)? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Were correct bottles used for the tests indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Were proper sample preservation techniques indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. Were samples received within adequate holding time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. Were all VOA bottles checked for the presence of air bubbles? (If air bubbles were found indicate in comment section) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Were samples in direct contact with wet ice? (NOTE TEMPERATURE BELOW) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Were samples accepted into the laboratory? (If no see comments) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler # 72001 Temp 3⁰ °C Cooler # _____ Temp _____ °C
 Cooler # _____ Temp _____ °C Cooler # _____ Temp _____ °C

Comments: _____



ENSECO-WADSWORTH/
 Laboratories QUALITY ASSURANCE / QUALITY CONTROL
 PROGRAM SUMMARY
 (cont'd)

At that time all associated samples must be re-analyzed. A minimum of five percent (5%) of all laboratory analyses are laboratory analytical method check samples.

Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Recovery Evaluations

Known concentrations of designated matrix spikes (actual analytical method compounds) are added to two of three separate aliquots of a sequentially predetermined sample prior to extraction and analysis. Percent recovery determinations are calculated from both of the spiked samples by comparison to the actual values generated from the unspiked sample. These percent recovery determinations indicate the accuracy of the analysis at recovering actual analytical method compounds from the matrix. Relative percent difference determinations calculated from a comparison of the MS/MSD recoveries demonstrate the precision of the analytical method. Actual percent recovery and relative percent difference data is displayed alongside their respective acceptable analytical method performance limits in the QA/QC section of the report. The MS/MSD are considered in control when the precision is within established control limits and the associated check sample has been found to be acceptable. A minimum of ten percent (10%) of all analyses are MS/MSD quality control samples.

*****EXAMPLE*****

COMPOUND	SAMPLE CONC.	MS %REC	MSD %REC	RPD	QC LIMITS	
					RPD	RECOVERY
4,4'-DDT	0	95	112	16	22	66-119
Benzene	10	86	93	8	20	39-150
(cmpd. name)	sample result	1st% recov.	2nd% recov.	Rel.% diff.	accep. method perform range	

Analytical Result Qualifiers

The following qualifiers, as defined below, may be appended to analytical results in order to allow proper interpretation of the results presented:

J - indicates an estimated concentration (typically used when a dilution, matrix interference or instrumental limitation prevents accurate quantitation of a particular analyte).

B - indicates the presence of a particular analyte in the laboratory blank analyzed concurrently with the samples. Results must be interpreted accordingly.

DIL - indicates that because of matrix interferences and/or high analyte concentrations, it was necessary to dilute the sample to a point where the surrogate or spike concentrations fell below a quantifiable amount and could not be reported.