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FINAL SITE ASSESSMENT REPORT ADDENDUM FOR UNDERGROUND STORAGE TANK  
SITE 1343 NS MAYPORT FL  
2/1/2002  
ELLIS ENVIRONMENTAL GROUP, LC

**FINAL**

**Site Assessment Report  
Addendum**

**for**

**Underground Storage Tank  
Site 1343**

**at**

**U.S. Naval Station  
Mayport, FL**

**Contract No. N62467-01-C-8826**



*Prepared for*  
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**February 2002**

**Underground Storage Tank Site 1343  
U.S. Naval Station, Mayport, FL**

**FINAL**  
**Site Assessment Report Addendum**

**Independent Technical Review (ITR)**  
**Certification**

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The ITR signature indicates that he or she has reviewed and found the final version of this plan to be complete and correct to the best of his or her knowledge.

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## Acronyms & Abbreviations

BTEX	benzene, toluene, ethylbenzene, xylenes
CAR	Contamination Assessment Report
CARA	CAR Addendum
DTW	depth to water
ELEV	elevation
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL	Florida
FP	free phase liquid
ft-bgs	feet below ground surface
ft-bls	feet below land surface
HNO <sub>3</sub>	nitric acid
LNAPL	light non-aqueous phase liquid
MCL	maximum contaminant level
mg/l	milligrams per liter
msl	mean sea level
MTBE	methyl tert-butyl ether
NA perimeter	natural attenuation perimeter guidance concentration
NA source	natural attenuation source guidance concentration
NAVSTA	U.S. Naval Station
NGVD	National Geodetic Vertical Datum
NI	not installed
NM	not measured
NO	no free phase liquid observed
NS	not sampled
OVA-FID	organic vapor analyzer-flame ionization detector
PAHs	polynuclear aromatic hydrocarbons
POTW	publicly owned treatment works
PPE	personal protected equipment
ppm	parts per million
PRO	petroleum residual organics
QC	quality control
RAP	Remedial Action Plan
SOUTHNAV-FACENCOM	Southern Division Naval Facilities Engineering Command
TOC	top of well casing
TRPH	total recoverable petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
µg/l	micrograms per liter

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## Introduction

Ellis Environmental Group, LC (EEG) has been contracted (Contract No. N62467-01-C-8826) by the Southern Division Naval Facilities Engineering Command (SOUTHNAV-FACENCOM) to provide environmental services at Naval Station Mayport. Harding ESE, Inc. has been subcontracted by EEG to participate in the contract. The environmental services described in this report are for assessment activities at underground storage tank (UST) Site 1343 located at U.S. Naval Station (NAVSTA) Mayport, Florida.

### 1.0 Location and Site Description

The following section provides a brief description of Site 1343. Figure 1 presents the location of Site 1343 at Naval Station Mayport. The subject site is located at the Mayport Naval Station in Mayport, Florida. A 10,000-gallon UST that had contained fuel oil was closed in place in June of 1995.

The UST is located adjacent to Building 1343. A fenced security area to the northeast contains electrical transformers and a replacement above ground fuel tank. Two aboveground storage tanks, situated on a concrete pad, are located immediately north of the site, also within a fenced area. The ground surface at the immediate area of the UST is not covered and is relatively flat with poor surface water drainage. Surface water drainage outside of the area is toward surface drainage ditches to the southeast.

### 2.0 Site History

In June of 1995, the 10,000-gallon UST-1343 was closed in place. An area of stained soil was reported on the northwestern end of the UST at the ground surface. This was the location of the UST fill port. According to a UST closure report prepared by G.B. Robbins, heavily contaminated soils were identified during the excavation to the top of the tank. Soil samples collected at the north and east ends of the fill port at depths of 1 and 2 feet exhibited very strong petroleum odors. A soil sample collected from the east side of the tank at a depth of 3 feet also exhibited very strong petroleum odors. The soils had elevated OVA headspace concentrations. Contaminated soils were not removed and ground water samples were not taken during the abandonment.

Bhate Environmental Associates, Inc. (BEA) conducted a contamination assessment during June and July of 1997. The following is a summary of site conditions based on the results of field and laboratory investigations made during the contamination assessment:

- Soil borings indicated soils beneath the site consist of well-sorted fine sands to silty fine sands with shell fragments extending to boring termination at approximate depths of 14 ft-bls. Construction material was encountered within the upper 5 feet of well MW-3.
- Groundwater was encountered at depths of approximately 4 to 4.5 ft-bls. The direction of groundwater movement is generally to the east as determined from measurements on two different dates.

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- Organic vapor analyzer-flame ionization detector (OVA-FID) headspace concentrations of soil samples collected from each boring at a depth of 1 to 3 feet were less than 50 parts per million (ppm). Stained soils were visible at the northwest end of the UST.
  - Laboratory analyses of soil samples collected from depths of 4.0 to 6.0 ft-bls indicated Florida-PRO concentrations at locations S-1 and S-3 of 28 and 35 ppm, respectively. The concentrations are below the regulatory limit maximum contaminant limit (MCL) of 2,500 ppm. Concentrations were below laboratory detection limits in soil samples collected from S-2 and S-4.
  - Laboratory analyses of groundwater samples from three permanent monitoring wells installed at the site indicated that one well, MW-1, contained detectable polynuclear aromatic hydrocarbon (PAH) constituents. PAH concentrations were below the regulatory limits. Benzene, toluene, ethylbenzene, xylenes (BTEX) was not detected.
  - Lead concentrations were above the regulatory limit (Chapter 62-550 Florida Administrative Code) at well 1343-MW-1. The elevated concentrations may be a result of the sampling method employed.
  - Free petroleum product was not measurable on June 13, 1997, during groundwater sample collection. Approximately 3/8 inch of product was measured in 1343-MW-1 on August 8, 1997.

A CAR dated February 2, 1998, was submitted to the Florida Department of Environmental Protection (FDEP). The FDEP subsequently requested additional sampling activities in a letter dated June 4, 1998.

BEA conducted an additional investigation and prepared a CAR Addendum (CARA) dated June 25, 1999. BEA concluded the following:

- Free product is present at the site.
- Excessively contaminated soil is present at the site. The soil contamination is limited to soils at the northwest end of the UST.
- Recommended the preparation of a Remedial Action Plan (RAP).

FDEP requested an additional Site Assessment Addendum in a letter dated July 20, 1999. FDEP requires the following items be addressed (paraphrased from the letter):

- Groundwater flow direction needs to be determined. The wells are not placed optimally for groundwater flow determination. New wells may be required.
- The extent of free product nor possible groundwater contamination has not been determined. New wells may be required.

- The extent of soil contamination has not been determined. Place the first soil boring in the area south-southeast of S-1 and as close as possible to the fill port. Conduct additional borings to sufficiently characterize the extent of soil contamination.
- Use soil sampling requirements in Chapter 62-770 Florida Administrative Code (FAC).
- Sample the new and existing wells.

### **3.0 Scope and Objectives**

Groundwater flow determination, soil sampling, Geoprobe groundwater sampling, monitoring well installation, and groundwater sampling activities were conducted at Site 1343 to characterize the present site conditions and determine if remediation is warranted.

#### **3.1 Groundwater Flow Direction Determination**

Water level measurements were conducted in accordance with the methodology presented in the Work Plan prepared by EEG entitled “Site Assessment Underground Storage Tank Sites 245, 1343, and 1388, Mayport Naval Station, Mayport, Florida” (EEG, 2001).

During the sampling event, the water levels in each of the Site 1388 monitoring wells were measured at the time they were sampled and the day after the groundwater sampling event to determine groundwater elevations in the morning, afternoon, and evening. At least four hours elapsed between each measurement to help determine if the groundwater elevation is tidally influenced. Mayport inlet tidal information was obtained for the day water levels were taken.

#### **3.2 Soil Sampling**

Soil sampling was conducted to further define the extent of soil contamination. The evaluation of soil contamination in this report is based on visual observations, olfactory indicators, and/or headspace concentrations greater than 10 ppm. Twenty-three hand auger soil samples were collected at 12 locations and headspace analysis was performed in the field on each sample collected (Figure 2).

Soil sampling and headspace analysis procedures were conducted in accordance with the Work Plan prepared by EEG entitled “Site Assessment Underground Storage Tank Sites 245, 1343, and 1388, Mayport Naval Station, Mayport, Florida” (EEG, 2001). Soil sampling procedures are provided in Appendix A.

The hand auger soil-sampling grid was based on three initial locations (SS-1, SS-6, and SS-9) spaced at 10-foot intervals through the tank excavation area. The grid starting point was located in the area south-southeast of boring S-1 previously sampled by BEA (BEA, 1999) and as close as possible to the fill port and extended radially away from S-1 (Figure 2). Subsequent soil sampling locations were at approximately 5-foot intervals away from the three initial locations; some of the spacings were adjusted because of the presence of underground utilities. Because shallow groundwater was encountered at the site (less than 6 feet to water), the soil samples were

collected at approximately 1- to 2- foot intervals to allow the collection of at least two samples from the vadose zone. Because groundwater contamination is suspected (light non-aqueous phase liquid [LNAPL] in MW-1), soil samples were not collected in the capillary fringe zone immediately above the water table, as this zone would potentially have high soil gas concentrations from the groundwater and would lead to invalid soil contamination assumptions for the vadose zone.

Based on the results of the soil sample field screening, three confirmatory soil samples and associated quality control samples were collected and analyzed at an offsite laboratory (ELAB, Inc., of Ormond Beach, Florida) for volatile organic compounds (VOCs) (Method 8021), PAHs (Method 8310), and total recoverable petroleum hydrocarbons (TRPH) Florida petroleum residual organics (FL-PRO) method.

### **3.3 Geoprobe Groundwater Sampling**

Geoprobe groundwater sampling was conducted to further define the extent of groundwater contamination. Twelve groundwater samples were collected with the Geoprobe and one groundwater sample was collected from monitoring well MW-1 for field screening with an onsite mobile gas chromatograph (GC) laboratory. The target analytes were BTEX, Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene. Analytical results from this task were used to characterize the horizontal extent of groundwater contamination and determine the location of three additional monitoring wells (Figure 2).

The initial groundwater screening grid was based on locations at 25-foot intervals (Figure 2). The grid starting point was monitoring well MW-1, where LNAPL has been observed, and extended in radial directions away from MW-1 at 25-foot centers. These locations were adjusted based on known site obstructions (i.e., underground utilities, buildings, tanks, etc.). When groundwater contamination was encountered at a location, the grid was extended radially at 25-foot intervals until no groundwater contamination was observed. Based on the analytical results, three temporary piezometers were installed to collect groundwater samples for laboratory analysis and confirm the field screening results (Figure 2).

### **3.4 Monitoring Well Installation**

Three new monitoring wells were installed at locations determined based from the Geoprobe groundwater field screening and the data from previous investigations. The monitoring wells were installed by utilizing a drill rig equipped to drill with 4-1/2-inch ID hollow stem augers. The wells were installed so that the well screen intercepted the surficial aquifer. Each well was constructed with 2-inch-diameter Schedule 40 PVC with 10 feet of 0.01-inch factory slotted screen. A 20/30-grain sand pack was placed in the annulus around the screen. Because of the shallow depth to groundwater, a 6-inch-thick bentonite seal was placed above the sand pack. The remainder of the annular space was grouted to the land surface. Each monitoring well was completed at the surface by manhole-type flush mount construction. Each newly installed monitoring well was developed after completion.

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### 3.5 Groundwater Sampling

The purging of the monitoring wells, groundwater sampling, and handling of investigation derived waste was conducted in accordance with the methodology presented in the Work Plan prepared by EEG entitled “Site Assessment Underground Storage Tank Sites 245, 1343, and 1388, Mayport Naval Station, Mayport, Florida” (EEG, 2001).

Groundwater samples were collected from monitoring wells MW-1 through MW-7 (Figure 2) and a quality control sample (duplicate) was collected at monitoring well MW-3. Groundwater sampling procedures are provided in Appendix A. Sampling data forms are provided in Appendix B. The samples were analyzed for VOCs by U.S. Environmental Protection Agency (USEPA) Method 8021, PAHs by USEPA Method 8310, and PRO by the FL-PRO Method. USEPA Method 8270 had been proposed for PAHs in the Work Plan for Site 1388 (EEG, 2001); however, USEPA Method 8310 was used to achieve detection limits that are within the State of Florida regulatory criteria. EEG notified SOUTHNAV-FACENCOM of this modification prior to conducting the sampling event. The reporting limits for the USEPA Method 8310 and FL-PRO are equal to or lower than their respective regulatory criteria under Chapter 62-777 FAC and Chapter 62-550.

## 4.0 Results

Following are the results of the water level measurements, and soil and groundwater sampling events that were conducted at Site 1343 in September 2001.

### 4.1 Water Level Measurements

Groundwater level measurements were made on September 6, 2001, and on September 27, 2001 (Table 1). Table 1 also includes historical measurements made by BEA (BEA, 1997 and 1999). Water level measurement data forms are provided in Appendix B. Measurements made on September 6, 2001, included monitoring wells MW-1 through MW-4 (Figure 3), and on September 27, 2001, included MW-1 through MW-7 (Figures 4 through 6). Measurements made on September 27, 2001, were made in the morning, afternoon, and evening approximately 4 hours apart. The purpose of the measurements was to assess whether or not tidal influences affected the groundwater flow direction at Site 1343.

Based on the water level measurements made on September 6, 2001, the groundwater flow direction appears to be in a general north to northeast direction (Figure 3). The measurements made on September 27, 2001, suggest that the overall groundwater flow direction appears to be in a north to northeast direction, but there also appears to be a trough with an eastward flow direction that extends from monitoring well MW-6 to MW-5 (Figures 4 through 6).

Tidal information was obtained (Appendix C) for the St. Johns River entrance gauging station located near the U.S. Naval Station (NAVSTA) Mayport Degaussing Station. The tides for September 27, 2001, were a high tide of 5.04 feet mean sea level (msl) at 0500 hours, a low tide of 1.81 feet msl at 1000 hours, and a high tide of 5.66 ft msl at 1700 hours.

Rainfall data obtained for the Jacksonville area indicates that rainfall amounts of 16.03 inches were recorded for the month of September 2001. The highest amounts of rainfall occurred on September 12, 13, and 14, 2001, with 5.43, 2.34, and 1.9 inches, respectively. Rainfall also occurred approximately 2 days before the field events on September 22, 23, and 24, 2001, (0.47, 1.27, and 0.05 inches, respectively).

During the September 27, 2001, groundwater level measurement event, the groundwater levels at monitoring wells MW-2, MW-3, MW-5, MW-6, and MW-7 increased from approximately 0.14 to 0.21 feet. The water level at monitoring well MW-1 increased from the 0800 to 1230 hours measurement event and decreased from the 1230 to 1630 event. The water level at monitoring well MW-1 decreased from the 0800 to 1230 hours measurement event and increased from the 1230 to 1630 event. The water levels measured at monitoring well MW-4 represent the only location that exhibits a pattern similar to the tidal event for September 27, 2001.

Interpretation of the water level measurements made on September 27, 2001, suggests that the water level beneath Site 1343 is not likely influenced by tidal changes. Therefore, it is more likely that rainfall events will cause fluctuations in the water level that would result in smearing effects (e.g., residual petroleum contamination being exported to and left in the unsaturated zone) and/or a significant change to the groundwater flow direction.

On August 2, 2001, three inches of LNAPL were recovered in a bailer, and a second bailer contained 2 inches. On September 6, 2001, LNAPL (0.02 feet thick) was measured at monitoring well MW-1 (Appendix B). LNAPL was not measured or observed at this well location on September 27, 2001. It is our understanding that NAVSTA Mayport personnel have been using a bailer to remove LNAPL from this well location.

#### **4.2 Soil Sample Screening and Laboratory Analytical Results**

Twenty-four soil samples were collected from 12 locations at Site 1343 (Figure 2). The soil samples were collected from the land surface to a depth of 2 feet and from 2 ft-bls to 4 ft-bls. The soil samples were screened with an OVA to assess the extent of soil contamination in the vadose zone and select three soil samples representing low, medium, and high concentrations of petroleum constituents for laboratory analysis (Table 2).

The highest OVA measurements were obtained from the soil samples collected near the northern side of the former UST (Figures 7 and 8). The samples collected from 2 ft-bls to 4 ft-bls contained the highest OVA measurements (Figure 8). Interpretation of the OVA measurements made using the charcoal filter suggests that methane is likely present at locations SS-4, SS-5, SS-7, SS-10, SS-11, and SS-12.

Soil samples from locations SS-12 at 2 ft-bls to 4 ft-bls, SS-2 at 0 ft-bls to 2 ft-bls, and SS-2 at 2 ft-bls to 4 ft-bls were collected for laboratory analysis to represent the low medium and high concentration samples, respectively. Fluoranthene and PRO were detected in the soil samples (Table 3). Soil sample SS-2 at 0 ft-bls to 2 ft-bls contained the highest concentrations of fluoranthene and PRO. Fluoranthene and PRO were not detected at concentrations that exceed the State of Florida petroleum screening criteria under Chapter 62-777 FAC for residential and industrial exposures, leachability to groundwater, or leachability to freshwater or marine

environments (Table 3). Based on the comparison of the soil sample analytical results to the screening criteria under Chapter 62-777 FAC remediation of soil is not warranted.

### 4.3 Groundwater Analytical Results

Groundwater field screening analytical results for VOCs, PAHs, and petroleum hydrocarbons are provided in Table 4. Groundwater laboratory analytical results for three temporary piezometers, the existing monitoring wells (MW-1 through 4), and the three newly installed monitoring wells (MW-5 through MW-7) are provided in Table 5. Table 5 also includes historical analytical results for PAHs that were detected in groundwater samples collected previously by BEA (BEA, 1997; and 1999). Groundwater samples collected previous to July 30, 2001, had not been analyzed for PRO.

None of the groundwater field screening samples contained VOCs or methyl tert-butyl ether (MTBE). However, the field screening groundwater samples did contain concentrations of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and petroleum hydrocarbons (Figure 9 and Table 4). Naphthalene was detected in the field screening groundwater samples collected from GP-11, GP-12 and monitoring well MW-1. 1-Methylnaphthalene and 2-methylnaphthalene were detected in the field screening groundwater samples from GP-12 and monitoring well MW-1. Petroleum hydrocarbons were detected in the field screening groundwater samples from GP-7, GP-8, GP-11, GP-12, and monitoring well MW-1. The concentrations of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and petroleum hydrocarbons exceed their respective regulatory criteria under Chapter 62-777 FAC for groundwater and the perimeter well locations for natural attenuation (NA) at the location of GP-12. The concentrations of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene exceed their respective regulatory criteria under Chapter 62-777 FAC for groundwater and the perimeter well locations for NA at the location of monitoring well MW-1.

Based on these results, three temporary piezometers were installed at GP-11 (PZ-2), GP-12 (PZ-1), and a hydraulic upgradient location (PZ-3) (Figure 10). Analysis of the groundwater samples collected from the temporary piezometers indicated the presence of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at the locations of PZ-1 and PZ-2 at concentrations that exceed their respective regulatory criteria under Chapter 62-777 FAC for groundwater and the perimeter well locations for NA (Table 5). The groundwater sample collected from PZ-1 also contained concentrations of acenaphthene, benzo(b)fluoranthene, and benzo(a)pyrene, but they were below their respective regulatory criteria under Chapter 62-777 FAC. The groundwater sample collected from PZ-2 also contained concentrations of acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene, but they were below their respective regulatory criteria under Chapter 62-777 FAC.

The groundwater sample collected from GP-3 did not contain detectable concentrations of the PAH compounds detected at GP-11 and GP-12.

Three additional monitoring wells (MW-5, MW-6, and MW-7) were installed at the site based on evaluation of the analytical results from the field screening activities and the temporary piezometers (Figure 11). Monitoring well MW-5 was placed to the west of the abandoned UST at the location of GP-12/PZ-1. Monitoring well MW-6 was placed east of the abandoned UST at the

location of GP-11/PZ-2. Monitoring well MW-7 was placed to be hydraulically downgradient from the abandoned UST at the location of GP-2 (none of the target analytes were detected in the groundwater sample collected from the location of GP-2).

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-1 (Figure 11, Table 5). Previous analytical results from samples collected on June 13, 1997, by BEA (BEA, 1997) indicated the presence of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and acenaphthylene at concentrations below their respective regulatory criteria under Chapter 62-777 FAC.

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-2 (Figure 11, Table 5). Previous analytical results from samples collected on June 13, 1997, by BEA (BEA, 1997) indicated the presence lead at a concentration below its regulatory criteria under Chapter 62-550 FAC.

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-3 (Figure 11, Table 5). Previous analytical results from samples collected on June 13, 1997, by BEA (BEA, 1997) indicated the presence lead at a concentration below its regulatory criteria under Chapter 62-550 FAC.

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-4 (Figure 11, Table 5). BEA had not previously sampled the well.

Lead was the only target analyte detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-5 (Figure 11, Table 5). Lead was detected at a concentration equal to its regulatory criteria under Chapter 62-550 FAC. MW-5 is a newly installed monitoring well that previously had been PZ-2. The groundwater sample collected from PZ-2 on September 6, 2001, contained naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at concentrations above their respective regulatory criteria under Chapter 62-777 FAC.

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-6 (Figure 11, Table 5). MW-6 is a newly installed monitoring well that previously had been PZ-1. The groundwater sample collected from PZ-1 on September 6, 2001, contained naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at concentrations above their respective regulatory criteria under Chapter 62-777 FAC.

None of the target analytes were detected in the groundwater sample collected on September 28, 2001, from monitoring well MW-7 (Figure 11, Table 5). MW-7 is a newly installed monitoring well located hydraulically downgradient from the abandoned UST.

Petroleum hydrocarbons (FL-PRO) were detected in the groundwater samples collected on September 28, 2001, at the locations of MW-1, MW-5, and MW-6. FL-PRO was at concentrations less than its regulatory criteria under Chapter 62-777 FAC.

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## 5.0 Summary

Based on the water level measurements made on September 6, 2001, the groundwater flow direction appears to be in a general north to northeast direction. The measurements made on September 27, 2001, suggest that the overall groundwater flow direction appears to be in a north to northeast direction, but there also appears to be a trough with an eastward flow direction that extends from monitoring well MW-6 to MW-5.

Interpretation of the water level measurements made on September 27, 2001, suggests that the water level beneath Site 1343 is not likely influenced by tidal changes. Therefore, it is more likely that rainfall events will cause fluctuations in the water level that would result in smearing effects (e.g., residual petroleum contamination being exported to and left in the unsaturated zone) and/or a significant change to the groundwater flow direction.

On August 2, 2001, 3 inches of LNAPL were recovered in a bailer and a second bailer contained 2 inches. On September 6, 2001, 0.02 inches of LNAPL was measured at monitoring well MW-1. LNAPL was not measured or observed at this well location when water level measurements were made on September 27, 2001.

The highest OVA measurements were obtained from the soil samples collected near the northern side of the former UST. The samples collected from 2 ft-bls to 4 ft-bls contained the highest OVA measurements. Interpretation of the OVA measurements made using the charcoal filter suggest that methane is also present.

Soil samples were collected for laboratory analysis to represent the low medium and high concentration samples, respectively. Fluoranthene and PRO were detected in the soil samples. Fluoranthene and PRO were not detected at concentrations that exceed the State of Florida petroleum screening criteria under Chapter 62-777 FAC for residential and industrial exposures, leachability to groundwater, or leachability to freshwater or marine environments (Table 3). Based on the comparison of the soil sample analytical results to the screening criteria under Chapter 62-777 FAC remediation of soil is not warranted.

None of the groundwater field screening samples contained VOCs or MTBE. However, the field screening groundwater samples did contain concentrations of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and petroleum hydrocarbons. The concentrations of naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and petroleum hydrocarbons exceed their respective regulatory criteria under Chapter 62-777 FAC for groundwater and the perimeter well locations for natural attenuation (NA) at the location of GP-12. The concentrations of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene exceed their respective regulatory criteria under Chapter 62-777 FAC for groundwater and the perimeter well locations for NA at the location of monitoring well MW-1.

Based on the field screening analysis, three temporary piezometers were installed to confirm the groundwater field screening results. Analysis of the groundwater samples collected from the temporary piezometers indicated the presence of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene at the locations of PZ-1 (formerly GP-12) and PZ-2 (formerly GP-11) at concentrations that exceed their respective regulatory criteria under Chapter 62-777 FAC for

groundwater and the perimeter well locations for NA (Table 5). None of the target analytes were detected in the groundwater sample from PZ-3 located hydraulically upgradient from the abandoned UST.

Based on the field screening analytical results and the analytical results from the temporary piezometers, three additional monitoring wells were installed at the site (MW-5, MW-6 and MW-7 (Figure 11). Analytes detected in the groundwater samples collected on September 28, 2001, consisted of 1-methylnaphthalene, fluoranthene, FL-PRO, and lead. None of the organic analytes were detected at concentrations that exceed their respective regulatory criteria under Chapter 62-777 FAC. Lead was detected at a concentration that was equal to its regulatory criteria under Chapter 62-550 FAC.

Based on the detection of LNAPL at monitoring well MW-1 and the field screening for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene, remediation of groundwater is warranted. However, the field screening results were not confirmed after the installation of the permanent monitoring wells and the groundwater sampling event conducted on September 28, 2001. It should be noted that the temporal variations in concentrations of the PAHs detected at UST Site 1343 are similar to those that have been recently observed at UST Sites 1388 and 245 (EEG & Harding ESE, Inc., 2001a, 2001b, and 2001c).

It is recommended that a remedial action plan should be prepared to recover the LNAPL. Based on the similarities at UST Site 1343 to UST Sites 1388 and 245, it is likely that after the removal of the free-phase liquid that NA monitoring may be appropriate for the site. Also, an interim measure to pump water and LNAPL from monitoring well MW-1 to remove the LNAPL should be considered.

## 6.0 Recommendations

Because the soil sample analytical results did not indicate leachability to groundwater or leachability to freshwater or marine environments, remediation of the soils does not appear to be warranted. Overexcavation of the soil in the vicinity of the abandoned UST may expedite the remediation of groundwater but would be complicated by the presence of underground utilities.

An interim remedial should be implemented to recover the LNAPL discovered at MW-1. Bail down tests have not been conducted to estimate product thickness; therefore, it is assumed that the LNAPL is approximately 7 feet in diameter and may range from 0.02 to 3 inches thick (approximately 0.2 to 33 gallons of LNAPL). Based on the similarities of UST Site 1343 to UST Sites 1388 and 245, it is likely that, after the removal of the LNAPL (Chapter 62-770.300 FAC), natural attenuation monitoring (Chapter 62-770.690 FAC) may be appropriate for the site. Source removal may be implemented without FDEP approval (Chapter 62-770.300[1][b] FAC) using absorbent pads, skimmer pumps, hand or mechanical bailing, or fluid vacuum techniques.

It is recommended that the LNAPL at monitoring well MW-1 be recovered by means of a vacuum tanker truck operated by a licensed waste hauler. A drop tube should be deployed to a depth just above the elevation of the LNAPL. The vacuum exerted by the tanker truck will pull the LNAPL up and into the drop tube. A clear piece of tubing should be connected in-line between the drop tube and tanker truck at the surface of the well to ensure that mostly product is

being recovered from the drop tube. Since product foams under vacuum conditions in tubing, vacuum application on the wells should cease when foaming observed in the clear tubing significantly decreases. Under Chapter 62-770.300(1)(b)(4)(b) FAC, the volume of groundwater recovered is not to exceed two times the volume of LNAPL recovered. The first 1,000 gallons of total fluid recovered is exempt from this requirement.

LNAPL removal by vacuum truck extraction should occur over one to three days until LNAPL thicknesses in the monitoring wells decrease below 0.01 feet. LNAPL and/or groundwater collected by vacuum truck should be transported by the waste hauler to a licensed disposal facility or the NAVSTA Mayport Oily Wastewater Treatment Facility. Aquifer properties have not been measured for well MW-1; however, assuming a recovery rate of 1 gallon per minute for an oil and water emulsion over 12 hours per day for three days, the volume of the water and LNAPL emulsion is estimated to be 2,160 gallons.

Once the LNAPL has been removed to less than 0.01 feet, the condition for natural attenuation under Chapter 62-770.690(1)(a) will be met. Currently, the site appears to meet the other conditions for natural attenuation as contaminated soil is not present (Chapter 62-770.690[1][b] FAC); petroleum-related contaminants do not appear to be migrating beyond the proposed point of compliance well (MW-7) (Chapter 62-770.690[1][c] FAC); the site conditions are suitable for natural attenuation (Chapter 62-770.690[1][d]); and the analytical results suggest that the petroleum-related constituents have decreased over time (Chapter 62-770.690[1][e]).

Natural attenuation monitoring should be implemented at Site 1343 when it is confirmed that the LNAPL in MW-1 is less than 0.01 feet thick. It is recommended that water level measurements and a groundwater sampling event be conducted approximately two to three months after the interim source removal action for the LNAPL to confirm the LNAPL has been removed and provide a baseline sampling event for the proposed monitored natural attenuation program.

Monitoring wells MW-1, MW-2, MW-3, MW-5, MW-6, and MW-7 are proposed for the monitoring program. Monitoring well MW-3 is proposed to be the background monitoring well. Monitoring wells MW-1, MW-5, and MW-6 are proposed to be the source wells. Monitoring wells MW-2 and MW-7 are proposed to be the perimeter wells. Monitoring well MW-7 is proposed to be the hydraulic downgradient point of compliance well.

The six monitoring wells and associated quality control samples should be sampled and analyzed quarterly for PAHs (Method 8310), and TRPH (FL-PRO Method). Water levels should be collected quarterly from monitoring wells MW-1 through MW-7. Following is a summary of groundwater samples to be collected and analyzed for the natural attenuation monitoring program at this site.

**Site 1343 Proposed Natural Attenuation Monitoring Analytical Summary**

Analyte	Groundwater Samples	Duplicate Sample	Total
PAHs	6	1	7
TRPH	6	1	7

Four quarterly sampling reports should be generated and submitted to NAVSTA Mayport for comment(s). The fourth quarter sampling report will be an annual summary report. Groundwater sampling data forms, a figure depicting the groundwater sampling analyses (i.e., plume map), and a figure depicting the groundwater flow direction will be included in each quarterly report. Upon resolution of the Mayport comments, a final quarterly/annual report will be submitted to FDEP.

The monitoring period should be a minimum of one year, unless two consecutive quarterly sampling events indicate that applicable cleanup target levels have been met and the site meets the No Further Action criteria under Chapter 62-770.680 FAC.

## 7.0 References

Bhate Environmental Associates, Inc. (BEA), 1997. Contamination Assessment Report, Tank Site 245, Naval Station Mayport, Mayport, Florida. Prepared for Department of the Navy (DON), Southern Division Naval Facilities Engineering Command (SOUTHNAV-FACENGCOCM), North Charleston, South Carolina.

Bhate Environmental Associates, Inc. (BEA), 1999. Addendum to the Contamination Assessment Report, Tank Site 245, Naval Station Mayport, Mayport, Florida. Prepared for Department of Navy, SOUTHNAV-FACENGCOCM, North Charleston, South Carolina (September).

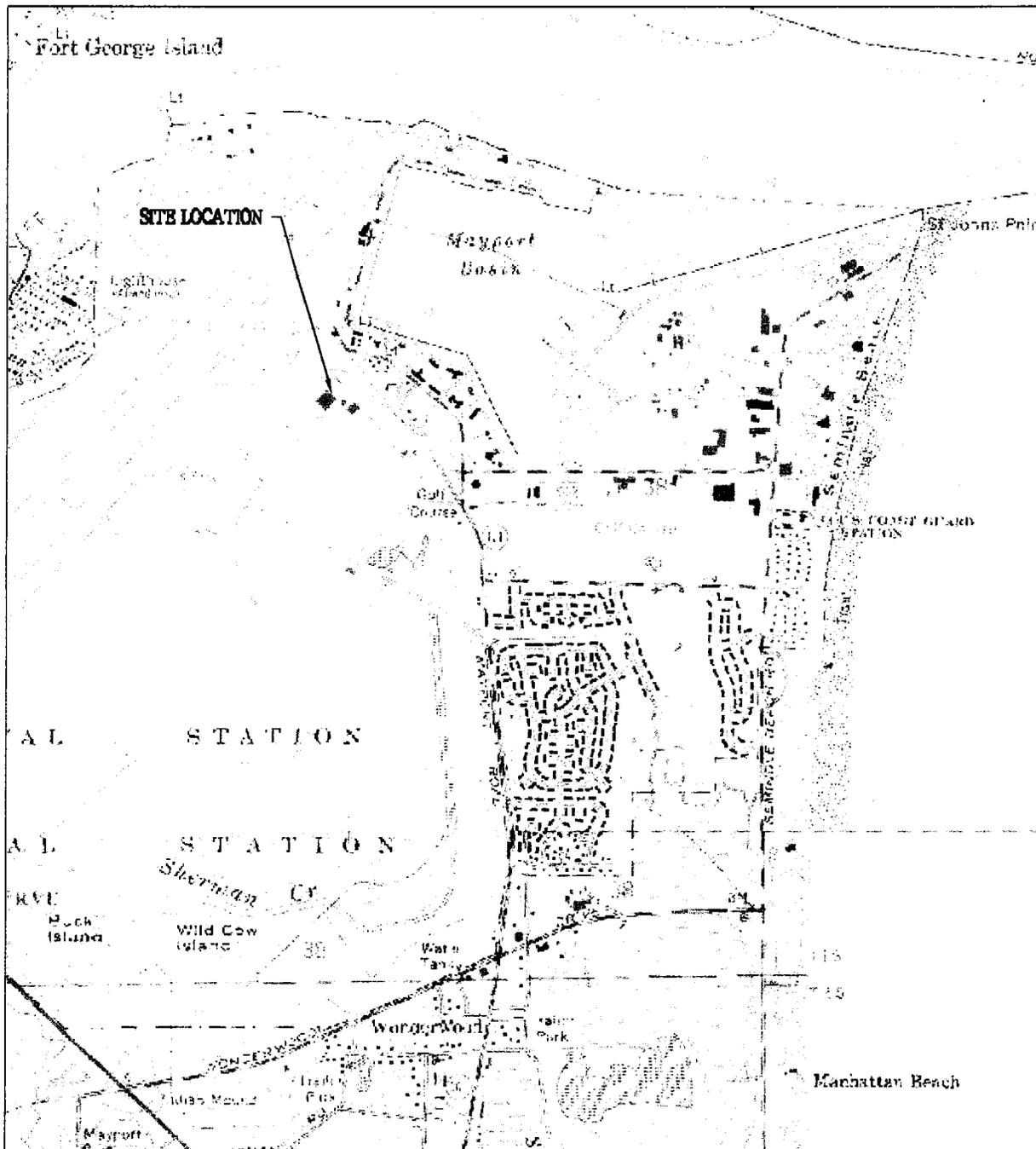
Ellis Environmental Group, LC (EEG), 2001. Site Assessment Addendum, Underground Storage Tank Sites 245, 1343, and 1388, Mayport Naval Station, Mayport, Florida. Prepared for Department of Navy, SOUTHNAV-FACENGCOCM, North Charleston, South Carolina (June).

Ellis Environmental Group, LC (EEG) & Harding ESE, Inc., 2001a. Quarterly Monitoring Report, First Quarter, Underground Storage Tank Site 1388, Mayport Naval Station, Mayport, Florida. Prepared for Department of Navy, SOUTHNAV-FACENGCOCM, North Charleston, South Carolina (September).

Ellis Environmental Group, LC (EEG) & Harding ESE, Inc., 2001b. Quarterly Monitoring Report, Second Quarter, Underground Storage Tank Site 1388, Mayport Naval Station, Mayport, Florida. Prepared for Department of Navy, SOUTHNAV-FACENGCOCM, North Charleston, South Carolina (November).

Ellis Environmental Group, LC (EEG) & Harding ESE, Inc., 2001c. Site Assessment Report Addendum, Underground Storage Tank Site 245, Mayport Naval Station, Mayport, Florida. Prepared for Department of Navy, SOUTHNAV-FACENGCOCM, North Charleston, South Carolina (October).

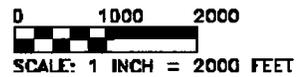
# Figures



**Source:**

USGS Quadrangle  
MAYPORT, FLA.  
1964  
Photorevised 1987

USGS Quadrangle  
JACKSONVILLE BEACH, FLA.  
1964  
Revised 1992



**SITE LOCATION MAP**

**ELLIS ENVIRONMENTAL GROUP  
GAINESVILLE, FLORIDA**

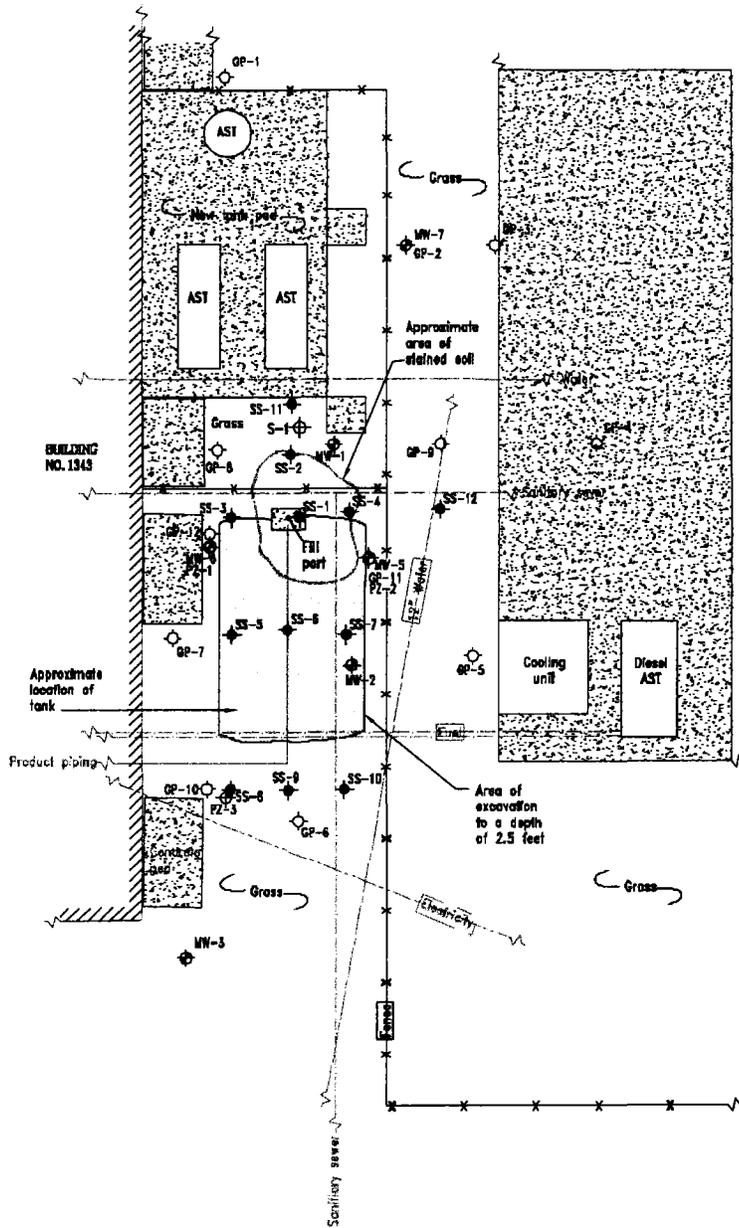


**SITE ASSESSMENT REPORT  
ADDENDUM  
SITE 1343  
US NAVAL STATION  
MAYPORT, FLORIDA**

FIGURE: DATE:

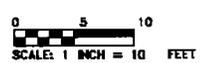
10/01

1



**NOTE:**  
 The information shown on this map was obtained in part by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.

LEGEND	
	MW-1 Monitoring well location and designation
	SS-9 Soil sample location and designation
	S-1 BHATE soil sample location and designation
	GP-10 Geoprobe location and designation
	PZ-3 Piezometer water sample location and designation
	AST Aboveground storage tank
	Concrete



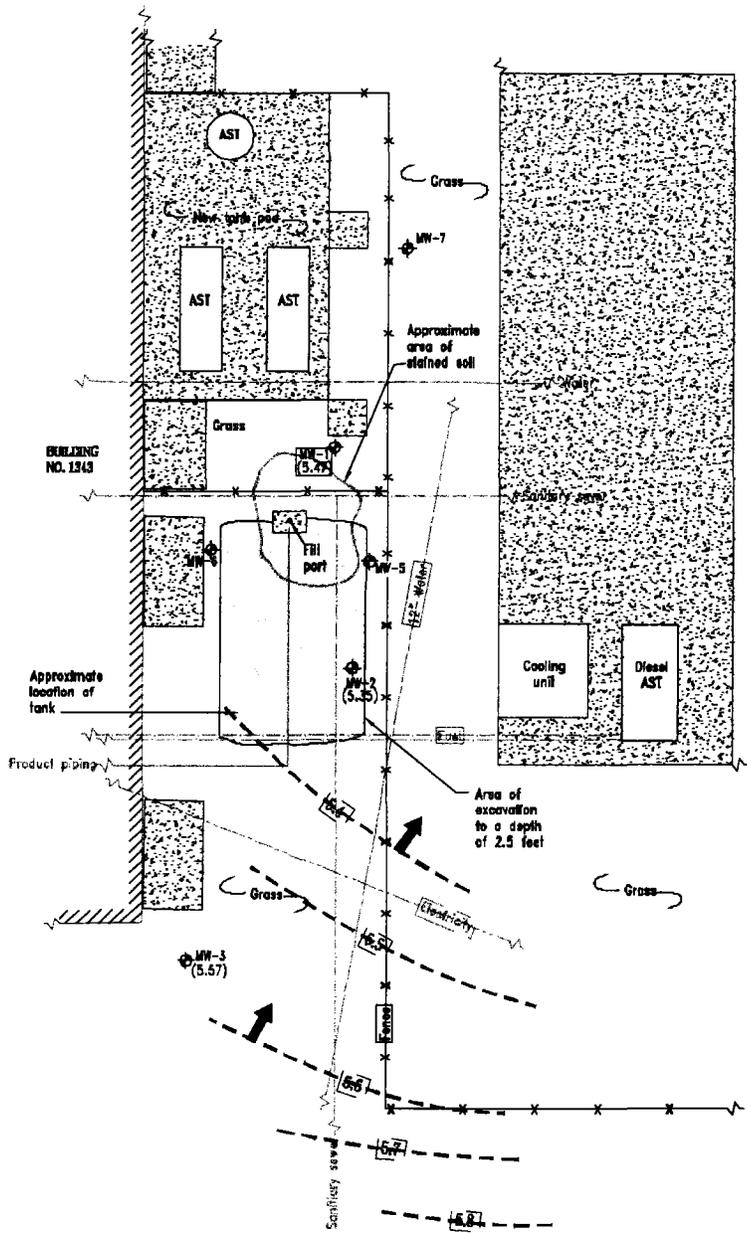
**SITE MAP AND SAMPLING LOCATIONS**

ELLS ENVIRONMENTAL GROUP  
 GAINESVILLE, FLORIDA



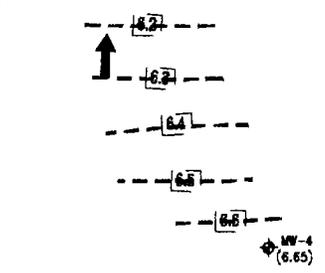
SITE ASSESSMENT REPORT ADDENDUM  
 SITE 1343  
 US NAVAL STATION  
 MAYPORT, FLORIDA

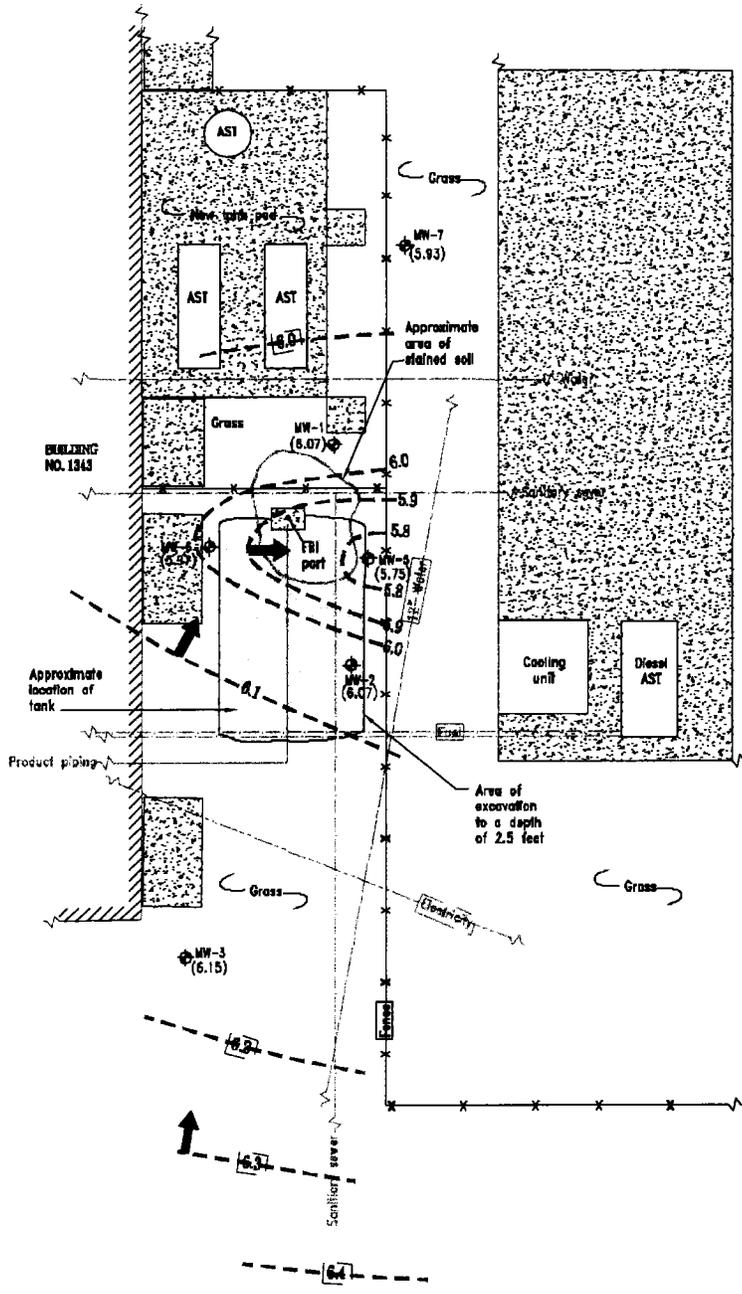
FIGURE DATE:  
 10/01  
 2



**NOTE:**  
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LEGEND	
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(5.47)	Potentiometric surface elevation
	Potentiometric surface elevation contour
	Potentiometric surface flow direction
	Aboveground storage tank
	Concrete

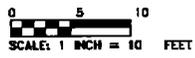
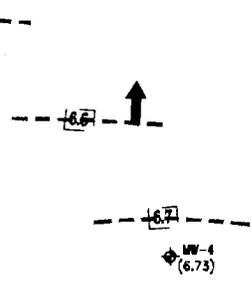


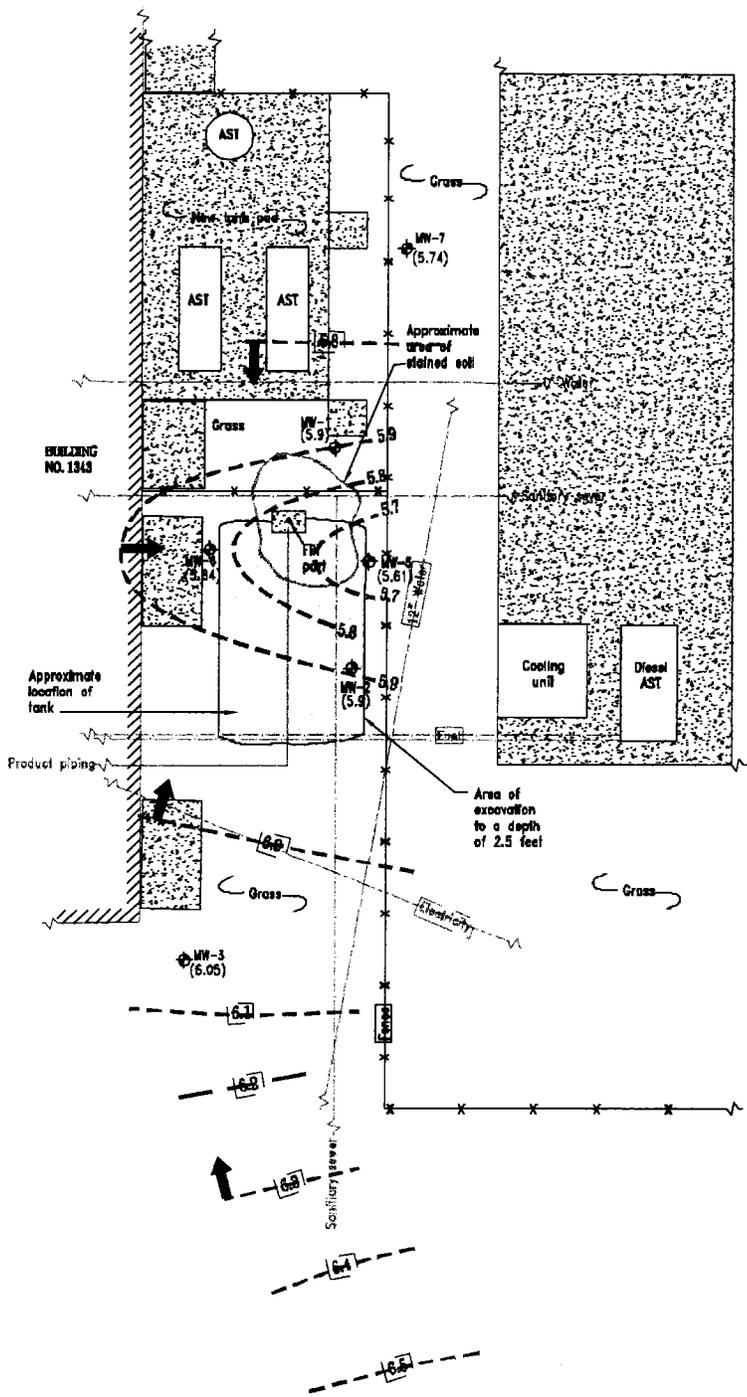


**LEGEND**

- MW-1 Monitoring well location and designation
- (6.07) Potentiometric surface elevation
- 6.0- Potentiometric surface elevation contour
- Potentiometric surface flow direction
- AST Aboveground storage tank
- Concrete

**NOTE:**  
The information shown on this map was obtained in part by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.

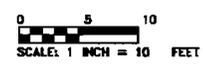


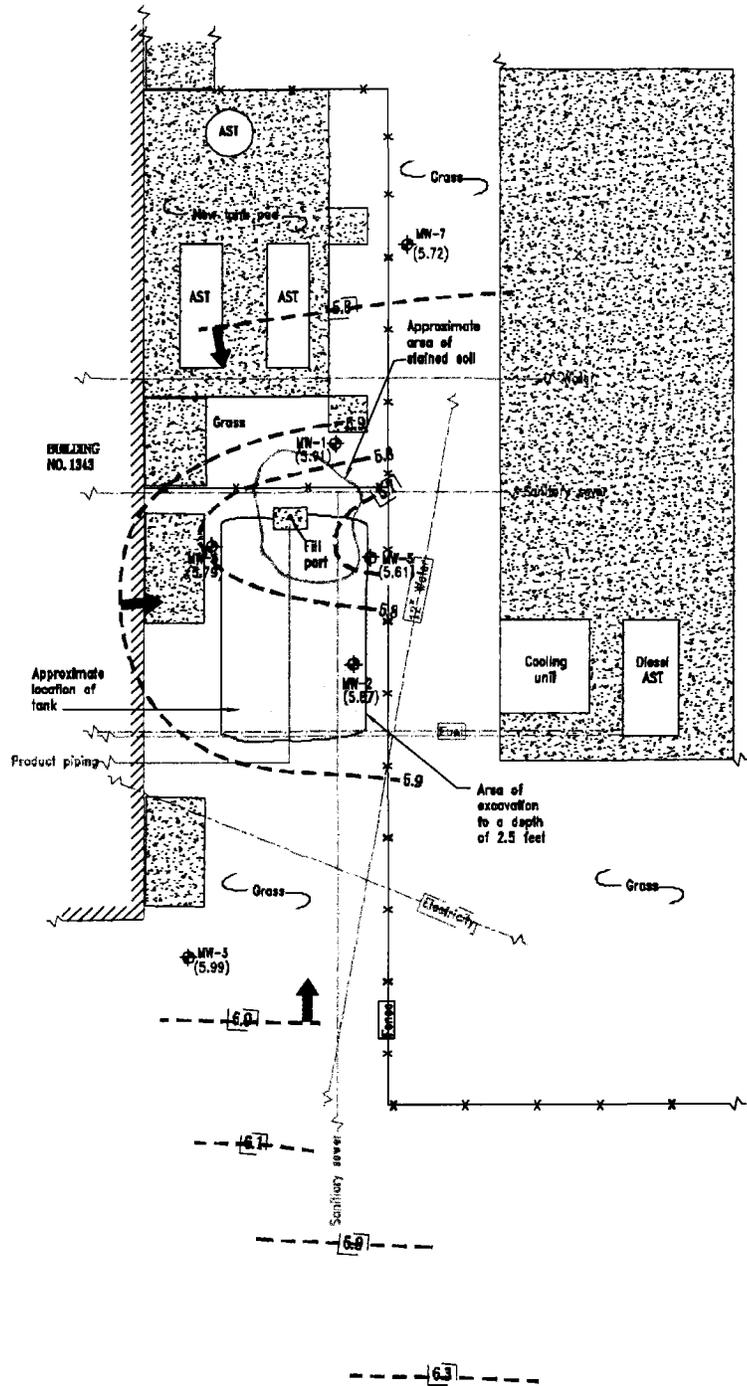


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- (5.9) Potentiometric surface elevation
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- Potentiometric surface flow direction
- AST Aboveground storage tank
- Concrete

**NOTE:**  
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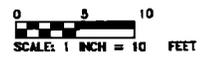


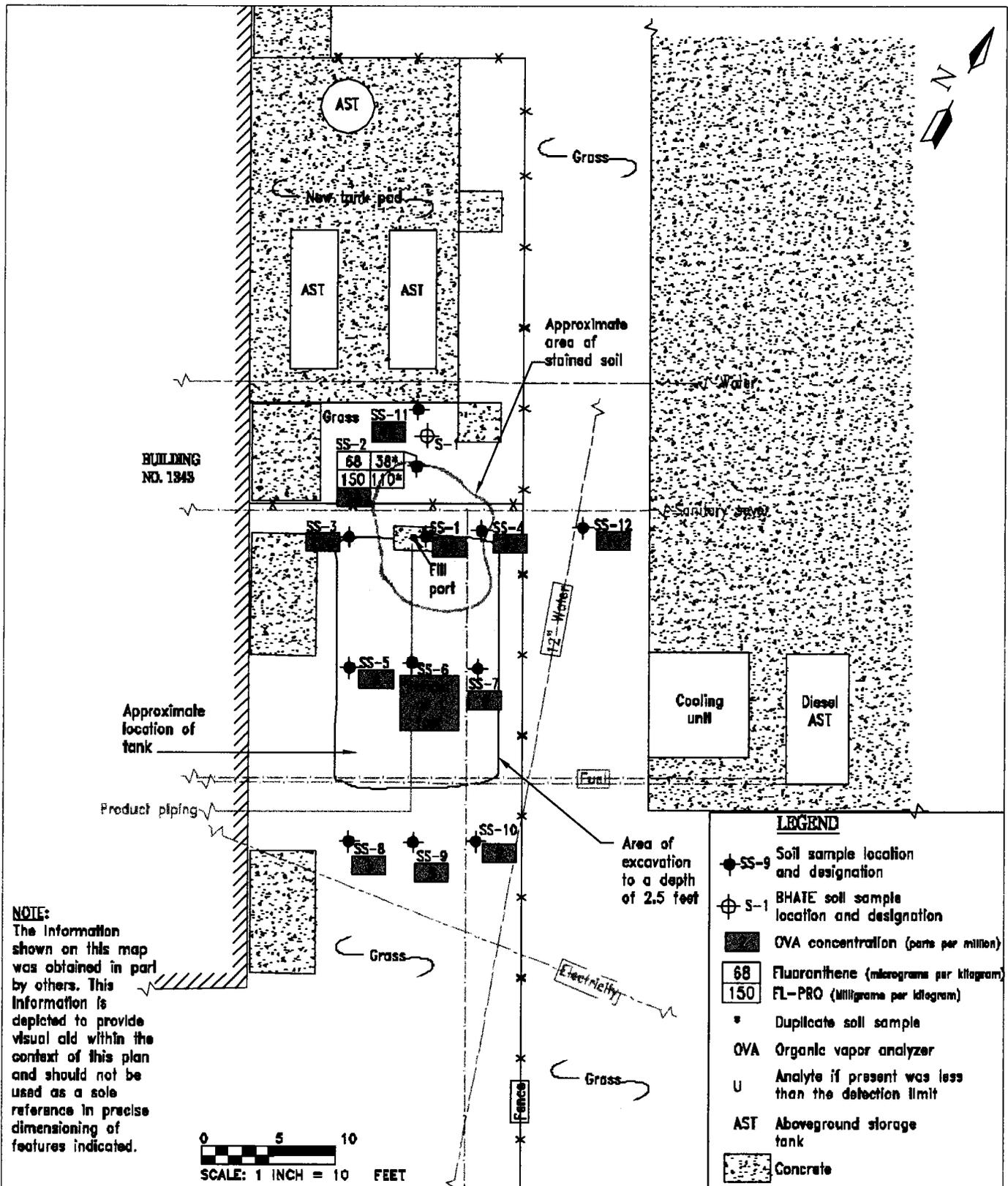


**LEGEND**

- ⊕ MW-1 Monitoring well location and designation
- (5.91) Potentiometric surface elevation
- - - 6.0 - - - Potentiometric surface elevation contour
- ➔ Potentiometric surface flow direction
- AST Aboveground storage tank
- ▨ Concrete

**NOTE:**  
The information shown on this map was obtained in part by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.





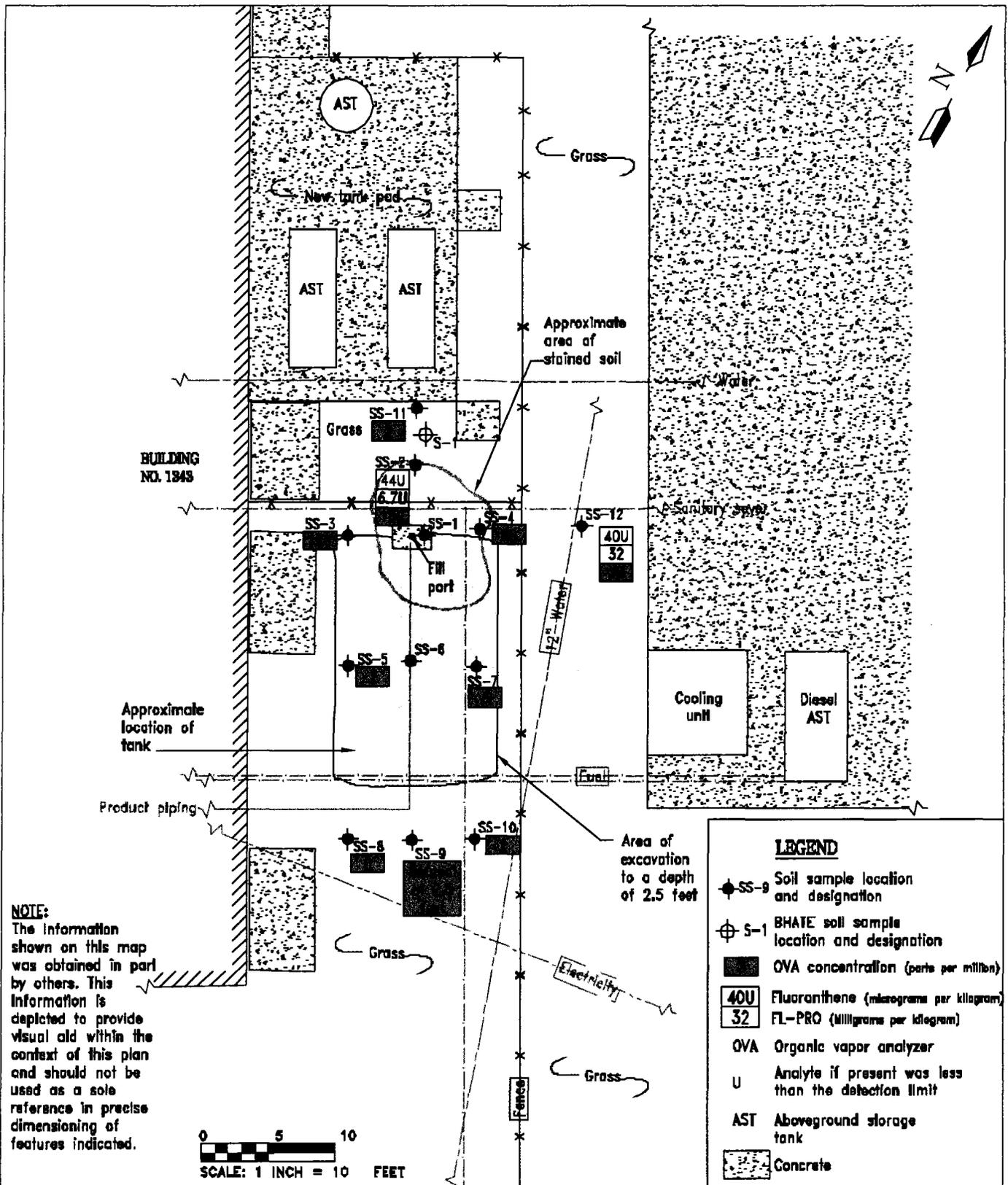
**ORGANIC VAPOR ANALYSIS AND LABORATORY RESULTS FOR SOIL SAMPLES 0-2 FEET**

ELLIS ENVIRONMENTAL GROUP  
GAINESVILLE, FLORIDA



SITE ASSESSMENT REPORT  
ADDENDUM  
SITE 1343  
US NAVAL STATION  
MAYPORT, FLORIDA

FIGURE: DATE:  
10/01



**ORGANIC VAPOR ANALYSIS AND LABORATORY RESULTS FOR SOIL SAMPLES 2-4 FEET**

ELLIS ENVIRONMENTAL GROUP  
GAINESVILLE, FLORIDA

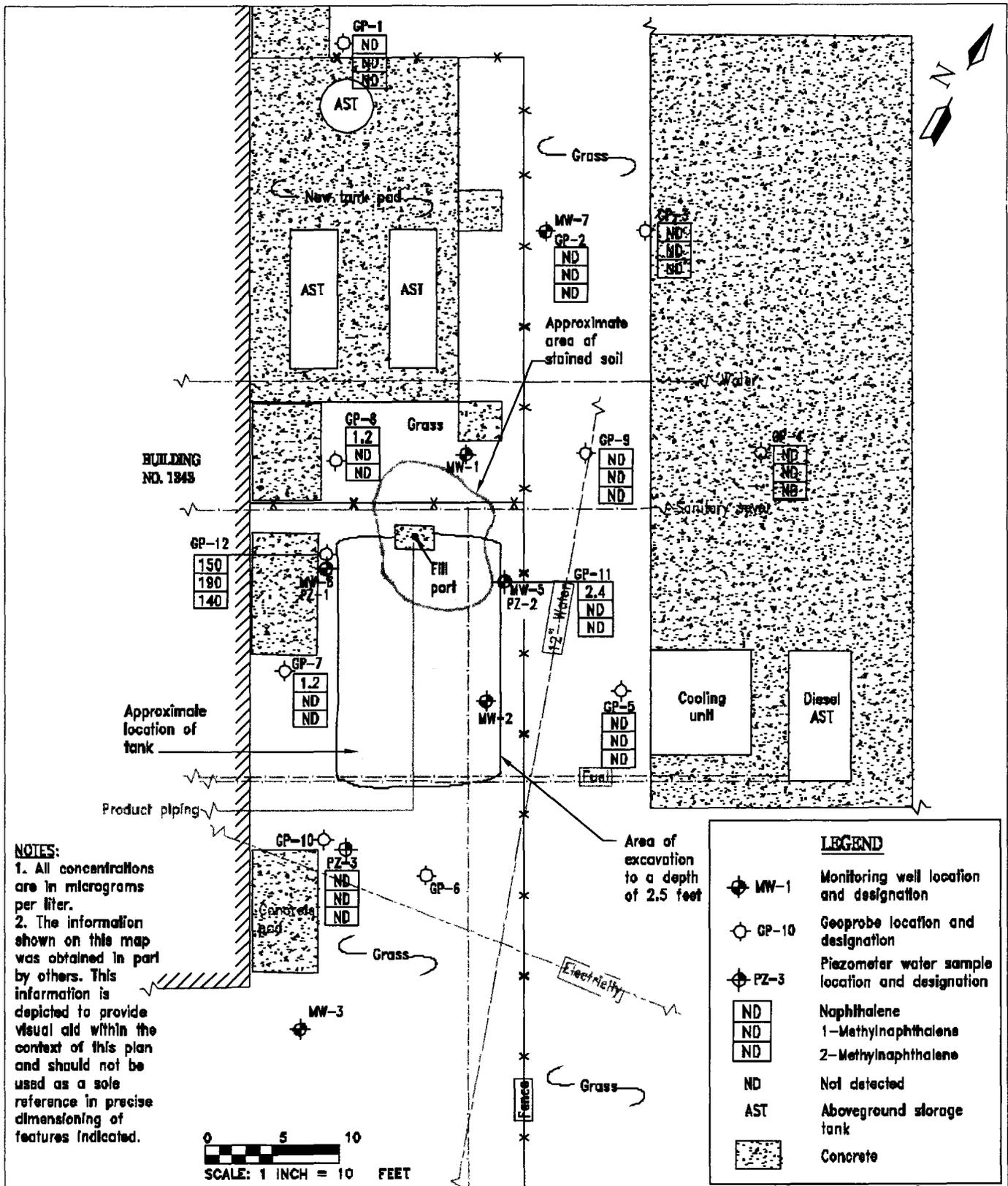


SITE ASSESSMENT REPORT  
ADDENDUM  
SITE 1948  
US NAVAL STATION  
MAYPORT, FLORIDA

FIGURE: DATE:

10/01

8



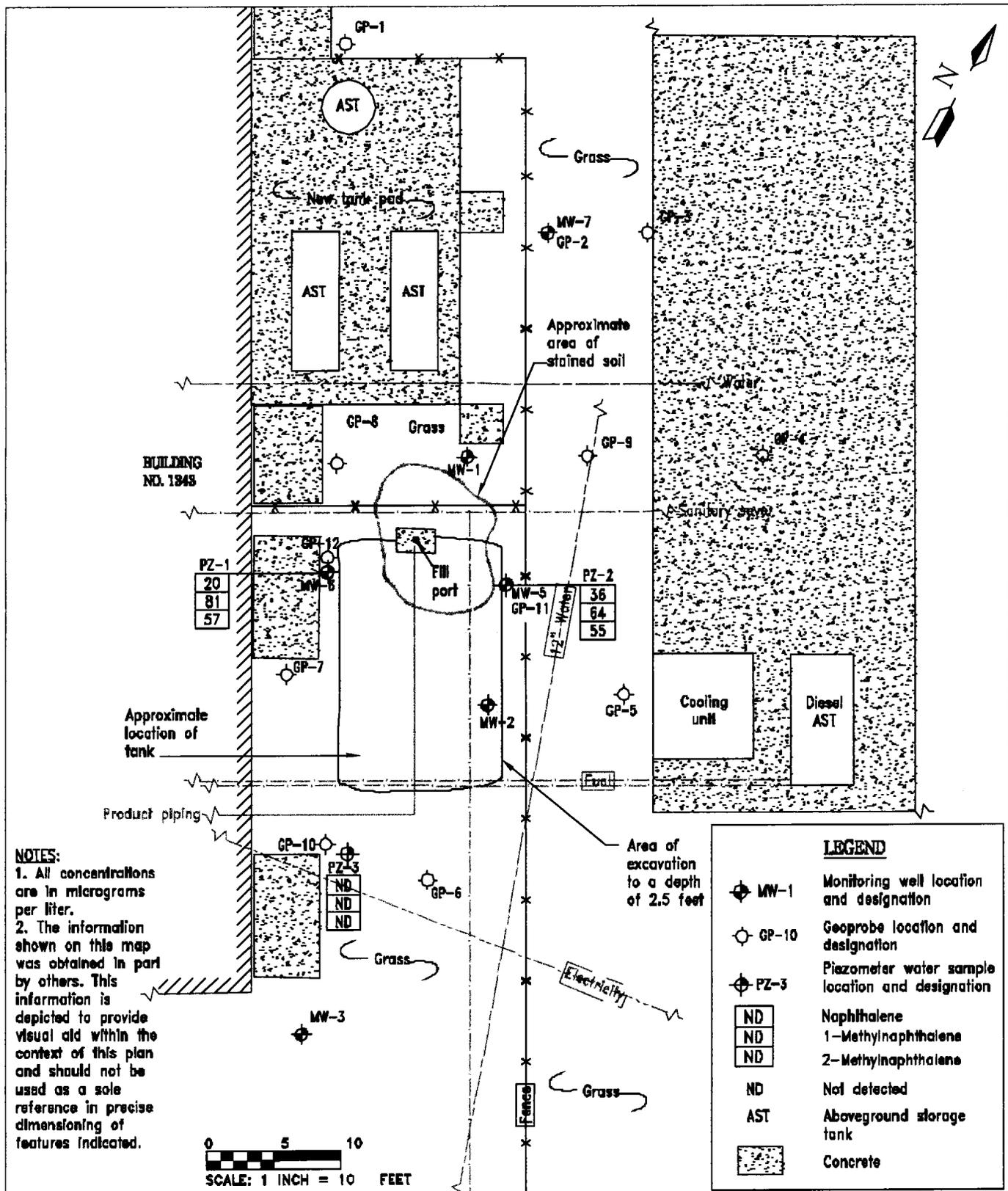
**GROUNDWATER FIELD SCREENING RESULTS**

ELLIS ENVIRONMENTAL GROUP  
 GAINESVILLE, FLORIDA



SITE ASSESSMENT REPORT  
 ADDENDUM  
 SITE 1943  
 US NAVAL STATION  
 MAYPORT, FLORIDA

FIGURE: 10/01  
 DATE:



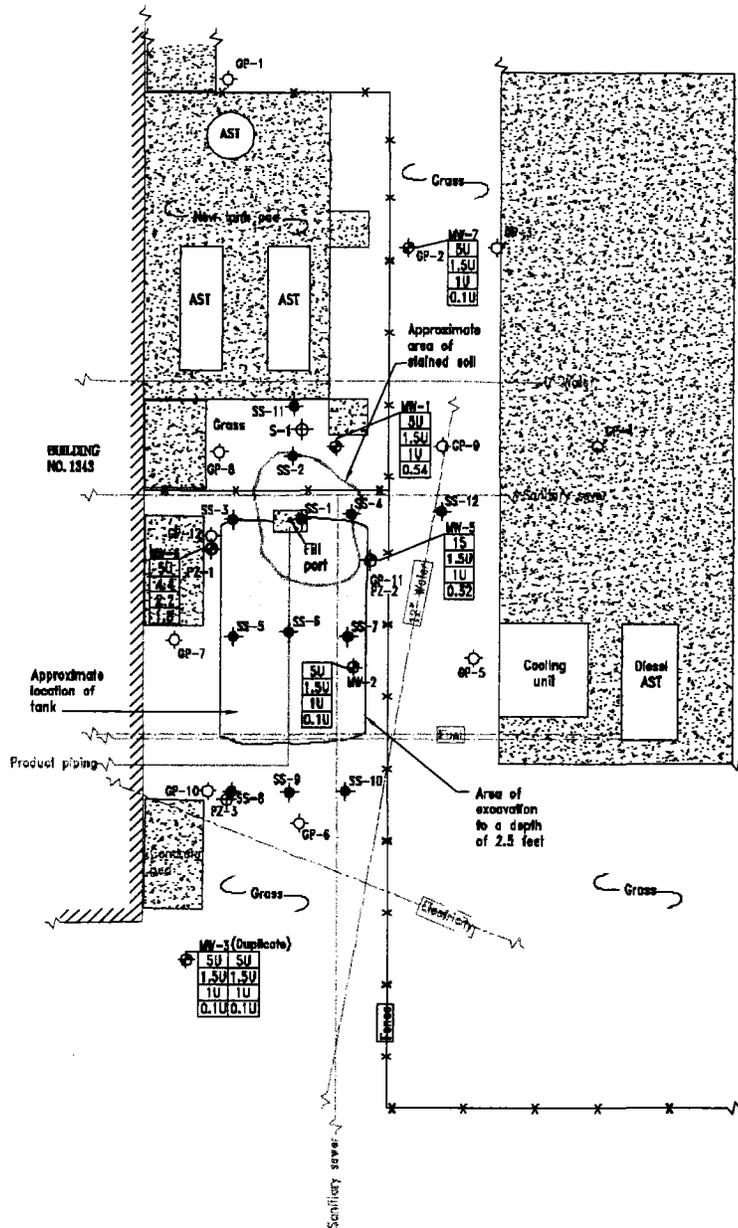
**FIELD ANALYSIS OF GROUNDWATER SAMPLES COLLECTED FROM TEMPORARY PIEZOMETERS**

ELLIS ENVIRONMENTAL GROUP  
GAINESVILLE, FLORIDA



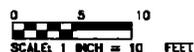
SITE ASSESSMENT REPORT  
ADDENDUM  
SITE 1343  
US NAVAL STATION  
MAYPORT, FLORIDA

FIGURE: DATE:  
10/01  
10



**NOTE:**  
 The information shown on this map was obtained in part by others. This information is depicted to provide visual aid within the context of this plan and should not be used as a sole reference in precise dimensioning of features indicated.

LEGEND	
	Monitoring well location and designation
	Soil sample location and designation
	BIATE soil sample location and designation
	Geoprobe location and designation
	Piezometer water sample location and designation
	Aboveground storage tank
	Concrete
	Lead (µg/l)
	1-methylnaphthalene (µg/l)
	Fluoranthene (µg/l)
	FL-PRO (mg/l)
	Micrograms per liter
	Milligrams per liter



## **Tables**

**Table 1. Groundwater Elevation Summary**

Site Assessment Report Addendum, Site 1343 U.S. Naval Station Mayport, Florida												
WELL NO.	MW-1			MW-2			MW-3			MW-4		
DIAMETER	2-Inches			2-Inches			2-Inches			2-Inches		
WELL DEPTH (ft)	13.75			13.75			13.75			12.98		
SCREEN INTERVAL	3.54 to 13.04			3.54 to 13.04			3.54 to 13.04			2.98 to 12.98		
TOC ELEVATION	9.45			9.47			9.17			9.24		
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP
06/13/97	5.29	4.16	NO	5.24	4.23	NO	5.24	3.93	NO	NI	NI	NI
07/24/97	5.13	4.32	NO	4.85	4.62	NO	4.99	4.18	NO	NI	NI	NI
02/19/99	4.19	5.26	Yes	4.76	4.71	NO	4.84	4.33	NO	NI	NI	NI
09/06/01	5.47	3.98	Yes	5.35	4.12	NO	5.57	3.60		6.65	2.59	NO
9/27/2001 (0800)	6.07	3.38	NO	6.07	3.40	NO	6.15	3.02		6.73	2.51	NO
9/27/2001 (1230)	5.90	3.55	NO	5.90	3.57	NO	6.05	3.12		6.77	2.47	NO
9/27/2001 (1630)	5.91	3.54	NO	5.87	3.60	NO	5.99	3.18		6.56	2.68	NO
WELL NO.	MW-5			MW-6			MW-7					
DIAMETER	2-Inches			2-Inches			2-Inches					
WELL DEPTH (ft)	13.75			13.75			13.75					
SCREEN INTERVAL	3.54 to 13.04			3.54 to 13.04			3.54 to 13.04					
TOC ELEVATION	9.16			9.21			9.23					
DATE	ELEV	DTW	FP	ELEV	DTW	FP	ELEV	DTW	FP			
06/13/97	NI	NI	NI	NI	NI	NI	NI	NI	NI			
07/24/97	NI	NI	NI	NI	NI	NI	NI	NI	NI			
02/19/99	NI	NI	NI	NI	NI	NI	NI	NI	NI			
09/06/01	NI	NI	NI	NI	NI	NI	NI	NI	NI			
9/27/2001 (0800)	5.75	3.41	NO	5.97	3.24	NO	5.93	3.30	NO			
9/27/2001 (1230)	5.61	3.55	NO	5.84	3.37	NO	5.74	3.49	NO			
9/27/2001 (1630)	5.61	3.55	NO	5.79	3.42	NO	5.72	3.51	NO			
<b>Notes:</b>												
Measurements made prior to September 6, 2001, were by Bhate Environmental Associates (BEA, 1997, 1999)												
DTW = Measurement of depth to groundwater in feet												
FP = Observation/measurement of free phase liquid												
ELEV = Groundwater elevation (NGVD)												
NO = Free phase liquid observed												
NGVD = National Geodetic Vertical Datum												
NM = Not measured												
TOC = Top of the well casing												
NI = Not installed												

**Table 2. Soil Sample Field Screening Results**

Site Assessment Report Addendum, Site 1343 U.S. Naval Station Mayport, Florida					
Sample Location / Date	Depth	OVA Measurements (part per million)			Comments
		Direct Measurement	With Charcoal Filter	Corrected	
SS-1	0 to 2	60	0	60	Petroleum odor – Medium
9/5/01	2 to 4	NM	NM	NM	Refusal at 2.5 feet
SS-2	0 to 2	30	0	30	Light Petroleum Odor
9/5/01	2 to 4	160	0	160	Medium Petroleum Odor
SS-3	0 to 2	120	0	120	Light Petroleum odor
9/5/01	2 to 4	170	30	140	Stained Soil, Strong Petroleum Odor
SS-4	0 to 2	50	17	33	Light Petroleum Odor
9/5/01	2 to 4	100	2	98	Medium Petroleum Odor
SS-5	0 to 2	42	38	4	No Petroleum Odor
9/5/01	2 to 4	35	33	2	No Petroleum Odor
SS-6	0 to 1	NM	NM	NM	
9/6/01					Refusal at 1 foot
SS-7	0 to 2	15	15	0	No Odor
9/5/01	2 to 4	28	25	3	No Odor
SS-8	0 to 2	4	1	3	No Odor
9/6/01	2 to 4	0	0	0	No Odor
SS-9	0 to 2	21	18	3	No Petroleum Odor
9/5/01	2 to 4	NM	NM	NM	Refusal at 2.5 feet
SS-10	0 to 2	3	1	2	No Odor
9/6/01	2 to 4	4	2	2	No Odor
SS-11	0 to 2	23	5	18	No Odor
9/6/01	2 to 4	11	9	2	No Odor
SS-12	0 to 2	90	80	10	Light Petroleum Odor
9/6/01	2 to 4	10	0	10	No Odor

**Notes:**  
 OVA = Organic Vapor Analyzer  
 NM = No OVA measurement obtained

**Table 3. Soil Sample Laboratory Analytical Results**

<b>Site Assessment Report Addendum, Site 1343 U.S. Naval Station Mayport, Florida</b>			
<b>Sample Location / Depth</b>	<b>Sample Date</b>	<b>Fluoranthene (µg/kg)</b>	<b>FL-PRO (mg/kg)</b>
<b>SS-12-2-4 2 to 4 Feet</b>	09/06/01	44 U	6.7 U
<b>SS-2-0-2 and Duplicate 0 to 2 Feet</b>	09/06/01	68 38 U	150 110
<b>SS-2-2-4 2 to 4 Feet</b>	09/06/01	40 U	32
<b>Petroleum Screening Criteria<sup>1</sup></b>			
<b>Residential Exposure</b>		2,900,000	340
<b>Industrial Exposure</b>		48,000,000	2,500
<b>Leachability to Groundwater</b>		1,200,000	340
<b>Leachability to Freshwater or Marine Surface Water</b>		1,300	340
<b>Notes:</b>			
1 = Petroleum-related compound screening criteria (soil cleanup target levels [SCTLs] under Chapter 62-777 FAC (Aug. 5, 1999). µg/kg = micrograms per kilogram mg/kg = milligrams per kilogram U = analyte, if present, was at a concentration less than the detection limit			

**Table 4. Groundwater Field Screening Analytical Results**

Site Assessment Report Addendum, Site 1343 U.S. Naval Station Mayport, Florida										
Sample Location	Date	Benzene (µg/l)	Ethylbenzene (µg/l)	Toluene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	Naphthalene (µg/l)	2-Methyl naphthalene (µg/l)	1-Methyl naphthalene (µg/l)	Petroleum Hydrocarbon (mg/l)
GP-1	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-2	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-3	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-4	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-5	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-6	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-7	09/05/01	<1	<1	<1	<1	<5	1.2	<5	<5	0.1
GP-8	09/05/01	<1	<1	<1	<1	<5	1.2	<5	<5	2
GP-9	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-10	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
GP-11	09/05/01	<1	<1	<1	<1	<5	2.4	<5	<5	0.05
GP-12	09/05/01	<1	<1	<1	<1	<5	<b>150</b>	<b>190</b>	<b>140</b>	<b>5</b>
MW-1	09/05/01	<1	<1	<1	<1	<5	<b>32</b>	<b>27</b>	<b>29</b>	2
Blank	09/05/01	<1	<1	<1	<1	<5	<1	<5	<5	0
<b>Groundwater</b>		1	30	40	20	50	<b>20</b>	<b>20</b>	<b>20</b>	5
<b>Marine</b>		71.28	605	475	370	33,600	<b>26</b>	<b>30</b>	95	5
<b>NA source</b>		100	300	400	200	500	200	200	200	50
<b>NA perimeter</b>		1	30	40	20	50	<b>20</b>	<b>20</b>	<b>20</b>	5
<b>Notes:</b> Groundwater screening criteria are from Chapter 62-777 Florida Administrative Code (FAC) and Chapter 62-550 FAC. NA = not analyzed; NI = not installed; µg/l = micrograms per liter; mg/l = milligrams per liter; <b>Bold</b> = detected concentration exceeds screening criteria										

**Table 5. Groundwater Laboratory Analytical Results**

Site Assessment Report Addendum, Site 1343 U.S. Naval Station Mayport, Florida											
Sample Location	Date	1-Methyl-naphthalene (µg/l)	2-Methyl-naphthalene (µg/l)	Naphthalene (µg/l)	Acenaphthylene (µg/l)	Benzo(b) fluoranthene (µg/l)	Benzo(k) fluoranthene (µg/l)	Benzo(a) pyrene (µg/l)	Flouranthene (µg/l)	FL-PRO (mg/l)	Lead (µg/l)
MW-1	06/13/97	1 U	5.8	4.3	6.6	1U	1U	1U	1U	NA	54
	09/28/01	1.5U	1.5U	1U	2U	0.1U	0.1U	0.2U	1U	0.54	5U
MW-2	06/13/97	1U	1U	1U	1U	1U	1U	1U	1U	1U	12
	09/28/01	1.5U	1.5U	1U	2U	0.1U	0.2U	0.1U	1U	0.1U	5U
MW-3 Duplicate Duplicate	06/13/97	1U	1U	1U	1U	1U	1U	1U	1U	1U	6.9
	06/13/97	1U	1U	1U	1U	1U	1U	1U	1U	1U	6.7
	09/28/01	1.5U	1U	1U	2U	0.1U	0.1U	0.2U	1U	0.1U	5U
MW-4	06/13/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	09/28/01	1.5U	1.5U	1U	2U	0.1U	0.1U	0.2U	1U	0.1U	5U
MW-5	06/13/97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
PZ-2 <sup>1</sup>	09/06/01	<b>55</b>	<b>64</b>	<b>36</b>	3.4	0.37	0.11	0.55	1U	NA	NA
MW-5	09/28/01	1.5U	1.5U	1U	2U	0.1U	0.1U	0.2U	1U	0.32	<b>15</b>
MW-6	06/13/97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
PZ-1 <sup>2</sup>	09/06/01	<b>57</b>	<b>81</b>	<b>20</b>	2.5	0.28	0.1U	0.34	1U	NA	NA
MW-6	09/28/01	4.4	1.5U	1U	2U	0.1U	0.1U	0.2U	2.2	1.8	5U
MW-7	06/13/97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
	09/28/01	1.5U	1.5U	1U	2U	0.1U	0.1U	0.2U	1U	0.1U	5U
PZ-3	09/06/01	1.5U	1.5U	1U	2U	0.1U	0.1U	0.2U	1U	NA	NA
<b>Groundwater</b>		20	20	20	210	0.2	0.5	0.2	210	5	15
<b>NA source</b>		200	200	200	2,100	20	50	20	2,100	50	150
<b>NA perimeter</b>		20	20	20	210	0.2	0.5	0.2	210	5	15
<p><b>Notes:</b>                      1 = Piezometer PZ-2 was converted to monitoring well MW-5                      2 = Piezometer PZ-1 was converted to monitoring well MW-6                      Groundwater screening criteria are from Chapter 62-777 Florida Administrative Code (FAC) and Chapter 62-550 FAC.</p> <p>Analytical Results obtained prior to September 28, 2001, were by Bhate Environmental Associates (BEA, 1997, 1999)                      µg/l = micrograms per liter; U = analyte, if present, was at a concentration less than the detection limit; NI = not installed;                      NA = not analyzed; NS = not sampled; mg/l = milligrams per liter; <b>Bold</b> = detected concentration exceeds screening criteria</p>											

**APPENDIX A**

**Field Methodology**

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## Hand Auger Soil Sampling and Headspace Analysis

A decontaminated stainless steel hand auger will be used to collect samples at two depths (approximately from 0 ft-bgs to 2 ft-bgs and 2 ft-bgs to 4 ft-bgs) above the capillary fringe zone. The hand auger will be advanced to the required depth and samples will be collected directly from the auger for headspace analysis and confirmatory samples.

The OVA jar headspace method will be used for performing field soil screening and is described below:

- The method involves the sampling of the headspace in half-filled 16-ounce jars with an OVA.
- Each soil sample is split into two 16-ounce jars.
- Each jar is half-filled.
- The jars are sealed at the top with a layer of tinfoil secured in place with a rubber band.
- The two jars are brought to a temperature of between 20°C (68°F) and 32°C (90°F) and the readings obtained 5 minutes thereafter.
- The OVA probe is inserted through the foil after the temperature has equilibrated.
- One of the jars will be analyzed without a filter.
- The other jar will be analyzed with the use of an activated charcoal filter unless the unfiltered reading is non-detect.
- The total corrected hydrocarbon measurement will be determined by subtracting the filtered value from the unfiltered value.
- All analyzed values will be recorded on the field log form (Appendix A).

Confirmatory soil samples will be obtained from areas where the high, medium, and low field screening results were obtained. Because the soil samples being obtained for headspace analysis are from shallow depths, it is economical to first determine confirmatory sample locations after the screening effort is complete. The headspace analysis data will be tabulated and the confirmatory soil sample locations will be selected as described below:

- One confirmatory soil sample will be collected from the highest headspace analysis value location and interval.
- One confirmatory soil sample will be collected from the location and interval that represents the average (medium) of the headspace values.
- One confirmatory soil sample will be collected from the lowest headspace analysis value location and interval but above 10 ppm.
- These samples will be collected immediately adjacent to the referenced location and interval.
- The sample selection rationale and other pertinent information will be recorded on the field log form (Appendix A).

## Geoprobe Groundwater Sampling

A Geoprobe rig utilizes a percussion hammer to advance the drive casing and sampling screen. The reactive weight (i.e., the weight of the sampling rig) assists the hydraulic hammer to push down on the direct-push rods. The advantage of using the direct-push sampling technique allows for multiple quality samples to be collected in a quick and cost effective manner.

Groundwater samples will be collected with the Geoprobe Screen Point 15 groundwater sampling system. The Geoprobe Screen Point 15 groundwater sampling system consists of a sampling sheath attached to the Geoprobe rods. When the rod is driven to the desired depth, the sheath is retracted, exposing a stainless steel screen to the formation for groundwater sampling.

Groundwater samples will be collected as grab samples using the following procedures:

1. Prior to groundwater sampling, the direct-push rods and sampling equipment will be thoroughly decontaminated following the decontamination procedures described in Section 3.4.
2. The Geoprobe Screen Point 15 groundwater sampling tool will be fitted to the end of the Geoprobe pipe.
3. The Geoprobe Screen Point 15 groundwater sampling tool will be advanced by pushing the steel pipe into the existing soil sampling borehole using the Geoprobe rig.
4. Four-foot lengths of pipe are continually added as the tool is advanced deeper into the ground to the sampling depth.
5. Once the Geoprobe Screen Point 15 groundwater sampling tool is pushed to just beneath the top of the water table, the outer casing of the sampling tool will be retracted exposing the sampling screen.
6. New small diameter tubing will be lowered through the Geoprobe pipe down to the sampling screen. New tubing will be used at each sample location.
7. The shallow groundwater samples are collected using a peristaltic suction-lift pump.
8. Samples will be collected in 40-milliliter glass vials.
9. Groundwater sampling information and measured field indicator parameters (turbidity, specific conductance, pH, and temperature) will be recorded on the sampling log form (Appendix A) prior to collecting the sample.
10. Once a sample is collected in the 40-milliliter vials, the Geoprobe Screen Point 15 groundwater sampling tool will be removed from the borehole.
11. The 40-milliliter glass sample vials will be labeled and taken directly to the on-site laboratory for analysis.

### **Monitoring Well Installation**

The monitoring wells will be installed by 6-inch outside diameter hollow-stem augering techniques. Well construction materials will be clean and meet standard industry specifications as described in this subsection. The materials used will ensure the longevity of the wells for the life of the required monitoring.

The riser and well screen will be comprised of 2-inch Schedule 40 PVC. The PVC well riser shall consist of new machine-threaded flush-joint pipe. The screen filter pack will consist of 20/30-grain sand and will extend approximately 1 to 2 feet above the top of the well screen unless site conditions dictate otherwise. A 10-foot-long, 0.010-inch slotted screen will be installed in each well.

Reasonable efforts will be taken to ensure the well plumbness and alignment during construction. The 10-foot-long well screen will be installed with the bottom of the screen approximately 5 to 8 feet below the top of the first water-bearing zone. Flush-threaded PVC riser will extend from the top of the screen to the ground surface.

The filter pack shall consist of clean silica sand that will be placed in the well annulus to 1 to 2 feet above the well screen. The top of the filter pack will be above the water table. The bentonite seal will also be above the water table and will consist of a hydrated bentonite slurry that will be poured into the annular space above the sand pack to a thickness of approximately 1 to 2 feet. Adequate hydration time must be allowed prior to grouting the well.

The grouting of the monitoring well annulus will be performed using a thick grout mixture. The grout mixture will be poured into the annular space. A grout mixture of 6.5 to 7 gallons of clean water to one sack (94 pounds) of Portland cement will be mixed. Additionally, 3 percent by weight of bentonite powder may be added to thicken the mixture and inhibit shrinkage of the grout. Dry components will be thoroughly mixed before adding water.

The well will be completed at the surface by manhole type flush mount construction.

Monitoring well drilling procedures will be recorded on a monitoring well boring log form (Appendix A). Monitoring well construction will be recorded on monitoring well construction log form (Appendix A).

### **Monitoring Well Development**

Water level measurements will be made and recorded to the nearest 0.01 foot on well development forms (Appendix A) in the field notebook prior to development. The volume of water in the well, including the saturated pore volume (assumed at 30 percent) of the sand-packed annulus, will be calculated based on the static water level and the well construction information. Well volume calculations will be recorded on well development forms (Appendix A) in the field notebook.

The pH, turbidity, specific conductance, and temperature meters will be calibrated in accordance with the manufacturers' instructions and documented on calibration forms (Appendix A) in the field notebook. The pH, turbidity, specific conductance, and temperature values will be measured at the initiation of development and after each half of a well volume is purged. The wells will be developed until the well purging parameters have stabilized to  $\pm 10$  percent over two successive measurements or a maximum of five well volumes have been removed.

After development is completed, each well will be checked for the presence of LNAPL using an acrylic bailer.

## Groundwater Sampling

The following procedures will be followed to purge and sample monitoring wells.

1. The pH, turbidity, specific conductivity, and temperature meters will be calibrated in accordance with the manufacturers' instructions before sampling and documented on calibration forms in the field notebook (Appendix A).
2. The volume of water in each well, including the saturated pore volume (assumed at 30 percent) of the sand-packed annulus, will be calculated based on the static water level and the well construction information. Well volume calculations will be recorded on well sampling forms in the field notebook (Appendix A).
3. A new disposable Teflon bailer will be used to purge the well.
4. Begin purging the well.
5. Record initial measurements of indicator parameters (pH, turbidity, specific conductance, and temperature).
6. Purge a minimum of three well volumes and until pH, conductivity, turbidity, and temperature measurements stabilize to within 10 percent of the previous reading for at least three readings obtained at least 0.5 well volumes apart.
7. The total amount of water purged and measurements of pH, conductivity, turbidity, and temperature will be recorded on well sampling forms in the field notebook (Appendix A).
8. Wells that recharge very slowly will be purged dry, allowed to recharge at least 80 percent of initial water column, and sampled.
9. Monitoring wells will be sampled using new pre-decontaminated disposable Teflon bailers. The bailer will be rinsed at least once with well water (i.e., the first bail of water is discarded) prior to collecting a sample.
10. VOC analytical fractions will be collected first, followed by diesel range organics (DRO), total organic carbon (TOC), PAHs, and metals.
11. Metals samples will be filtered (an unfiltered sample will also be analyzed), and all fractions will be preserved.
12. Samples will be placed on ice in a cooler.

All sampling equipment will be protected from coming into contact with contaminated soil surfaces to prevent cross contamination of the samples (e.g., equipment may be placed on disposable polyethylene plastic sheeting). A new pre-decontaminated disposable Teflon bailer will be used to purge and sample each well.

## Decontamination

A personnel and small-equipment decontamination area will be constructed at each work area to provide a decontamination facility in close proximity to the work area. Water collected from these facilities will be containerized.

The standard EEG decontamination solvent will be pesticide-grade isopropanol. Disposal of solvent rinses must be performed in an approved manner (depending upon the volume, either evaporated onsite or containerized for disposal through a disposal contract). The following decontamination procedures are for sampling equipment that contacts sample matrices.

### Field Sampling Equipment

1. Clean with Liquinox and tap water (a higher grade of water always may be substituted for tap water). Use a brush to remove particulate matter and surface films, if necessary.
2. Rinse thoroughly with tap water.
3. Rinse thoroughly with 10 percent nitric acid ( $\text{HNO}_3$ ).  $\text{HNO}_3$  is not to be used to decontaminate metallic sampling equipment.
4. Rinse thoroughly with de-ionized water.
5. Rinse with pesticide-grade isopropanol.
6. Allow to air-dry.
7. For overnight storage, wrap in new aluminum foil, if appropriate, to prevent contamination.

### Drilling Equipment

1. Hollow-stem augering and Geoprobe drilling equipment will be steam-cleaned prior to shipment to the site.
2. Before drilling and between borings, hollow-stem augering drilling equipment will be steam-cleaned with tap water to remove traces of soil, rock, and other contaminants.
3. Between each boring location, Geoprobe rods will be cleaned with Liquinox and tap water (a higher grade of water always may be substituted for tap water). Use a brush to remove particulate matter and surface films, if necessary. Then rinse thoroughly with tap water.

Sampling equipment that cannot be efficiently decontaminated due to heavy organic contamination will be discarded.

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## Groundwater Purging and Monitoring Equipment

1. Rinse water level tapes with tap water and Liquinox followed by de-ionized water. Place in a polyethylene bag to prevent contamination during storage or transit.
2. Groundwater purging and sampling bailers will be new, pre-decontaminated, and individually wrapped prior to shipment to the site.

## Surveying

Each horizontal (x/y) sample location will be measured by tape measure to fixed locations and recorded in the field logbook or on site maps. Each new and existing monitoring well elevation at all three sites will be surveyed to a relative elevation and recorded in the field logbook.

## Investigation-Derived Waste

All soil cuttings, purge water, and decontamination fluids collected will be contained for disposal in 55-gallon drums. Each drum will be labeled with the appropriate site information. The label will include a description of the waste matrix, the sample location (i.e., monitoring well identification), and the date the drum was sealed. A record of the number of drums filled at each site will be recorded on a log form in the logbook (Appendix A) before leaving that site. The drums will be moved to a holding area designated by Mayport personnel prior to determining disposal methodology.

Soils from shallow hand auger borings that are not excessively contaminated as determined by visual, olfactory indicators and/or OVA concentrations will be placed back into the borehole. Excessively contaminated soil will be drummed and disposed through disposal contractor.

Drill cuttings will be screened with an OVA during the drilling process. Drill cuttings that are not excessively contaminated as determined by visual, olfactory indicators and/or OVA concentrations will be distributed onsite at areas designated by Mayport personnel. Excessively contaminated soil will be drummed and disposed of through disposal contractor.

Disposal options for groundwater purging waste will be determined based on the groundwater sample data associated with the drummed purge water. If it is found that the purge water waste meets local criteria, it could be transported to the local publicly owned treatment works for disposal. If the overall concentration of certain contaminants is elevated to unacceptable levels, the water will be disposed of through a disposal contractor.

Decontamination fluids will be collected and segregated based on waste stream type. Decontamination wash water will be drummed separately from alcohol waste. These wastes will be assumed to be contaminated and will be disposed of through a disposal contractor.

At the conclusion of the field effort, all of the derived waste streams that have been containerized in 55-gallon drums will be stored at one location. Mayport personnel will designate the drum storage location prior commencing the field effort. A review of all the drums will determine the number and type. A disposal contractor will be notified of a date to remove the drums. EEG will

prepare a manifest for the proper handling of these waste drums. A Mayport representative will sign the manifest for shipment. Once the papers are in order, the drums will be removed from the site and transported to the appropriate disposal/treatment facility.

Solid domestic waste such as cardboard boxes, writing paper, paper food wrappers, drink containers, and the like will be collected and kept separate from all other waste streams. Incidental waste, including decontaminated personal protective equipment and disposable sampling supplies, will be sent to a solid waste landfill for disposal. This is done to minimize the disposal of regulated waste streams. These domestic-type wastes will be disposed of in a local refuse collection system at Mayport. Prior to the disposal of this waste, the EEG field team leader will obtain permission from the appropriate personnel to place this waste in their refuse system.

Drums that contain soil cuttings or fluids that have been determined to require special disposal actions will be co-located at the drum storage area until a disposal contractor can remove the waste. Drums containing contaminated soils or water will be properly manifested and shipped to an appropriate landfill/treatment facility for disposal.

Mayport personnel will designate sanitary facilities (i.e., restrooms) to be used by the field team prior to commencing the field effort.

### **Analytical**

This section details the analytical parameters to be quantified by laboratory analysis in samples collected during the investigations performed at the three sites. An estimated number of QC samples and the analyses to be performed on them are also presented. The number of QC samples associated with the sampling program may vary from these estimates based on the estimated duration of the field program.

The actual number of QC samples will be determined in the field based on the following:

- Ten percent duplicates.
- One trip blank per shipment (i.e., per cooler) of samples to be analyzed for VOCs.
- One equipment blank will be collected for the three confirmatory soil samples collected. The remainder of soil samples collected are for screening and do not require equipment blanks.
- No equipment blanks are required for the groundwater sampling effort because only new pre-decontaminated one-time use bailers will be used.

**APPENDIX B**

**Sampling Data Forms  
and Analytical Results**



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. GP-1  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-5-01  
Day:

Well Depth \_\_\_\_\_ Well Casing Diameter \_\_\_\_\_  
Boring Diameter \_\_\_\_\_ Annular Space Length \_\_\_\_\_  
Time \_\_\_\_\_ Stickup \_\_\_\_\_

Held \_\_\_\_\_ Casing Length \_\_\_\_\_  
Cut \_\_\_\_\_ DTW Top of Casing \_\_\_\_\_  
DTW \_\_\_\_\_ Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	START	STOP	TIME	TIME
Time	0920			1005
PH	7.25			680
Conductivity	OVER LIMIT			680
Temp. (°C)	27.5			27.7
Turbidity	OVER LIMIT			55
Vol. Purged				

Total Volume Purged \_\_\_\_\_ gallons  
Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

### Soil Headspace Analysis Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9/5/01  
Day: Wednesday

SS-1	9/5/01	0850	0-2	60	0	60	PETRO ODER MED ODER
SS-1	9/5/01	—	2-4	—	—	—	REFUSAL AT 2.5 FT.
SS-2	9/5/01	0925	0-2	30	0	30	LIGHT PETRO ODER ODER
SS-2	9/5/01	0930	2-4	160	0	160	MED PETRO ODER
SS-3	9/5/01	0945	0-2	120	0	120	LIGHT PETRO ODER
SS-3	9/5/01	0950	2-4	170	30	140	SALTED SOIL STRONG PETRO ODER
SS-4	9/5/01	0955	0-2	50	17	33	LIGHT PETRO ODER
SS-4	9/5/01	1015	2-4	100	2	98	MED PETRO ODER
SS-9	9/5/01	1040	0-2	21	18	3	NO PETRO ODER
SS-9	9/5/01	—	2-4	—	—	—	REFUSAL 0.25'
SS-5	9/5/01	1110	0-2	42	38	4	NO PETRO ODER
SS-5	9/5/01	1115	2-4	35	33	2	NO PETRO ODER
SS-7	9/5/01	1230	0-2	15	15	0	NO ODER
SS-7	9/5/01	1235	2-4	28	25	3	NO ODER

Recorded By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Quality Control Representative





Ellis  
Environmental  
Group, LC

### Soil Headspace Analysis Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-6-01  
Day:

Sample ID	Date	Depth	Interval	Parameter 1	Parameter 2	Parameter 3	Remarks
SS-8	9/6/01	0810	0-2	4	1	3	NO ORDER
SS-8	9/6/01	0815	2-4	0	0	0	NO ORDER
SS-10	9/6/01	0825	0-2	3	1	2	NO ORDER
SS-10	9/6/01	0830	2-4	4	2	2	NO ORDER
SS-11	9/6/01	0845	0-2	23	5	18	NO ORDER
SS-11	9/6/01	0850	2-4	11	9	2	NO ORDER
SS-6	9/6/01	0900	0-2	—	—	—	REPEAT AT 1'
SS-12	9/6/01	0915	0-2	90	80	10	EIGHT FEET ORDER
SS-12	9/6/01	0920	2-4	10	0	10	NO ORDER

Recorded By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Quality Control Representative

 Ellis Environmental Group, LC	<b>Well Sampling Data Form</b>	Southern Division Naval Facilities Engineering Command
		Contract Number : N62467-01-C-8826

Well Depth _____	Well Casing Diameter _____
Boring Diameter _____	Annular Space Length _____
Time _____	Stickup _____
Held _____	Casing Length _____
Cut _____	DTW Top of Casing _____
DTW _____ Top of Casing	Column of Water in Well _____
Gallons per foot of A.S. (from chart)	= _____
Column of Water or length of A.S (whichever is less)	x _____
Volume of Annular Space	= _____
Gallons per foot of Casing	= _____
Column of Water	x _____
Volume of Casing	= _____
Total Volume (Volume of A.S. + Volume of Casing)	= _____
Number of Volumes to be Excavated	x _____ to _____
Total Volume to be Excavated	= _____ to _____
Method of Purging (pump, bailer, etc.) _____	

	SET	ANAL	NOTICE	WELL	TIME
Time	1120				1125
PH	8.69				8.56
Conductivity	500				700
Temp. (°C)	31.8				30.8
Turbidity	600				8.8
Vol. Purged					

Total Volume Purged \_\_\_\_\_ gallons  
 Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

	I	F	
TIME	1220	1235	
PH	7.89	7.97	
COND	650	680	GP-3 2ND
TEMP	29.5	28.8	
TURB	95	14	



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. GP-6  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-5-01  
Day:

Well Depth \_\_\_\_\_  
Boring Diameter \_\_\_\_\_  
Time \_\_\_\_\_

Well Casing Diameter \_\_\_\_\_  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW \_\_\_\_\_ Top of Casing

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart)  
Column of Water or length of A.S (whichever is less)  
Volume of Annular Space  
Gallons per foot of Casing  
Column of Water  
Volume of Casing  
Total Volume (Volume of A.S. + Volume of Casing)  
Number of Volumes to be Excavated  
Total Volume to be Excavated  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

\_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	Start	Stop	Time	PH	Conductivity	Temp. (°C)	Turbidity	Vol. Purged
Time	1410							1425
PH	7.46							7.55
Conductivity	720							720
Temp. (°C)	28.2							27.3
Turbidity	OVER LIMIT							60
Vol. Purged								

Total Volume Purged \_\_\_\_\_ gallons

Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. GP-7  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-5-01  
Day: \_\_\_\_\_

Well Depth \_\_\_\_\_ Well Casing Diameter \_\_\_\_\_  
Boring Diameter \_\_\_\_\_ Annular Space Length \_\_\_\_\_  
Time \_\_\_\_\_ Stickup \_\_\_\_\_

Held \_\_\_\_\_ Casing Length \_\_\_\_\_  
Cut \_\_\_\_\_ DTW Top of Casing \_\_\_\_\_  
DTW \_\_\_\_\_ Top of Casing \_\_\_\_\_ Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

\_\_\_\_\_  
X \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
X \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
X \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

Time	1445			1455
PH	7.35			7.32
Conductivity	540			590
Temp. (°C)	27.0			26.3
Turbidity	OVER LIMIT			36
Vol. Purged				

Total Volume Purged \_\_\_\_\_ gallons

Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. 60-8

Page      of     

Date: 9-5-01

Day:     

Well Depth \_\_\_\_\_  
Boring Diameter \_\_\_\_\_  
Time \_\_\_\_\_

Well Casing Diameter \_\_\_\_\_  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW \_\_\_\_\_  
Top of Casing \_\_\_\_\_

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

\_\_\_\_\_

X \_\_\_\_\_

= \_\_\_\_\_

= \_\_\_\_\_

X \_\_\_\_\_

= \_\_\_\_\_

= \_\_\_\_\_

X \_\_\_\_\_ to \_\_\_\_\_

= \_\_\_\_\_ to \_\_\_\_\_

	Start	Stop	Start	Stop
Time	1510			1520
PH	6.61			6.81
Conductivity	690			680
Temp. (°C)	28.2			27.5
Turbidity	OVER LIMIT			75
Vol. Purged				

Total Volume Purged \_\_\_\_\_ gallons

Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. 6F-9  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-5-01  
Day: \_\_\_\_\_

Well Depth \_\_\_\_\_  
Boring Diameter \_\_\_\_\_  
Time \_\_\_\_\_

Well Casing Diameter \_\_\_\_\_  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW \_\_\_\_\_ Top of Casing \_\_\_\_\_

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	Start	Stop	Stop	Stop	Stop
Time	1625				1635
PH	7.13				7.18
Conductivity	580				580
Temp. (°C)	28.3				28.3
Turbidity	25				160
Vol. Purged					

Total Volume Purged \_\_\_\_\_ gallons

Sample Time/Date \_\_\_\_\_

Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
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Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. 6P-10  
Page      of       
Date: 9-5-01  
Day:     

Well Depth \_\_\_\_\_  
Boring Diameter \_\_\_\_\_  
Time \_\_\_\_\_

Well Casing Diameter \_\_\_\_\_  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW \_\_\_\_\_

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

= \_\_\_\_\_  
X \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
X \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
X \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	Start	Mid	Final	Mean	Final
Time	1640				1650
PH	7.07				7.05
Conductivity	610				600
Temp. (°C)	26.0				26.1
Turbidity	OVER LIMIT				350
Vol. Purged					

Total Volume Purged \_\_\_\_\_ gallons

Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. 6P-11  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9-5-01  
Day: \_\_\_\_\_

Well Depth \_\_\_\_\_  
Boring Diameter \_\_\_\_\_  
Time \_\_\_\_\_

Well Casing Diameter \_\_\_\_\_  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW \_\_\_\_\_ Top of Casing

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (# from chart)  
Column of Water or length of A.S. (whichever is less)  
Volume of Annular Space  
Gallons per foot of Casing  
Column of Water  
Volume of Casing  
Total Volume (Volume of A.S. + Volume of Casing)  
Number of Volumes to be Excavated  
Total Volume to be Excavated  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	Start	End	Start	End
Time	1650			1700
PH	7.07			7.03
Conductivity	8.0			790
Temp. (°C)	28.1			28.2
Turbidity	OVER LIMIT			190
Vol. Purged				

Total Volume Purged \_\_\_\_\_ gallons  
Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

**STRONG PETRO OPER**

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



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Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. 6P-12  
Page of  
Date: 9-5-01  
Day:

Well Depth \_\_\_\_\_ Well Casing Diameter \_\_\_\_\_  
Boring Diameter \_\_\_\_\_ Annular Space Length \_\_\_\_\_  
Time \_\_\_\_\_ Stickup \_\_\_\_\_

Held \_\_\_\_\_ Casing Length \_\_\_\_\_  
Cut \_\_\_\_\_ DTW Top of Casing \_\_\_\_\_  
DTW \_\_\_\_\_ Top of Casing \_\_\_\_\_ Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) \_\_\_\_\_

= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_  
= \_\_\_\_\_  
= \_\_\_\_\_  
x \_\_\_\_\_ to \_\_\_\_\_  
= \_\_\_\_\_ to \_\_\_\_\_

	Start	Volume	Depth	Notes	Area
Time	1745				
PH	7.41				
Conductivity	500				
Temp. (°C)	28.5				
Turbidity	OVER LIMIT				
Vol. Purged					

Total Volume Purged \_\_\_\_\_ gallons  
Sample Time/Date \_\_\_\_\_ Sample Number \_\_\_\_\_

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

GP-6?

Preliminary Report  
Mayport

	BLANK	gp-1 <i>X-11-11-11-11</i>	gp-3	gp-4	gp-5	gp-2	mw-1	gp-7	gp-8	gp-9	gp-10	gp-11	gp-12
mtbe	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
toluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m,p-xylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
naphthalene	1.8	<1	<1	<1	<1	<1	32	1.2	1.2	<1	<1	2.4	150
2-methylnaphthalene	<5	<5	<5	<5	<5	<5	27	<5	<5	<5	<5	<5	190
1-methylnaphthalene	<5	<5	<5	<5	<5	<5	29	<5	<5	<5	<5	<5	140
Hydrocarbons***	0	0	0	0	0	0	2x	0.1x	2x	0	0	0.05x	5x

\*\*\* Indication of approx. average height of hydrocarbon peaks relative to nearest internal standard.  
Internal standard peaks are 20 ug/L (ppb)

 Ellis Environmental Group, LLC	<b>Monitor Well and Soil Boring Log</b>		Southern Division Naval Facilities Engineering Command	
	Contract Number : N62467-01-C-8826	Mayport Naval Station Mayport, Florida		Page <u>1</u> of <u>1</u> Date: <u>9/26</u> Day: <u>Wednesday</u>
Well Boring I.D.: MW-5			Drilling Subcontractor: Pro Sonic	Driller: John Geologist: Matt
Drill Make and Model: Geoprobe 66 DT (Hollow Stem Auger)			Drilling Method: HSA	
Total Depth Drilled: <u>14.9</u> ft-bgs	Bottom of Well: <u>14.9</u> ft-bgs	Date Drilled: <u>9/26/01</u>		
Casing Material: <u>PVC</u>	Screen Interval: <u>2.6 - 14.9</u> ft-bgs	Date Completed: <u>9/26/01</u>		
Screen Material: <u>PVC</u>	Sandpack Interval: <u>2 - 14.9</u> ft-bgs	Date Developed: <u>9/26/01</u>		
Grout Material: <u>Portland #2</u>	Seal Interval: <u>1.4 - 2.0</u> ft-bgs	Develop. Mthd:		
Well Stick Up: ft-ags	Grout Interval: <u>0 - 1.4</u> ft-bgs	Depth to Water: <u>3.5</u> ft-btoc		
TOC Elevation ft-msl	Casing Dia.: inches	Date Measured:		
Ground Elevation ft-msl	Annulus Dia.: <u>8</u> inches			

Depth (feet bgs)	Sample Type	Sample I.D.	Blows / 6"	Sample Recovery (in)	Headspace Reading (ppm)	Well Details	Sample Description	Remarks
1							Dark brown to black fine sand with shell fragments (some fine white sand)	
2							medium to fine grey sand with shell fragments	
3								
4							water table detected at 3'4" (strong product odor)	
5							dark brown sandy clay with shell fragment	
6								
7								
8								
9								
TERMINATED at 14.9 Ft								

Well Legend: Bentonite  Well Screen  Grout  Lithology change  Gradational change.....



Ellis  
Environmental  
Group, LC

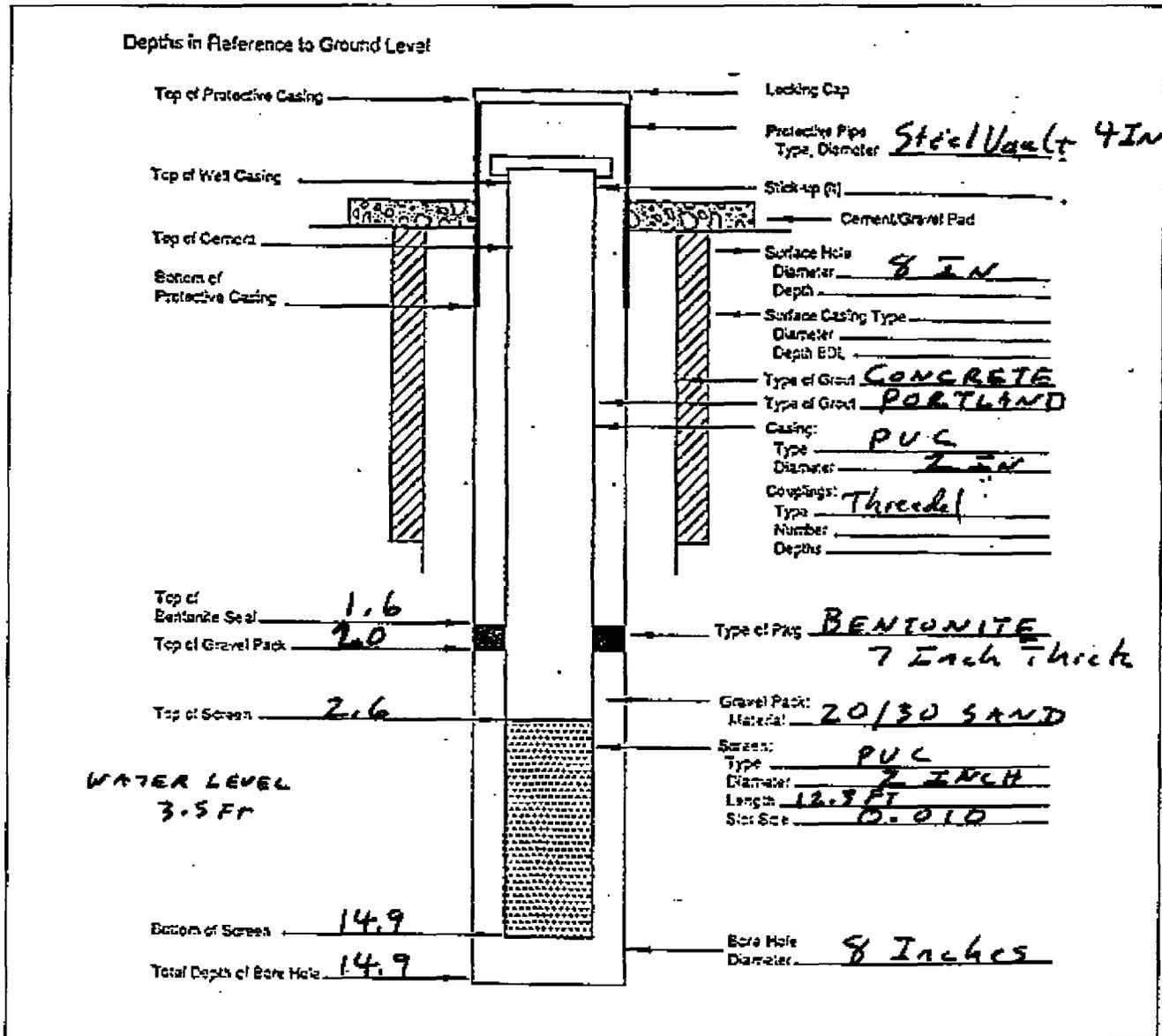
### Monitor Well Construction Log

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Boring No. MW-5  
Page 1 of 1  
Date: 9-26-01  
Day:



Recorded By: M. Ingham

Date: 9/26/01

Reviewed By: \_\_\_\_\_  
Quality Control Representative

Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Development Record

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-5  
Page      of       
Date: 9/26/01  
Day: Wednesday

Borehole Diameter 8 in                      Static Water Level 3.5  
Well Diameter 2 in                              Casing Volume       
Well Depth 14.9 ft                              Annual Space Volume       
Screen Length 12.3 ft                            Total Volume     

     Bailer         Submersible Pump                           Surge Block  
2 Centrifugal Pump                                   Manual Piston Pump                           Other

Date 9/26/01  
Time Start 1400                              Flow Rate 2.5 GPM  
Time End 1410                                Total Volume Discharged 25 gal

	INITIAL	DURING	FINAL
Time	14:00		
Conductivity	390 700 µMHOS		
PH	6.35		
Temperature	26°C		
Turbidity	31		

Start dark brown                              Time 1400  
Midpoint light brown                      Time 1405  
End clear                                      Time 1410  
Photograph Taken Yes  No

Recorded By: M. Ingham

Date: 9-26-01

Reviewed By: \_\_\_\_\_  
Quality Control Representative

Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Development Record

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. NAF-6  
Page      of       
Date: 9-26-01  
Day:     

Borehole Diameter 8 IN Static Water Level                       
Well Diameter 2 IN Casing Volume                       
Well Depth 14.1 FC Annual Space Volume                       
Screen Length                      Total Volume                     

Bailer  Submersible Pump  Surge Block  
 Centrifugal Pump  Manual Piston Pump  Other

Date 1705 9-26-01  
Time Start 1705 Flow Rate                       
Time End 1710 Total Volume Discharged                     

	INITIAL	DATE (Z)	TIME
Time	1705	1710	
Conductivity	800	purged dry	
PH	7.00		
Temperature	27.2		
Turbidity	muddy (over limit)		

Start 1705 dark brown muddy Time 1705  
Midpoint                      Time                       
End                      Time                       
Photograph Taken  Yes  No

Recorded By: M. Ingham

Date: 9-26-01

Reviewed By:                       
Quality Control Representative

Date:

 Ellis Environmental Group, L.C.		<b>Monitor Well and Soil Boring Log</b>		Southern Division Naval Facilities Engineering Command	
Contract Number : N62467-01-C-8826		Mayport Naval Station Mayport, Florida		Page <u>1</u> of <u>1</u> Date: <u>9-26-01</u> Day: <u>Wed</u>	
Well Boring I.D.: <u>MW-6</u>		Drilling Subcontractor <u>Geoprobe 66DT (HSA)</u>		Driller: _____ Geologist: _____	
Drill Make and Model:		Drilling Method: <u>HSA</u>		Date Drilled: <u>9-26-01</u>	
Total Depth Drilled: <u>14.1</u> ft-bgs		Bottom of Well: <u>14.1</u> ft-bgs		Date Completed: <u>9-26-01</u>	
Casing Material: <u>PVC</u>		Screen Interval: <u>3.1 - 14.1</u> ft-bgs		Date Developed: <u>9-26-01</u>	
Screen Material: <u>PVC</u>		Sandpack Interval: <u>2.1 - 14.1</u> ft-bgs		Develop. Mthd: <u>Centrifugal</u>	
Grout Material: <u>Portland #2</u>		Seal Interval: <u>1.6 - 3.1</u> ft-bgs		Depth to Water: <u>ft-bloc</u>	
Well Stick Up: _____ ft-ags		Grout Interval: <u>0 - 1.6</u> ft-bgs		Date Measured: _____	
TOC Elevation _____ ft-msl		Casing Dia.: <u>2</u> inches		Annulus Dia.: <u>8</u> inches	
Ground Elevation _____ ft-mst					

Depth (feet bgs)	Sample Type	Sample I.D.	Blows / 6"	Sample Recovery (%)	Headspace Reading (ppm)	Well Details	Sample Description	Remarks
1							tan to light brown medium-grained sand with large shell fragments	
2								
3								
4								
5							water table reached at 4'4"; sandy clay with shell fragments (stained grey by product), diesel odor detected	
6								
7								
8								
9								

Well Legend: Bentonite  Well Screen  Grout  Lithology change  Gradational change.....

 Ellis Environmental Group, LC		<b>Monitor Well and Soil Boring Log</b>		Southern Division Naval Facilities Engineering Command	
Contract Number : N62467-01-C-8826		Mayport Naval Station Mayport, Florida		Page <u>1</u> of <u>1</u> Date: <u>9-26-01</u> Day: <u>Wed</u>	
<b>Well Boring I.D.:</b> MW-7					
Drilling Subcontractor <i>ProDnic</i>				Driller: _____ Geologist: _____	
Drill Make and Model: <i>Geoprobe 66 DT</i>				Drilling Method: _____	
Total Depth Drilled: _____ ft-bgs		Bottom of Well: <u>14.6</u> ft-bgs		Date Drilled: <u>9-26-01</u>	
Casing Material: <u>PVC</u>		Screen Interval: <u>3.3-14.6</u> ft-bgs		Date Completed: <u>9-26-01</u>	
Screen Material: <u>PVC</u>		Sandpack Interval: <u>2.3-14.6</u> ft-bgs		Date Developed: <u>9-26-01</u>	
Grout Material: <u>Cement</u>		Seal Interval: <u>1.8-2.3</u> ft-bgs		Develop. Mthd: <u>Centrifugal</u>	
Well Stick Up: _____ ft-ags		Grout Interval: <u>0-1.8</u> ft-bgs		Depth to Water: _____ ft-btoc	
TOC Elevation _____ ft-msl		Casing Dia.: <u>2</u> inches		Date Measured: _____	
Ground Elevation _____ ft-msl		Annulus Dia.: <u>8</u> inches			

Depth (feet bgs)	Sample Type	Sample I.D.	Blows / 6"	Sample Recovery (in)	Headspace Reading (ppm)	Well Details	Sample Description	Remarks
1							Dark grey fine sand with organics and shell fragments	
2							moist tan medium sand with clay containing large shell fragments	
3								
4								
5							water table reached at 4'4"; dark brown sandy clay with small to large shell fragments	
6								
7								
8								
9								

Well Legend: Bentonite  Well Screen  Grout  Lithology change  Gradational change.....



Ellis  
Environmental  
Group, LC

### Monitor Well Construction Log

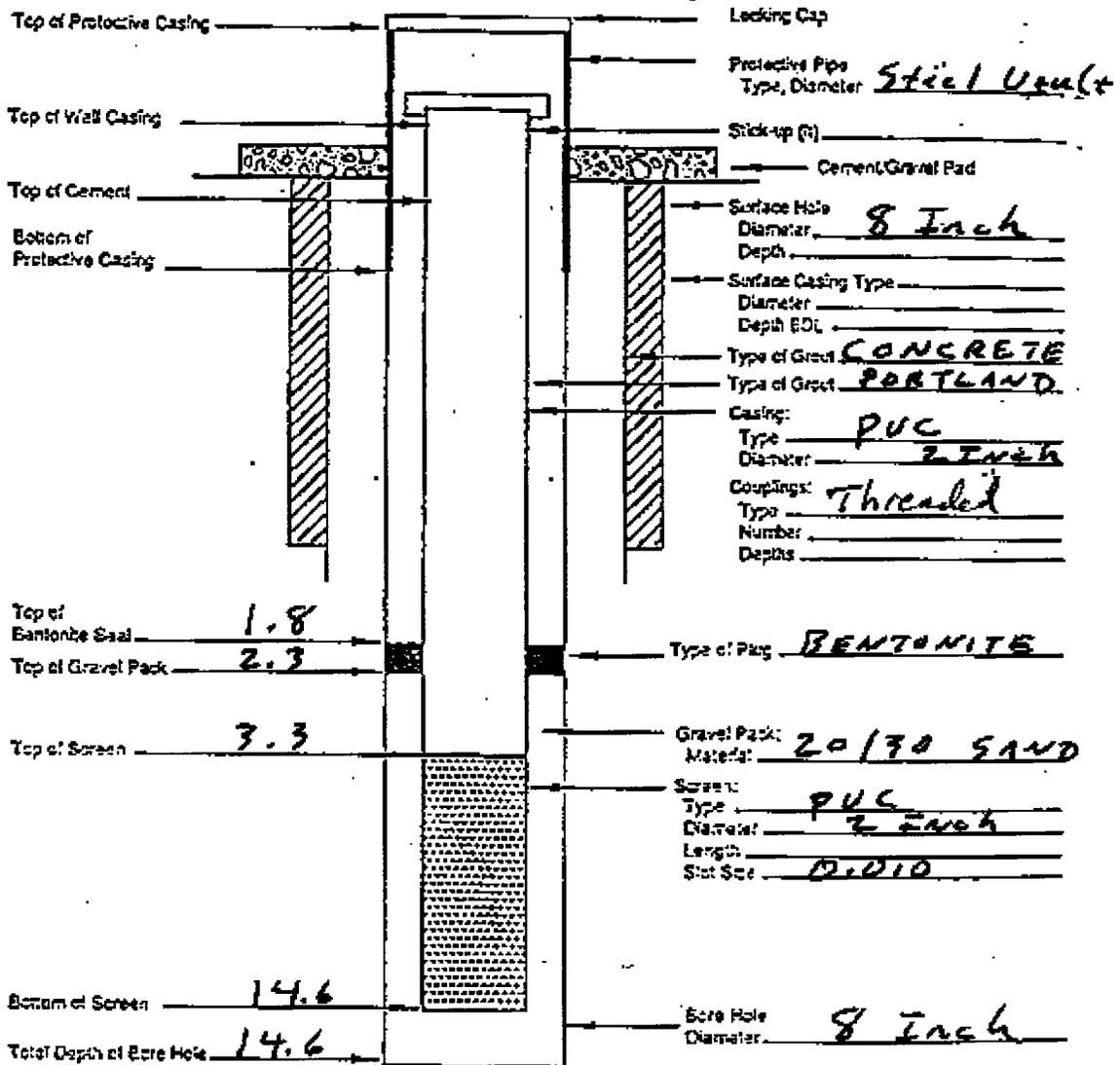
Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Boring No. MW-7  
Page 1 of 1  
Date: 9-26-01  
Day:

Depths in Reference to Ground Level



Recorded By: M. Ingham

Date: 9-26-01

Reviewed By: \_\_\_\_\_  
Quality Control Representative

Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Development Record

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. mw-7  
Page      of       
Date: 9/26/01  
Day: Wednesday

Borehole Diameter 4 in                      Static Water Level 4.4'  
Well Diameter 2 in                              Casing Volume                       
Well Depth 14.6 ft                              Annual Space Volume                       
Screen Length 11.3 ft                           Total Volume                     

     Bailer         Submersible Pump                           Surge Block  
 Centrifugal Pump                                   Manual Piston Pump                           Other

Date 9/26/01  
Time Start 1630                              Flow Rate 2.5 GPM  
Time End 1640                              Total Volume Discharged 2.5 gal

	START	ENDING	TEST
Time	1630		
Conductivity	700		
PH	6.39		
Temperature	25.6		
Turbidity	over limit		

Start dark brown                              Time 1630  
Midpoint light brown                              Time 1635  
End clear    Time 1640  
Photograph Taken      Yes  No

Recorded By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Quality Control Representative

 Ellis Environmental Group, LC	<b>Monitor Well Water Level Measurements</b>	Southern Division Naval Facilities Engineering Command
Contract Number : N62467-01-C-8826	Mayport Naval Station Mayport, Florida	Top of Well Casing _____ Ground Surface _____ Page <u>2</u> of <u>2</u> Date: <u>9/27/01</u> Day: _____

DTP

Well	Date	Time	Well Length	Well Depth	Depth to Water	Comments
MW-4	9/27/01	1233		NC	2.47	Site 1343
MW-5	9/27/01	1234		None	3.55	Site 1343
MW-6	9/27/01	1235		None	3.37	Site 1343
MW-7	9/27/01	1236		None	3.49	Site 1343
MW-1	9/27/01	1630		None	3.54	Site 1343
MW-2	9/27/01	1631		None	3.6	Site 1343
MW-3	9/27/01	1632		None	3.18	Site 1343
MW-4	9/27/01	1633		NC	2.68	Site 1343
MW-5	9/27/01	1634		None	3.55	Site 1343
MW-6	9/27/01	1635		None	3.42	Site 1343
MW-7	9/27/01	1636		None	3.51	Site 1343

Recorded By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Quality Control Representative



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-1  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9/28/01  
Day: Friday

Well Depth 13.54 Well Casing Diameter 2  
Boring Diameter 8 Annular Space Length \_\_\_\_\_  
Time \_\_\_\_\_ Stickup \_\_\_\_\_

Held \_\_\_\_\_ Casing Length \_\_\_\_\_  
Cut \_\_\_\_\_ DTW Top of Casing \_\_\_\_\_  
DTW 3.38 Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) Bailer

= 0.59  
x 10.16  
= 5.9944  
= 0.1632  
x 10.16  
= 1.658  
= 7.6525  
x 3 to 5  
= 23 to 38.25

	Start	Stop	Start	Stop	Start	Stop
Time	8:30	9:25	9:40			
PH	7.19	7.30	7.37			
Conductivity	600	600	600			
Temp. (°C)	25.8	26.2	26.2			
Turbidity	1.7	5.1	3.6			
Vol. Purged	0	20	25			

Total Volume Purged 25 gallons  
Sample Time/Date 9/28/01 940 Sample Number MW-1

Site 1343

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. nw-2

Page of

Date: 9/28/01

Day: Friday

Well Depth 13.52  
Boring Diameter 8  
Time

Well Casing Diameter 2  
Annular Space Length  
Stickup

Held  
Cut  
DTW 3.40 Top of Casing

Casing Length  
DTW Top of Casing  
Column of Water in Well

Gallons per foot of A.S. (from chart)  
Column of Water or length of A.S (whichever is less)  
Volume of Annular Space  
Gallons per foot of Casing  
Column of Water  
Volume of Casing  
Total Volume (Volume of A.S. + Volume of Casing)  
Number of Volumes to be Excavated  
Total Volume to be Excavated  
Method of Purging (pump, bailer, etc.) Bailer

= 0.59  
x 10.12  
= 5.97  
= 0.1632  
x 10.12  
= 1.652  
= 7.6216  
x 3 to 5  
= 22.86 to 38.11

	Start	1000	500	250	Final
Time	900	925	955	1000	1000
PH	6.47	6.11	6.26	6.18	6.18
Conductivity	600	600	560	560	560
Temp. (°C)	26.6	26.3	26.5	26.5	26.5
Turbidity	over limit	80	40	40	40
Vol. Purged	0	10	20	25	25

Total Volume Purged 25 gallons

Sample Time/Date 9/28/01 1000 Sample Number nw-2

Site 1343

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis Environmental Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-3  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9/28/01  
Day: Friday

Well Depth 13.57 Well Casing Diameter 2  
Boring Diameter 8 Annular Space Length \_\_\_\_\_  
Time \_\_\_\_\_ Stickup \_\_\_\_\_

Held \_\_\_\_\_ Casing Length \_\_\_\_\_  
Cut \_\_\_\_\_ DTW Top of Casing \_\_\_\_\_  
DTW 3.02 Top of Casing \_\_\_\_\_ Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart)	= <u>0.59</u>
Column of Water or length of A.S (whichever is less)	x <u>10.55</u>
Volume of Annular Space	= <u>6.245</u>
Gallons per foot of Casing	= <u>0.1632</u>
Column of Water	x <u>10.55</u>
Volume of Casing	= <u>1.7218</u>
Total Volume (Volume of A.S. + Volume of Casing)	= <u>7.95</u>
Number of Volumes to be Excavated	x <u>3</u> to <u>5</u>
Total Volume to be Excavated	= <u>23.84</u> to <u>39.75</u>
Method of Purging (pump, bailer, etc.) <u>Bailer</u>	

	Start	Mid	Mid	Mid	End
Time	1025	1100	1110		1110
PH	7.61	7.56	7.45		7.45
Conductivity	500	700	700		700
Temp. (°C)	25.4	25.0	25.0		25.0
Turbidity	5.0	1.2	1.1		1.1
Vol. Purged	0	25	30		30

Total Volume Purged 30 gallons  
Sample Time/Date 9/28/01 1111 Sample Number MW-3

Site 1343

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-4  
Page \_\_\_\_\_ of \_\_\_\_\_  
Date: 9/28/01  
Day: Friday

Well Depth 8.23  
Boring Diameter 2  
Time \_\_\_\_\_

Well Casing Diameter 1/2"  
Annular Space Length \_\_\_\_\_  
Stickup \_\_\_\_\_

Held \_\_\_\_\_  
Cut \_\_\_\_\_  
DTW 2.57 Top of Casing

Casing Length \_\_\_\_\_  
DTW Top of Casing \_\_\_\_\_  
Column of Water in Well \_\_\_\_\_

Gallons per foot of A.S. (from chart) \_\_\_\_\_  
Column of Water or length of A.S (whichever is less) \_\_\_\_\_  
Volume of Annular Space \_\_\_\_\_  
Gallons per foot of Casing \_\_\_\_\_  
Column of Water \_\_\_\_\_  
Volume of Casing \_\_\_\_\_  
Total Volume (Volume of A.S. + Volume of Casing) \_\_\_\_\_  
Number of Volumes to be Excavated \_\_\_\_\_  
Total Volume to be Excavated \_\_\_\_\_  
Method of Purging (pump, bailer, etc.) B. Pump

$$\begin{array}{r}
 = \underline{0.1632} \\
 \times \underline{5.72} \\
 = \underline{0.9335} \\
 = \underline{0.01} \\
 \times \underline{5.72} \\
 = \underline{0.0572} \\
 = \underline{0.9907} \\
 \times \underline{3} \quad \text{to} \quad \underline{5} \\
 = \underline{2.97} \quad \text{to} \quad \underline{4.95}
 \end{array}$$

	Start	Mid	Final	Notes	Final
Time	1105	1120	1130		1130
PH	6.86	7.12	7.34		7.34
Conductivity	1000	910	950		950
Temp. (°C)	25.4	26.5	26.0		26.0
Turbidity	120	16	9.3		9.3
Vol. Purged		3	6		6

Total Volume Purged 6 gallons

Sample Time/Date 9/28/01 1130 Sample Number MW-4

Site 1343

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-5  
Page      of       
Date:       
Day:     

Well Depth 14.25 Well Casing Diameter 2  
Boring Diameter 8 Annular Space Length       
Time      Stickup     

Hold      Casing Length       
Cut      DTW Top of Casing       
DTW 3.41 Top of Casing Column of Water in Well     

Gallons per foot of A.S. (from chart)	= <u>0.54</u>
Column of Water or length of A.S (whichever is less)	x <u>10.84</u>
Volume of Annular Space	= <u>6.356</u>
Gallons per foot of Casing	= <u>0.1632</u>
Column of Water	x <u>10.84</u>
Volume of Casing	= <u>1.769</u>
Total Volume (Volume of A.S. + Volume of Casing)	= <u>8.125</u>
Number of Volumes to be Excavated	x <u>3</u> to <u>5</u>
Total Volume to be Excavated	= <u>24.5</u> to <u>40.82</u>
Method of Purging (pump, bailer, etc.) <u>Bailer</u>	

	Start	Mid	End	Start	End
Time	910	920	<del>950</del>	1000	1020 1030
PH	5.58	5.66		7.37	7.5 7.58
Conductivity	750	750	<del>550</del>	710	710 710
Temp. (°C)	26.5	26.7	<del>26.5</del>	26.8	26.7 26.5
Turbidity	350	650	<del>60</del>	33	<del>450</del> 53
Vol. Purged	0	5		15	20 25

Total Volume Purged 25 gallons  
Sample Time/Date 9/28/01 1030 Sample Number MW-5

Site 1343

Recorded By:      Date:       
Reviewed By:      Date:



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-6 (site 1343)  
Page      of       
Date: 9/28/01  
Day: Friday

Well Depth 13.5  
Boring Diameter 8  
Time     

Well Casing Diameter 2  
Annular Space Length       
Stickup     

Held       
Cut       
DTW 2.85 Top of Casing

Casing Length       
DTW Top of Casing       
Column of Water in Well     

Gallons per foot of A.S. (from chart)  
Column of Water or length of A.S (whichever is less)  
Volume of Annular Space  
Gallons per foot of Casing  
Column of Water  
Volume of Casing  
Total Volume (Volume of A.S. + Volume of Casing)  
Number of Volumes to be Excavated  
Total Volume to be Excavated  
Method of Purging (pump, bailer, etc.) Bailer

$$\begin{aligned}
 &= \frac{0.59}{10.65} \\
 &= 0.2835 \\
 &= 0.1632 \\
 &= \frac{1.738}{8.02} \\
 &= 3 \text{ to } 5 \\
 &= 24.06 \text{ to } 40.1
 \end{aligned}$$

	Start	Mid	End	Total	Remarks
Time	8:25	1040	1045		1045
PH	7.20	7.38	7.40		7.40
Conductivity	950	1000	1000		1000
Temp. (°C)	26.2	26.0	25.0		25.0
Turbidity	100	31	30		30
Vol. Purged		20	25		25

Total Volume Purged 25 gallons

Sample Time/Date 9/28/01 1045 Sample Number MW-6

Site 1343

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



Ellis  
Environmental  
Group, LC

## Well Sampling Data Form

Southern Division  
Naval Facilities Engineering  
Command

Contract Number :  
N62467-01-C-8826

Mayport Naval Station  
Mayport, Florida

Well No. MW-7  
Page      of       
Date: 9/28/01  
Day: Friday

Well Depth 14.04  
Boring Diameter 8  
Time     

Well Casing Diameter 2  
Annular Space Length       
Stickup     

Held       
Cut       
DTW 3.30 Top of Casing     

Casing Length       
DTW Top of Casing       
Column of Water in Well     

Gallons per foot of A.S. (from chart)  
Column of Water or length of A.S. (whichever is less)  
Volume of Annular Space  
Gallons per foot of Casing  
Column of Water  
Volume of Casing  
Total Volume (Volume of A.S. + Volume of Casing)  
Number of Volumes to be Excavated  
Total Volume to be Excavated  
Method of Purging (pump, bailer, etc.) Bailer

= 0.59  
x 10.74  
= 6.3366  
= 0.1632  
x 10.74  
= 1.7528  
= 8.089  
x 3 to 5  
= 24.27 to 40.45

	Start	12:30	1300	1330	End
Time	1200	12:30	1300	1330	1330
PH	7.69	7.37	7.07	7.13	7.13
Conductivity	800	750	750	750	750
Temp. (°C)	25.5	25.2	24.9	25.0	25.0
Turbidity	90	22	40	20	20
Vol. Purged	0	10	20	30	30

Total Volume Purged 30 gallons  
Sample Time/Date 9/28/01 1330 Sample Number MW-7

Site 1343

Sample may have been labeled 1230 instead of 1330

Recorded By: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_



## **ANALYTICAL REPORT**

### **Submission #: 0109066**

This report contains 17 pages. For any additional information please contact Joe Vondrick (Project Manager) at 386-672-5668 extension 304

Thank you for this opportunity to be of service.

### **THIS REPORT MEETS NELAC STANDARDS**

**Data Accuracy & Uncertainty:** Analyses are performed with method required calibration and QA/QC samples whenever applicable. Method performance is established using the calibration and QA/QC samples. Method performance and Quality Control data establish the validity & certainty of the reported sample results. This data is provided along with the sample results, when requested. The applicable method calibration and QA/QC data ascertain data accuracy & certainty.

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## CASE NARRATIVE

**LABORATORY:** ELAB, Inc.  
**SUBMISSION NUMBER:** 0109066  
**DATE RECEIVED:** 09/06/2001  
**DATE REPORTED:** 09/20/2001  
**PROJECT NAME:** Ellis Env. Mayport Site 1343

### I. Sample Receiving Activity

The samples from Mayport were picked up by Elab Courier at the Harding /ESE office in Jacksonville. The samples on the COC for rush turnaround were reported in a separate submission. The soil and QC samples are reported with this package.

### II. Sample Analysis

The samples were analyzed according to the method specified on the report. The volatiles in soils were analyzed method 8260 to meet the lower detection limits.

### III. Data/Report

The data are reported according to the methodology specified.

### IV. Quality Control

The QC data were generally within control limits.

PREPARED BY:

  
Joseph J. Vondrick, Project Manager

DATE:

9-21-01

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 1

Submission Number: 10900066 Client's P.O. Number: TASK #2  
 Date Received: 09/06/01 Project Number: 53908-02  
 Date Reported: 09/19/01 Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 1 Date Sampled: 09/06/01  
 Client Sample Number: SS-12-2-4LO Sample Matrix: SOLID  
 Sample Description: LO FID

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
SM2540G	PERCENT SOLID	74.6		%	0.0	MMA	09/13/01	
	<u>PETROLEUM RESIDUAL ORGANICS</u>							
FL-PRO	PETROLEUM RESIDUAL ORGANICS	6.7	U	mg/kg	6.7	KHA	09/13/01	09/10/01
	<u>POLYNUCLEAR AROMATIC HYDROCARBONS</u>							
8310	ACENAPHTHENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	ACENAPHTHYLENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	ANTHRACENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	BENZO (A) ANTHRACENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	BENZO (A) PYRENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	BENZO (B) FLUORANTHENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	BENZO (G, H, I) PERYLENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	BENZO (K) FLUORANTHENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	CHRYSENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	DIBENZO (A, H) ANTHRACENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	FLUORANTHENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	FLUORENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	INDENO (1, 2, 3-CD) PYRENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	1-METHYLNAPHTHALENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	2-METHYLNAPHTHALENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	NAPHTHALENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	PHENANTHRENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
8310	PYRENE	44	U	ug/kg	44	LB	09/13/01	09/11/01
	<u>GC/MS VOLATILES (8010-8020 LIST)</u>							
8260	BROMODICHLOROMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	BROMOFORM	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	BROMOMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CARBON TETRACHLORIDE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CHLOROBENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CHLOROFORM	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	2-CHLOROETHYL VINYL ETHER	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	CHLOROMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	

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MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 2

Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/19/01      Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 1      Date Sampled: 09/06/01  
 Client Sample Number: SS-12-2-4LO      Sample Matrix: SOLID  
 Sample Description: LO FID

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<u>GC/MS VOLATILES (8010-8020 LIST)</u>								
8260	DIBROMOCHLOROMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,2-DICHLOROBENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,3-DICHLOROBENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,4-DICHLOROBENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	DICHLORODIFLUOROMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,1-DICHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,2-DICHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,1-DICHLOROETHENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	trans-1,2-DICHLOROETHENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,2-DICHLOROPROPANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	trans-1,3-DICHLOROPROPENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	METHYLENE CHLORIDE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,1,2,2-TETRACHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	TETRACHLOROETHENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,1,1-TRICHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	1,1,2-TRICHLOROETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	TRICHLOROETHENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	TRICHLOROFLUOROMETHANE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	VINYL CHLORIDE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	BENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	ETHYLBENZENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	METHYL TERT-BUTYL ETHER	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	TOLUENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	o-XYLENE	9.6	U	ug/kg	9.6	JSA	09/12/01	
8260	m&p-XYLENES	9.6	U	ug/kg	9.6	JSA	09/12/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 3

Submission Number: 109000066 Client's P.O. Number: TASK #2  
 Date Received: 09/06/01 Project Number: 53908-02  
 Date Reported: 09/19/01 Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 2 Date Sampled: 09/06/01  
 Client Sample Number: SS-2-0-2MED Sample Matrix: SOLID  
 Sample Description: MED FID

Method	Analyte	Result	Q	Units	Reporting		Date	
					Limit	Analyst	Analyzed	Prepared
SM2540G	PERCENT SOLID	89.2		%	0.0	MMA	09/13/01	
	<u>PETROLEUM RESIDUAL ORGANICS</u>							
FL-PRO	PETROLEUM RESIDUAL ORGANICS	150		mg/kg	5.6	KHA	09/13/01	09/10/01
	<u>POLYNUCLEAR AROMATIC HYDROCARBONS</u>							
8310	ACENAPHTHENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	ACENAPHTHYLENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	ANTHRACENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	BENZO (A) ANTHRACENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	BENZO (A) PYRENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	BENZO (B) FLUORANTHENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	BENZO (G, H, I) PERYLENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	BENZO (K) FLUORANTHENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	CHRYSENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	DIBENZO (A, H) ANTHRACENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	FLUORANTHENE	68		ug/kg	37	LB	09/13/01	09/11/01
8310	FLUORENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	INDENO (1, 2, 3-CD) PYRENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	1-METHYLNAPHTHALENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	2-METHYLNAPHTHALENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	NAPHTHALENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	PHENANTHRENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
8310	PYRENE	37	U	ug/kg	37	LB	09/13/01	09/11/01
	<u>GC/MS VOLATILES (8010-8020 LIST)</u>							
8260	BROMODICHLOROMETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	BROMOFORM	21	U	ug/kg	21	JSA	09/12/01	
8260	BROMOMETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	CARBON TETRACHLORIDE	21	U	ug/kg	21	JSA	09/12/01	
8260	CHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	CHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	CHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	2-CHLOROETHYL VINYL ETHER	21	U	ug/kg	21	JSA	09/12/01	
8260	CHLOROMETHANE	21	U	ug/kg	21	JSA	09/12/01	

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MR. MIKE BOLLINGER  
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## ANALYTICAL REPORT

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Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/19/01      Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 2      Date Sampled: 09/06/01  
 Client Sample Number: SS-2-0-2MED      Sample Matrix: SOLID  
 Sample Description: MED FID

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>GC/MS VOLATILES (8010-8020 LIST)</u></b>								
8260	DIBROMOCHLOROMETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,2-DICHLOROBENZENE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,3-DICHLOROBENZENE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,4-DICHLOROBENZENE	21	U	ug/kg	21	JSA	09/12/01	
8260	DICHLORODIFLUOROMETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,1-DICHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,2-DICHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,1-DICHLOROETHENE	21	U	ug/kg	21	JSA	09/12/01	
8260	trans-1,2-DICHLOROETHENE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,2-DICHLOROPROPANE	21	U	ug/kg	21	JSA	09/12/01	
8260	trans-1,3-DICHLOROPROPENE	21	U	ug/kg	21	JSA	09/12/01	
8260	METHYLENE CHLORIDE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,1,2,2-TETRACHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	TETRACHLOROETHENE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,1,1-TRICHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	1,1,2-TRICHLOROETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	TRICHLOROETHENE	21	U	ug/kg	21	JSA	09/12/01	
8260	TRICHLOROFLUOROMETHANE	21	U	ug/kg	21	JSA	09/12/01	
8260	VINYL CHLORIDE	21	U	ug/kg	21	JSA	09/12/01	
8260	BENZENE	21	U	ug/kg	21	JSA	09/12/01	
8260	ETHYLBENZENE	21	U	ug/kg	21	JSA	09/12/01	
8260	METHYL TERT-BUTYL ETHER	21	U	ug/kg	21	JSA	09/12/01	
8260	TOLUENE	21	U	ug/kg	21	JSA	09/12/01	
8260	o-XYLENE	21	U	ug/kg	21	JSA	09/12/01	
8260	m&p-XYLENES	21	U	ug/kg	21	JSA	09/12/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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## ANALYTICAL REPORT

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Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/19/01      Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 3      Date Sampled: 09/06/01  
 Client Sample Number: SS-2-2-4HI      Sample Matrix: SOLID  
 Sample Description: HI FID

Method	Analyte	Result	Q	Units	Reporting		Date	
					Limit	Analyst	Analyzed	Prepared
SM2540G	PERCENT SOLID	82.5		%	0.0	MMA	09/13/01	
	<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>							
FL-PRO	PETROLEUM RESIDUAL ORGANICS	32		mg/kg	6.0	KHA	09/13/01	09/10/01
	<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>							
8310	ACENAPHTHENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	ACENAPHTHYLENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	ANTHRACENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	BENZO (A) ANTHRACENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	BENZO (A) PYRENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	BENZO (B) FLUORANTHENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	BENZO (G, H, I) PERYLENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	BENZO (K) FLUORANTHENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	CHRYSENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	DIBENZO (A, H) ANTHRACENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	FLUORANTHENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	FLUORENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	INDENO (1, 2, 3-CD) PYRENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	1-METHYLNAPHTHALENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	2-METHYLNAPHTHALENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	NAPHTHALENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	PHENANTHRENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
8310	PYRENE	40	U	ug/kg	40	LB	09/13/01	09/11/01
	<b><u>GC/MS VOLATILES (8010-8020 LIST)</u></b>							
8260	BROMODICHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	BROMOFORM	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	BROMOMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	CARBON TETRACHLORIDE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	CHLOROBENZENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	CHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	CHLOROPFORM	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	2-CHLOROETHYL VINYL ETHER	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	CHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	

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## ANALYTICAL REPORT

Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/19/01      Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 3      Date Sampled: 09/06/01  
 Client Sample Number: SS-2-2-4HI      Sample Matrix: SOLID  
 Sample Description: HI FID

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<u>GC/MS VOLATILES (8010-8020 LIST)</u>								
8260	DIBROMOCHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,2-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,3-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,4-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	DICHLORODIFLUOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,1-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,2-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,1-DICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	trans-1,2-DICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,2-DICHLOROPROPANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	trans-1,3-DICHLOROPROPENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	METHYLENE CHLORIDE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,1,2,2-TETRACHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	TETRACHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,1,1-TRICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	1,1,2-TRICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	TRICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	TRICHLOROFLUOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	VINYL CHLORIDE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	BENZENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	ETHYLBENZENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	METHYL TERT-BUTYL ETHER	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	TOLUENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	o-XYLENE	7.8	U	ug/kg	7.8	JSA	09/12/01	
8260	m&p-XYLENES	7.8	U	ug/kg	7.8	JSA	09/12/01	

## Data Qualifier Code Key:

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## ANALYTICAL REPORT

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Submission Number: 109000066 Client's P.O. Number: TASK #2  
 Date Received: 09/06/01 Project Number: 53908-02  
 Date Reported: 09/19/01 Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 4 Date Sampled: 09/06/01  
 Client Sample Number: DUP-1 Sample Matrix: SOLID  
 Sample Description:

Method	Analyte	Result	Q	Units	Reporting		Date	
					Limit	Analyst	Analyzed	Prepared
SM2540G	PERCENT SOLID	86.9		%	0.0	MMA	09/13/01	
	<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>							
FL-PRO	PETROLEUM RESIDUAL ORGANICS	110		mg/kg	5.8	KHA	09/13/01	09/10/01
	<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>							
8310	ACENAPHTHENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	ACENAPHTHYLENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	ANTHRACENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	BENZO (A) ANTHRACENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	BENZO (A) PYRENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	BENZO (B) FLUORANTHENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	BENZO (G, H, I) PERYLENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	BENZO (K) FLUORANTHENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	CHRYSENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	DIBENZO (A, H) ANTHRACENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	FLUORANTHENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	FLUORENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	INDENO (1, 2, 3-CD) PYRENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	1-METHYLNAPHTHALENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	2-METHYLNAPHTHALENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	NAPHTHALENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	PHENANTHRENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
8310	PYRENE	38	U	ug/kg	38	LB	09/13/01	09/11/01
	<b><u>GC/MS VOLATILES (8010-8020 LIST)</u></b>							
8260	BROMODICHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	BROMOFORM	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	BROMOMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	CARBON TETRACHLORIDE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	CHLOROBENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	CHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	CHLOROFORM	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	2-CHLOROETHYL VINYL ETHER	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	CHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	

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## ANALYTICAL REPORT

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Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/19/01      Project Name: MAYPORT - SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 4      Date Sampled: 09/06/01  
 Client Sample Number: DUP-1      Sample Matrix: SOLID  
 Sample Description:

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<u>GC/MS VOLATILES (8010-8020 LIST)</u>								
8260	DIBROMOCHLOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,2-DICHLOROBENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,3-DICHLOROBENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,4-DICHLOROBENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	DICHLORODIFLUOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,1-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,2-DICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,1-DICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	trans-1,2-DICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,2-DICHLOROPROPANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	trans-1,3-DICHLOROPROPENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	METHYLENE CHLORIDE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,1,2,2-TETRACHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	TETRACHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,1,1-TRICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	1,1,2-TRICHLOROETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	TRICHLOROETHENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	TRICHLOROFLUOROMETHANE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	VINYL CHLORIDE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	BENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	ETHYLBENZENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	METHYL TERT-BUTYL ETHER	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	TOLUENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	o-XYLENE	7.8	U	ug/kg	7.8	JSA	09/13/01	
8260	m&p-XYLENES	7.8	U	ug/kg	7.8	JSA	09/13/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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## ANALYTICAL REPORT

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Submission Number: 10900066 Client's P.O. Number: TASK #2  
 Date Received: 09/06/01 Project Number:  
 Date Reported: 09/19/01 Project Name:  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 5 Date Sampled: 09/06/01  
 Client Sample Number: TRIP BLANK Sample Matrix: GROUND WATER  
 Sample Description:

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>GC VOLATILE ORGANICS (FULL LIST)</u></b>								
8021	BENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	BROMOBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	BROMOCHLOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	09/14/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	n-BUTYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	sec-BUTYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	tert-BUTYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	09/14/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	2-CHLOROTOLUENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	4-CHLOROTOLUENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	DIBROMOCHLOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2-DIBROMO-3-CHLOROPROPANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2-DIBROMOETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	DIBROMOMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	cis-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,3-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	09/14/01	

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Puerto Rico: Office (787) 787-0866 • Cellular (787) 390-3505 or (787) 399-4683

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number:  
 Date Reported: 09/19/01      Project Name:  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 5      Date Sampled: 09/06/01  
 Client Sample Number: TRIP BLANK      Sample Matrix: GROUND WATER  
 Sample Description:

Method	Analyte	Result	Q	Units	Reporting		Date	Prepared
					Limit	Analyst	Analyzed	
<b><u>GC VOLATILE ORGANICS (FULL LIST)</u></b>								
8021	2,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1-DICHLOROPROPENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	cis-1,3-DICHLOROPROPENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	trans-1,3-DICHLOROPROPENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	HEXACHLOROBUTADIENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	ISOPROPYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	4-ISOPROPYLTOLUENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	NAPHTHALENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	PROPYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	STYRENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1,1,2-TETRACHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1,2,2-TETRACHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2,3-TRICHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2,4-TRICHLOROBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2,3-TRICHLOROPROPANE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,2,4-TRIMETHYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	1,3,5-TRIMETHYLBENZENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	09/14/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	09/14/01	

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MR. MIKE BOLLINGER  
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 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000066      Client's P.O. Number: TASK #2  
 Date Received: 09/06/01      Project Number:  
 Date Reported: 09/19/01      Project Name:  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109066 5      Date Sampled: 09/06/01  
 Client Sample Number: TRIP BLANK      Sample Matrix: GROUND WATER  
 Sample Description:

Method	Analyte	Result	Q	Units	Reporting		Date	
					Limit	Analyst	Analyzed	Prepared

GC VOLATILE ORGANICS (FULL LIST)

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

CERTIFICATION: All analytical data reported above were obtained using the specified methods and were validated by our laboratory quality control system. This laboratory follows an approved quality assurance program.

Respectfully submitted:

Paul K. Canevaro  
 Laboratory Director



### Aqueous Matrix Spike/Matrix Spike Duplicate Recovery

#### EPA Method 502.2/601/602/8021

Sample ID                      LFB/CC                      Analysis Date:                      09/14/01  
 Batch ID :                      WVGG01091401                     

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. LFB (ug/L)	%REC
1,1-Dichloroethene 22-169	10.0	ND	11.7	117
Trichloroethene 63-145	10.0	ND	9.79	97.9
Chlorobenzene 61-134	10.0	ND	10.2	102
Toluene 62-135	10.0	ND	9.90	99.0
Benzene 60-130	10.0	ND	9.60	96.0

Volatiles:     0     out of     5     ;outside QC limits

Sample ID 01-09-224-9 20ug/L ms 601/602 5mL Analysis Date:                      09/15/01

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. MS (ug/L)	%REC	Conc. MSD (ug/L)	%REC	RPD
1,1-Dichloroethene 22-169	20.0	ND	13.0	65.0	13.5	67.5	3.77
Trichloroethene 63-145	20.0	ND	19.2	96.0	19.1	95.5	0.52
Chlorobenzene 61-134	20.0	ND	20.7	104	20.4	102	1.46
Toluene 62-135	20.0	ND	18.7	93.5	19.1	95.5	2.12
Benzene 80-130	20.0	ND	19.6	98.0	19.9	99.5	1.52

Volatiles:     0     out of    15    ;outside QC limits

Comment: \_\_\_\_\_  
 \_\_\_\_\_



**Soil Matrix Spike/Matrix Spike Duplicate Recovery**

**EPA Method 8260B**

Batch ID SVGA01091201  
Sample ID LFB

Analysis Date: 09/12/01

Compound <i>Laboratory Recovery Limit</i>	Conc. Spike Added (µg/kg)	Sample	Conc. LFB (µg/kg)	%REC
1,1-Dichloroethene 46 - 148	40.0	ND	36.76	91.9
Trichloroethene 67 - 145	40.0	ND	40.89	102
Chlorobenzene 49 - 133	40.0	ND	43.91	110
Toluene 31 - 163	40.0	ND	39.48	98.7
Benzene 52 - 142	40.0	ND	39.48	98.7

Volatiles: 0 out of 5 ;outside QC limits

Sample ID 01-09-213-1+MS 5035/8260 5.07g

Analysis Date: 09/12/01

Compound <i>Laboratory Recovery Limit</i>	Conc. Spike Added (µg/kg)	Sample	Conc. MS (µg/kg)	%REC	Conc. MSD (µg/kg)	%REC	RPD
1,1-Dichloroethene 24 - 162	40.0	ND	44.78	112	41.34	103	7.99
Trichloroethene 42 - 162	40.0	ND	39.60	99.0	39.69	99.2	0.23
Chlorobenzene 48 - 126	40.0	ND	39.34	98.4	40.05	100	1.79
Toluene 14 - 206	40.0	ND	41.03	103	41.95	105	2.22
Benzene 60 - 138	40.0	ND	39.92	100	38.67	96.7	3.18

Volatiles: 0 out of 15 ;outside QC limits

Comments: \_\_\_\_\_  
\_\_\_\_\_

V:\Public\Volatile\8260sms.xls



Batch ID: SSVL01091108  
 Extraction Date: 9/11/01  
 Analysis Date: 9/13/01  
 Sample ID: LFB

**Polynuclear Aromatic Hydrocarbons**  
**EPA Method 8310**

DATA INPUT FOR SPIKE CALCULATIONS

	LCS	MS	MSD
Weight	30.00	30.02	30.66
% Solid	100.00	74.60	74.60
<i>Naphthalene</i> ug/ml	52.72	41.40	36.27
<i>Acenaphthylene</i> ug/ml	57.17	47.04	41.66
<i>Acenaphthene</i> ug/ml	70.68	58.22	53.93
<i>Fluorene</i> ug/ml	2.94	2.54	2.75
<i>Phenanthrene</i> ug/ml	26.77	21.23	18.18
<i>Anthracene</i> ug/ml	2.44	1.77	1.55
<i>Pyrene</i> ug/ml	11.18	8.91	8.00

Compound	Conc. Spike Added (ug/kg)	BLANK Result (ug/kg)	Conc. Spike (ug/kg)	% REC
<i>Naphthalene</i>				
42 (66-134)	1667	ND	1757	105
<i>Acenaphthylene</i>				
38 (64-136)	1667	ND	1906	114
<i>Acenaphthene</i>				
28 (51-149)	1667	ND	2356	141
<i>Fluorene</i>				
40 (46-154)	83.3	ND	97.83	117
<i>Phenanthrene</i>				
42 (63-137)	833	ND	892.4	107
<i>Anthracene</i>				
31 (36-164)	83.3	ND	81.30	97.6
<i>Pyrene</i>				
38 (58-142)	333	ND	372.6	112

0 out of 7 outside QC Limits

Submission No. 0108880-6

MSMSD

DATE ANALYZED: 9/5/01

Compound	Conc. Spike Added (ug/kg)	Sample Result (ug/kg)	Conc. MS (ug/kg)	% REC	Conc. MSD (ug/kg)	% REC	%RPD
<i>Naphthalene</i>							
42 (66-134)	1667	ND	1849	111	1586	95.1	15
<i>Acenaphthylene</i>							
38 (64-136)	1667	ND	2101	126	1821	109	14
<i>Acenaphthene</i>							
28 (51-149)	1667	ND	2600	156	2358	141	9.7
<i>Fluorene</i>							
40 (46-154)	83.3	ND	113.2	136	120.3	144	6.0
<i>Phenanthrene</i>							
42 (63-137)	833	ND	947.8	114	794.8	95.4	18
<i>Anthracene</i>							
31 (36-164)	83.3	ND	79.21	95.1	67.77	81.3	16
<i>Pyrene</i>							
38 (58-142)	333	ND	397.9	119	349.8	105	13

1 out of 14 outside QC Limits

Comments: \*RPD IS FOR INTERNAL PURPOSES ONLY.

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## FL PRO SOLID SUMMARY

### Lab Fortified Blank Recovery

Batch ID:SSVL01091007

Sequence Date: 9/12/01

Sample I.D.	% Recovery Limits (49-149)	% RPD (25)	Comment
LFB	119		

### Matrix Spike / Matrix Spike Duplicate Recovery

Sample I.D. 09-066-1

Compound	Conc. Spike (mg/kg)	Conc. Sample (mg/kg)	MS Result (mg/kg)	Rec.	MSD Result (mg/kg)	% Rec.	RPD %	% Rec Limits	RPD Limits
Total Petroleum Organics	202	N.D.	181	89.7	171	84.5	5.7	49-149	40

Comments:

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**Elab, Inc.**  
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# CHAIN OF CUSTODY RECORD

No. E 47290

Page 1 of 1

(INSTRUCTIONS ON BACK OF THIS FORM)

FOR LAB USE ONLY

Condition of Contents: \_\_\_\_\_

FOR LAB USE ONLY

Submission No. *DA-0160*

Temp. of Contents: \_\_\_\_\_ °C (or Received on Ice, ROI)

Condition of Seals: \_\_\_\_\_

1. Client: (Company or Individual)

*Harding ESE*

Address:

*2533 Groer Rd Suite 6*

Phone: (850)

*656-1293*

City *Tallahassee*

State *FL*

Zip Code *32308*

Fax: (850) *656-3386*

2. Report to: (if different from above)

*Same as above*

Address:

Phone: ( )

City

State

Zip Code

Fax: ( )

3. Client Project Name:

*Mayport - Site 1343*

Water Sample

Codes (for Item 13)

Container Codes

(for Item 16)

DW = Drinking Water

GW = Ground Water

SW = Surface Water

PW = Processed Water

WW = Waste Water

V = VOA vial

G = glass

P = plastic

M = micro bag cup

O = other

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56.

*Analyses Requested*  
*8270 - PAH*  
*8281 - VOC*  
*FL-PRO*  
*8310 - PAH*

18. Report Type:

- Routine
- Standard QC
- Datapackage

19. Turnaround Time

- Standard
- Rush: *9/10/01*

Preservative Codes  
(for Item 15)

- C - Cool Only
- H - Hydrochloric Acid
- M - Monochloroacetic Acid
- N - Nitric Acid
- OH - Sodium Hydroxide
- S - Sulfuric Acid
- T - Sodium Thiosulfate

Item	9. Sample ID or No.	10. Sample Description	11.		12.			13.			14. No. of Containers	15. Preservatives				16. Containers				20. REMARK	LAB USE ONLY LAB SAMPLE NO.
			Date	Time	Comp.	Grab	Water (Codes)	Air	Soil	Sludge		Other	C	C	C	C	1	1	1		
1	SS-12-2-4LO	LO FID	9/6/01	930		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		3	1	1	1						Standard Turnaround	
2	SS-2-0-2MED	MED FID	9/6/01	950		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		3	1	1	1						Standard Turnaround	
3	SS-2-2-4HI	HI FID	9/6/01	1010		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		3	1	1	1						Standard Turnaround	
4	DUP-1		9/6/01	1000		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		3	1	1	1						Standard Turnaround	
5	PZ-3		9/6/01	1030		<input checked="" type="checkbox"/>	GW				1				1					Rush Turnaround	
6	PZ-2		9/6/01	1050		<input checked="" type="checkbox"/>	GW				1				1					Rush Turnaround	
7	PZ-1		9/6/01	1110		<input checked="" type="checkbox"/>	GW				1				1					Rush Turnaround	
8	Trip Blanks		9/6/01																		
9																					
10																					

21. RELINQUISHED BY	DATE	TIME	22. RECEIVED BY	DATE	TIME	FOR LAB USE ONLY	
<i>[Signature]</i>	9/6/01	1345	<i>[Signature]</i>	9/6/01	1345	Sampling Fee: _____	Hrs.
<i>[Signature]</i>	9/6/01	1435	<i>M. Hallbreath</i>	9/6/01	1435	Equipment Rental Fee: _____	
<i>M. Hallbreath</i>	9/6/01	16:00	<i>[Signature]</i>	9/6/01	16:00	Profile No.:	Quote No.:

DISTRIBUTION: White with report; Blue, Green, Yellow to labs; Gold to submitter

Revised: 1/99



## **ANALYTICAL REPORT**

### **Submission #: 0109064**

This report contains 6 pages. For any additional information please contact Joe Vondrick (Project Manager) at 386-672-5668 extension 304

Thank you for this opportunity to be of service.

### **THIS REPORT MEETS NELAC STANDARDS**

**Data Accuracy & Uncertainty:** Analyses are performed with method required calibration and QA/QC samples whenever applicable. Method performance is established using the calibration and QA/QC samples. Method performance and Quality Control data establish the validity & certainty of the reported sample results. This data is provided along with the sample results, when requested. The applicable method calibration and QA/QC data ascertain data accuracy & certainty.

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MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



ANALYTICAL REPORT

Submission Number: 109000064      Client's P.O. Number:  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/11/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109064 1      Date Sampled: 09/06/01  
 Client Sample Number: 1      Sample Matrix: GROUND WATER  
 Sample Description: PZ-3

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	09/08/01	09/06/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	09/08/01	09/06/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	09/08/01	09/06/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01

Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Lab Sample Number: 0109064 2      Date Sampled: 09/06/01  
 Client Sample Number: 2      Sample Matrix: GROUND WATER  
 Sample Description: PZ-2

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 2

Submission Number: 109000064      Client's P.O. Number:  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/11/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109064 2      Date Sampled: 09/06/01  
 Client Sample Number: 2      Sample Matrix: GROUND WATER  
 Sample Description: PZ-2

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	ACENAPHTHYLENE	3.4		ug/L	2.0	LB	09/08/01	09/06/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO(A)ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO(A)PYRENE	0.55		ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO(B)FLUORANTHENE	0.37		ug/L	0.10	LB	09/08/01	09/06/01
8310	BENZO(G,H,I)PERYLENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO(K)FLUORANTHENE	0.11		ug/L	0.10	LB	09/08/01	09/06/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	DIBENZO(A,H)ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	INDENO(1,2,3-CD)PYRENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	1-METHYLNAPHTHALENE	55		ug/L	1.5	LB	09/08/01	09/06/01
8310	2-METHYLNAPHTHALENE	64		ug/L	1.5	LB	09/08/01	09/06/01
8310	NAPHTHALENE	36		ug/L	1.0	LB	09/08/01	09/06/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

Lab Sample Number: 0109064 3      Date Sampled: 09/06/01  
 Client Sample Number: 3      Sample Matrix: GROUND WATER  
 Sample Description: PZ-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								

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MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 3

Submission Number: 109000064      Client's P.O. Number:  
 Date Received: 09/06/01      Project Number: 53908-02  
 Date Reported: 09/11/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109064 3      Date Sampled: 09/06/01  
 Client Sample Number: 3      Sample Matrix: GROUND WATER  
 Sample Description: PZ-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	ACENAPHTHYLENE	2.5		ug/L	2.0	LB	09/08/01	09/06/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO (A) PYRENE	0.34		ug/L	0.20	LB	09/08/01	09/06/01
8310	BENZO (B) FLUORANTHENE	0.28		ug/L	0.10	LB	09/08/01	09/06/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	09/08/01	09/06/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	09/08/01	09/06/01
8310	1-METHYLNAPHTHALENE	57		ug/L	1.5	LB	09/08/01	09/06/01
8310	2-METHYLNAPHTHALENE	81		ug/L	1.5	LB	09/08/01	09/06/01
8310	NAPHTHALENE	20		ug/L	1.0	LB	09/08/01	09/06/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	09/08/01	09/06/01

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

MR. MIKE BOLLINGER  
ELLIS ENVIRONMENTAL GROUP  
304 SW 140TH TERRACE  
GAINESVILLE, FL 32669



**ANALYTICAL REPORT**

Page 4

Submission Number: 109000064      Client's P.O. Number:  
Date Received: 09/06/01      Project Number: 53908-02  
Date Reported: 09/11/01      Project Name: MAYPORT-SITE 1343  
Elab Report Name: Finalnew->Final2.RP1

---

CERTIFICATION: All analytical data reported above were obtained using the specified methods and were validated by our laboratory quality control system. This laboratory follows an approved quality assurance program.

Respectfully submitted:



Paul K. Canevaro  
Laboratory Director



**Polynuclear Aromatic Hydrocarbons**

**EPA Method 8310  
Recovery Data**

Batch ID: WSVL01090604  
 Extraction Date: 9/6/01  
 Analysis Date: 9/7/01  
 Sample ID: LFB

Analyst: LB

Compound		Conc. Spike Added (ug/L)	BLANK Result (ug/L)	Conc. Spike (ug/L)	% REC
%RPD Limit	% REC Limit				
<b>Naphthalene</b>		50.0	ND	43.2	86.4
40	(47-153)				
<b>Acenaphthylene</b>		50.0	ND	47.3	94.6
40	(54-146)				
<b>Acenaphthene</b>		50.0	ND	45.8	91.6
40	(40-160)				
<b>Fluorene</b>		2.50	ND	2.52	101
40	(44-156)				
<b>Phenanthrene</b>		25.0	ND	22.2	88.8
40	(60-140)				
<b>Anthracene</b>		2.50	ND	1.80	72.0
40	(28-172)				
<b>Pyrene</b>		10.0	ND	9.71	97.1
40	(55-145)				

0 out of 7 outside QC Limits

Sample ID: 0109023-1 MS/MSD

Analysis Date: 9/7/01

Compound		Conc. Spike Added (ug/L)	Sample Result (ug/L)	Conc. MS (ug/L)	% REC	Conc. MSD dup (ug/L)	% REC	%RPD
%RPD Limit	% REC Limit							
<b>Naphthalene</b>		50.0	ND	51.1	102	42.7	85.4	18
40	(47-153)							
<b>Acenaphthylene</b>		50.0	ND	57.0	114	46.7	93.4	20
40	(54-146)							
<b>Acenaphthene</b>		50.0	ND	58.8	118	45.7	91.4	25
40	(40-160)							
<b>Fluorene</b>		2.50	ND	3.37	135	2.54	102	28
40	(44-156)							
<b>Phenanthrene</b>		25.0	ND	24.8	99.2	22.1	88.4	12
40	(60-140)							
<b>Anthracene</b>		2.50	ND	2.16	86.4	1.78	71.2	19
40	(28-172)							
<b>Pyrene</b>		10.0	ND	12.4	124	9.83	98.3	23
40	(55-145)							

0 out of 14 outside QC Limits

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 8 East Tower Circle  
 Ormond Beach, FL 32174  
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### CHAIN OF CUSTODY RECORD

No. E **47290**

Page 1 of 1

(INSTRUCTIONS ON BACK OF THIS FORM)

FOR LAB USE ONLY

Condition of Contents: \_\_\_\_\_

FOR LAB USE ONLY

Submission No. **09-064**

Temp. of Contents: \_\_\_\_\_ °C (or Received on Ice, ROI) Condition of Seals: \_\_\_\_\_

1. Client: (Company or Individual)

*Harding ESE*

Address: *2533 Green Rd Suite 6*

Phone: (950) *656-1293*

18. Report Type:

Routine  
 Standard QC  
 Datapackage

City *Tallahassee* State *FL* Zip Code *32308*

Fax: (950) *656-3386*

2. Report to: (if different from above)

*Same as above*

Address: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

19. Turnaround Time

Standard  
 Rush: *9/10/01*

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Fax: ( ) \_\_\_\_\_

3. Client Project Name:

*Mayport - Site 1343*

Water Sample Codes (for Item 13)

Container Codes (for Item 16)

DW = Drinking Water  
 GW = Ground Water  
 SW = Surface Water  
 PW = Processed Water  
 WW = Waste Water

V = VOA vial  
 G = glass  
 P = plastic  
 M = micro bag/cup  
 O = other

14. 15. Preservatives C C C C  
 16. Containers 1 1 1 1

17. Analyses Requested  
*9270-PAH*  
*9281-YOC*  
*FL-PRO*  
*9310-PAH*

Preservative Codes (for Item 15)

C = Cool Only  
 H = Hydrochloric Acid  
 M = Monochloroacetic Acid  
 N = Nitric Acid  
 OH = Sodium Hydroxide  
 S = Sulfuric Acid  
 T = Sodium Thiosulfate

4. Client Project No.: *53908-02*

5. P.O. No.:

6. Custody Seal No.:

7. Sampled By: *ML/PS*

8. Shipping Method: *Cooler - Self pick-up*

Item	9. Sample ID or No.	10. Sample Description	11.		12.		13.						14. No. of Containers	15.				20. REMARK	LAB USE ONLY LAB SAMPLE NO.	
			Date	Time	Comp.	Grab	Water (Codes)	Air	Soil	Sludge	Other	C		C	C	C				
1	SS-12-2-4LO	LO FID	9/6/01	930		α							3	1	1	1			Standard Turnaround	
2	SS-2-0-2MED	MED FID	9/6/01	950		α							3	1	1	1			Standard Turnaround	
3	SS-2-2-4HI	HI FID	9/6/01	1010		α							3	1	1	1			Standard Turnaround	
4	DUP-1		9/6/01	1000		α							3	1	1	1			Standard Turnaround	
5	PZ-3		9/6/01	1030		α	GW						1			1			Rush Turnaround	
6	PZ-2		9/6/01	1050		α	GW						1			1			Rush Turnaround	<i>09-064</i>
7	PZ-1		9/6/01	1110		α	GW						1			1			Rush Turnaround	
8	Trip Blanks		9/6/01																	
9																				
10																				

21. RELINQUISHED BY	DATE	TIME	22. RECEIVED BY	DATE	TIME	FOR LAB USE ONLY
<i>[Signature]</i>	9/6/01	1345	<i>[Signature]</i>	9/6/01	1345	Sampling Fee: _____ Hrs.
<i>[Signature]</i>	9/6/01	1435	<i>M. Hallenath</i>	9/6/01	1435	Equipment Rental Fee: _____
<i>M. Hallenath</i>	9/6/01	16:00				Profile No.: _____ Quote No.: _____



## **ANALYTICAL REPORT**

### **Submission #: 0109791**

This report contains 24 pages. For any additional information please contact Joe Vondrick (Project Manager) at 386-672-5668 extension 304

Thank you for this opportunity to be of service.

### **THIS REPORT MEETS NELAC STANDARDS**

Data Accuracy & Uncertainty: Analyses are performed with method required calibration and QA/QC samples whenever applicable. Method performance is established using the calibration and QA/QC samples. Method performance and Quality Control data establish the validity & certainty of the reported sample results. This data is provided along with the sample results, when requested. The applicable method calibration and QA/QC data ascertain data accuracy & certainty.

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MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Page 1

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 1      Date Sampled: 09/28/01  
 Client Sample Number: MW-1      Sample Matrix: GROUND WATER  
 Sample Description: MW-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.54		mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	

MR. MIKE BOLLINGER  
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 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 1      Date Sampled: 09/28/01  
 Client Sample Number: MW-1      Sample Matrix: GROUND WATER  
 Sample Description: MW-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/01/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/01/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

MR. MIKE BOLLINGER  
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## ANALYTICAL REPORT

Page 3

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 2      Date Sampled: 09/28/01  
 Client Sample Number: MW-2      Sample Matrix: GROUND WATER  
 Sample Description: MW-2

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.10	U	mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLORO BENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	

MR. MIKE BOLLINGER  
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 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 2      Date Sampled: 09/28/01  
 Client Sample Number: MW-2      Sample Matrix: GROUND WATER  
 Sample Description: MW-2

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/01/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/01/01	

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## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 3      Date Sampled: 09/28/01  
 Client Sample Number: MW-5      Sample Matrix: GROUND WATER  
 Sample Description: MW-5

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.32		mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	15		ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/01/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	

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## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 3      Date Sampled: 09/28/01  
 Client Sample Number: MW-5      Sample Matrix: GROUND WATER  
 Sample Description: MW-5

Method	Analyte	Result	Q	Units	Reporting		Date	Prepared
					Limit	Analyst	Analyzed	
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/01/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/01/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/01/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/01/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/01/01	

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MR. MIKE BOLLINGER  
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## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 4      Date Sampled: 09/28/01  
 Client Sample Number: MW-6      Sample Matrix: GROUND WATER  
 Sample Description: MW-6

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	1.8		mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	2.2		ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	4.4		ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	2.6		ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	

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## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 4      Date Sampled: 09/28/01  
 Client Sample Number: MW-6      Sample Matrix: GROUND WATER  
 Sample Description: MW-6

Method	Analyte	Result	Q	Units	Reporting		Date		
					Limit	Analyst	Analyzed	Prepared	
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>									
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME		10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME		10/02/01	

## Data Qualifier Code Key:

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 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 5      Date Sampled: 09/28/01  
 Client Sample Number: MW-3      Sample Matrix: GROUND WATER  
 Sample Description: MW-3

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.10	U	mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 5      Date Sampled: 09/28/01  
 Client Sample Number: MW-3      Sample Matrix: GROUND WATER  
 Sample Description: MW-3

Method	Analyte	Result	Q	Units	Reporting		Date		
					Limit	Analyst	Analyzed	Prepared	
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>									
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME		10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME		10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME		10/02/01	

## Data Qualifier Code Key:

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## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 6      Date Sampled: 09/28/01  
 Client Sample Number: MW-4      Sample Matrix: GROUND WATER  
 Sample Description: MW-4

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.10	U	mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLORO BENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	

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 304 SW 140TH TERRACE  
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## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 6      Date Sampled: 09/28/01  
 Client Sample Number: MW-4      Sample Matrix: GROUND WATER  
 Sample Description: MW-4

Method	Analyte	Result	Q	Units	Reporting		Date	Prepared
					Limit	Analyst	Analyzed	
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/02/01	

## Data Qualifier Code Key:

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MR. MIKE BOLLINGER  
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 304 SW 140TH TERRACE  
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## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 7      Date Sampled: 09/28/01  
 Client Sample Number: MW-7      Sample Matrix: GROUND WATER  
 Sample Description: MW-7

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.10	U	mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	

MR. MIKE BOLLINGER  
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 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 7      Date Sampled: 09/28/01  
 Client Sample Number: MW-7      Sample Matrix: GROUND WATER  
 Sample Description: MW-7

Method	Analyte	Result	Q	Units	Reporting		Date	Prepared
					Limit	Analyst	Analyzed	
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROFUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/02/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 8      Date Sampled: 09/28/01  
 Client Sample Number: DUP-1      Sample Matrix: GROUND WATER  
 Sample Description: DUP-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>PETROLEUM RESIDUAL ORGANICS</u></b>								
FL-PRO	PETROLEUM RESIDUAL ORGANICS	0.10	U	mg/L	0.10	KHA	10/09/01	10/05/01
6010	LEAD (TOTAL)	5.0	U	ug/L	5.0	JAS	10/05/01	
<b><u>POLYNUCLEAR AROMATIC HYDROCARBONS</u></b>								
8310	ACENAPHTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	ACENAPHTHYLENE	2.0	U	ug/L	2.0	LB	10/10/01	10/05/01
8310	ANTHRACENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (A) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (A) PYRENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	BENZO (B) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	BENZO (G, H, I) PERYLENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	BENZO (K) FLUORANTHENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	CHRYSENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	DIBENZO (A, H) ANTHRACENE	0.20	U	ug/L	0.20	LB	10/10/01	10/05/01
8310	FLUORANTHENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	FLUORENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	INDENO (1, 2, 3-CD) PYRENE	0.10	U	ug/L	0.10	LB	10/10/01	10/05/01
8310	1-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	2-METHYLNAPHTHALENE	1.5	U	ug/L	1.5	LB	10/10/01	10/05/01
8310	NAPHTHALENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PHENANTHRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
8310	PYRENE	1.0	U	ug/L	1.0	LB	10/10/01	10/05/01
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 8      Date Sampled: 09/28/01  
 Client Sample Number: DUP-1      Sample Matrix: GROUND WATER  
 Sample Description: DUP-1

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<b><u>GC VOLATILE ORGANICS (8010-8020 LIST)</u></b>								
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME	10/02/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 9      Date Sampled: 09/28/01  
 Client Sample Number: TRIP BLANK      Sample Matrix: GROUND WATER  
 Sample Description: TRIP BLANK

Method	Analyte	Result	Q	Units	Reporting Limit	Analyst	Date Analyzed	Prepared
<u>GC VOLATILE ORGANICS (8010-8020 LIST)</u>								
8021	BROMODICHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BROMOMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CARBON TETRACHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROFORM	1.0	U	ug/L	1.0	RME	10/02/01	
8021	2-CHLOROETHYL VINYL ETHER	1.0	U	ug/L	1.0	RME	10/02/01	
8021	CHLOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	DIBROMOCHLOROMETHANE	0.40	U	ug/L	0.40	RME	10/02/01	
8021	1,2-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,3-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,4-DICHLOROBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	DICHLORODIFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	trans-1,2-DICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,2-DICHLOROPROPANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	cis-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	trans-1,3-DICHLOROPROPENE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	METHYLENE CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2,2-TETRACHLOROETHANE	0.20	U	ug/L	0.20	RME	10/02/01	
8021	TETRACHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,1-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	1,1,2-TRICHLOROETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROETHENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	TRICHLOROFLUOROMETHANE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	VINYL CHLORIDE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	BENZENE	1.0	U	ug/L	1.0	RME	10/02/01	
8021	ETHYLBENZENE	1.0	U	ug/L	1.0	RME	10/02/01	

MR. MIKE BOLLINGER  
 ELLIS ENVIRONMENTAL GROUP  
 304 SW 140TH TERRACE  
 GAINESVILLE, FL 32669



## ANALYTICAL REPORT

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Submission Number: 109000791      Client's P.O. Number: TASK #2  
 Date Received: 09/29/01      Project Number: 53908-2  
 Date Reported: 10/12/01      Project Name: MAYPORT-SITE 1343  
 Elab Report Name: Finalnew->Final2.RP1

Lab Sample Number: 0109791 9      Date Sampled: 09/28/01  
 Client Sample Number: TRIP BLANK      Sample Matrix: GROUND WATER  
 Sample Description: TRIP BLANK

Method	Analyte	Result	Q	Units	Reporting		Date		
					Limit	Analyst	Analyzed	Prepared	
<u>GC VOLATILE ORGANICS (8010-8020 LIST)</u>									
8021	METHYL TERT-BUTYL ETHER	1.0	U	ug/L	1.0	RME		10/02/01	
8021	TOLUENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	o-XYLENE	1.0	U	ug/L	1.0	RME		10/02/01	
8021	m&p-XYLENES	1.0	U	ug/L	1.0	RME		10/02/01	

## Data Qualifier Code Key:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

CERTIFICATION: All analytical data reported above were obtained using the specified methods and were validated by our laboratory quality control system. This laboratory follows an approved quality assurance program.

Respectfully submitted:

Paul K. Canevaro  
 Laboratory Director

# ICP QC SPREADSHEET: AQUEOUS SAMPLES

Sample ID #: 09791-1

Dilution factor: 1

Digestion Batch: WICP10040101

Analysis Batch : ICP05Oct01-1



ELEMENT	RESULTS			LEVELS	REC.		
	09791-1 REF (ug/L)	09791-1 MS (ug/L)	09791-1 MSD (ug/L)	AMOUNT SPIKED (ug/L)	MS REC %	MSD REC %	SPK RPD %
ALUMINUM	< 100	10000	10000	10000	100%	100%	< 1%
ANTIMONY	< 5.00	479	480	500	96%	96%	< 1%
ARSENIC	< 5.00	493	493	500	99%	99%	< 1%
BARIUM	< 10.0	953	949	1000	95%	95%	< 1%
BERYLLIUM	< 1.00	92.4	92.3	100	92%	92%	< 1%
BORON	73.7	4920	4920	5000	97%	97%	< 1%
CADMIUM	< 1.00	90.6	91.0	100	91%	91%	< 1%
CALCIUM*	106	157	153	50	102%	94%	3%
CHROMIUM	< 5.00	466	467	500	93%	93%	< 1%
COBALT	< 10.0	931	932	1000	93%	93%	< 1%
COPPER	< 10.0	965	961	1000	97%	96%	< 1%
IRON	738	4210	4230	4000	87%	87%	< 1%
LEAD	< 5.00	470	468	500	94%	94%	< 1%
MAGNESIUM*	11.4	60.9	60.5	50	99%	98%	1%
MANGANESE	124	582	579	500	92%	91%	1%
MOLYBDENUM	< 10.0	959	963	1000	96%	96%	< 1%
NICKEL	< 10.0	903	904	1000	90%	90%	< 1%
POTASSIUM*	4.08	53.7	53.2	50	99%	98%	1%
SELENIUM	< 5.00	425	435	500	85%	87%	2%
SILVER	< 10.0	991	996	1000	99%	100%	1%
SODIUM*	12.0	61.2	60.5	50	98%	97%	1%
STRONTIUM	749	1650	1620	1000	90%	87%	2%
THALLIUM	< 5.00	478	484	500	96%	97%	1%
TIN	< 50.0	4820	4840	5000	96%	97%	< 1%
VANADIUM	< 10.0	920	920	1000	92%	92%	< 1%
ZINC	< 20.0	1870	1870	2000	94%	94%	< 1%

\* Units For These Elements Are mg/L

~ Not Evaluated, Analyte Concentration < 3 x MRL.

^ Not Evaluated, Analyte Concentration > 4 x Spike Concentration.

! Not Evaluated, Sample Concentration Exceeded Linear Range.

\$ Not evaluated due to Spectral Interference.

Method specified control limits:

Method 200.7: 70-130%. Method 6010: 75-125%.

Any recovery outside of these limits indicates a matrix interference for the

specified analyte and sample.  
Mailing - P.O. Box 468 • Ormond Beach, Florida 32175-0468 • Shipping - 8 East Tower Circle • Ormond Beach, Florida 32174  
(386) 672-5668 • Fax (386) 673-4001

Puerto Rico: Office (787) 787-0866 • Cellular (787) 390-3505 or (787) 399-4683



## FL PRO LIQUID SUMMARY

### Lab Fortified Blank Recovery

**BATCH: WSVL01100504**

**Sequence Date: 10/8/01**

<i>Sample I.D.</i>	<i>% Recovery Limits (47-142)</i>	<i>% RPD (25)</i>	<i>Comment</i>
LFB	88.0		

### Matrix Spike / Matrix Spike Duplicate Recovery

*ample I.D.*                      10-069-1

<i>Compound</i>	<i>Conc. Spike (ug/L)</i>	<i>Conc. Sample (ug/L)</i>	<i>MS Result (ug/L)</i>	<i>% Rec.</i>	<i>MSD Result (ug/L)</i>	<i>% Rec.</i>	<i>RPD %</i>	<i>% Rec Limits</i>	<i>RPD Limits</i>
<i>Total Petroleum Organics</i>	5.00	N.D.	4.47	94.7	4.10	86.9	8.6	47-142	20

**Comments:**

---



## Polynuclear Aromatic Hydrocarbons

EPA Method 8310  
Recovery Data

Batch ID: WSVL01100502  
 Extraction Date: 10/5/01  
 Analysis Date: 10/11/01  
 Sample ID: LFB

Analyst: TE

Compound		Conc. Spike Added (ug/L)	BLANK Result (ug/L)	Conc. Spike (ug/L)	% REC
%RPD Limit	% REC Limit				
Naphthalene		50.0	ND	38.1	76.2
40	(47-153)				
Acenaphthylene		50.0	ND	43.4	86.8
40	(54-146)				
Acenaphthene		50.0	ND	42.4	84.8
40	(40-160)				
Fluorene		2.50	ND	2.64	105.6
40	(44-156)				
Phenanthrene		25.0	ND	22.4	89.6
40	(60-140)				
Anthracene		2.50	ND	2.22	88.8
40	(28-172)				
Pyrene		10.0	ND	9.50	95.0
40	(55-145)				

0 out of 7 outside QC Limits

Sample ID: 10-009-1 MS/MSD Analysis Date: 10/11/01

Compound		Conc. Spike Added (ug/L)	Sample Result (ug/L)	Conc. MS (ug/L)	% REC	Conc. MSD dup (ug/L)	% REC	%RPD
%RPD Limit	% REC Limit							
Naphthalene		50.0	ND	41.6	83.2	43.2	86.4	4
40	(47-153)							
Acenaphthylene		50.0	ND	47.3	94.6	48.9	97.8	3
40	(54-146)							
Acenaphthene		50.0	ND	41.8	83.6	49.9	99.8	18
40	(40-160)							
Fluorene		2.50	ND	2.33	93.2	2.89	115.6	21
40	(44-156)							
Phenanthrene		25.0	ND	22.7	90.8	24.6	98.4	8
40	(60-140)							
Anthracene		2.50	ND	2.15	86.0	2.39	95.6	11
40	(28-172)							
Pyrene		10.0	ND	9.2	92	11.30	113.0	20.7
40	(55-145)							

0 out of 14 outside QC Limits

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 Comments: \* RPD is for internal purpose only. (386) 672-5668 • Fax (386) 673-4001

Puerto Rico: Office (787) 787-0866 • Cellular (787) 390-3505 or (787) 399-4683



### Aqueous Matrix Spike/Matrix Spike Duplicate Recovery

#### EPA Method 502.2/601/602/8021

Sample ID LFB/CCAnalysis Date: 10/02/01Batch ID : WVGG01100201

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. LFB (ug/L)	%REC
1,1-Dichloroethene 80-120	10.0	ND	10.9	109
Trichloroethene 80-120	10.0	ND	9.26	92.6
Chlorobenzene 80-120	10.0	ND	10.1	101
Toluene 80-120	10.0	ND	9.70	97.0
Benzene 80-120	10.0	ND	9.20	92.0

Volatiles: 0 out of 5 ;outside QC limitsSample ID 01-09-795-12 20ug/L ms str RR 5mLAnalysis Date: 10/03/01

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. MS (ug/L)	%REC	Conc. MSD (ug/L)	%REC	RPD
1,1-Dichloroethene 22-169	20.0	ND	20.3	102	21.6	108	6.21
Trichloroethene 63-145	20.0	ND	20.4	102	21.6	108	5.71
Chlorobenzene 61-134	20.0	ND	19.8	99.0	21.1	106	6.36
Toluene 62-135	20.0	30.5	48.8	91.5	51.3	104	5.00
Benzene 80-130	20.0	1.88	20.3	92.1	20.8	94.6	2.43

Volatiles: 0 out of 15 ;outside QC limits

Comment: \_\_\_\_\_



### Aqueous Matrix Spike/Matrix Spike Duplicate Recovery

#### EPA Method 502.2/601/602/8021

Sample ID LFB/CC

Analysis Date: 10/01/01

Batch ID : WVGG01100101

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. LFB (ug/L)	%REC
1,1-Dichloroethene 80-120	10.0	ND	9.78	97.8
Trichloroethene 80-120	10.0	ND	10.3	103
Chlorobenzene 80-120	10.0	ND	10.7	107
Toluene 80-120	10.0	ND	9.40	94.0
Benzene 80-120	10.0	ND	9.40	94.0

Volatiles: 0 out of 5 ;outside QC limits

Sample ID 01-09-791-4 20ug/Lms 8021 1:5dil 1mL:5mL

Analysis Date: 10/01/01

Compound <i>Recovery Limit</i>	Conc. Spike Added (ug/L)	Sample	Conc. MS (ug/L)	%REC	Conc. MSD (ug/L)	%REC	RPD
1,1-Dichloroethene 22-169	20.0	ND	18.2	91.0	18.0	90.0	1.10
Trichloroethene 63-145	20.0	ND	21.5	108	20.0	100	7.23
Chlorobenzene 61-134	20.0	ND	23.3	117	21.8	109	6.65
Toluene 62-135	20.0	ND	19.9	99.5	20.3	102	1.99
Benzene 80-130	20.0	ND	19.9	99.5	20.2	101	1.50

Volatiles: 0 out of 15 ;outside QC limits

Comment: \_\_\_\_\_



**Elab, Inc.**  
8 East Tower Circle  
Ormond Beach, FL 32174  
(904)672-5668 • FAX (904)673-4001

# CHAIN OF CUSTODY RECORD

No. E 47657

Page 1 of 1

FOR LAB USE ONLY		FOR LAB USE ONLY	
Condition of Contents: _____		Submission No. <b>0109-791</b>	
Temp. of Contents: _____ °C (or Received on Ice, ROI)	Condition of Seals: _____		

(INSTRUCTIONS ON BACK OF THIS FORM)

1. Client: (Company or Individual)  
**Harding ESE**

2. Report to: (if different from above)  
**Same as above**

3. Client Project Name:  
**Mayport - Site 1343**

4. Client Project No.: **53508-2**

5. P.O. No.:

6. Custody Seal No.:

7. Sampled By: **AT / RML**

8. Shipping Method: **Cooler - Fed Ex**

Address: **2533 Greer Rd Same G** Phone: **(850) 656-1293**

City: **Tallahassee** State: **FL** Zip Code: **32308** Fax: **(850) 656-2866**

Address: \_\_\_\_\_ Phone: ( )

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_ Fax: ( )

14. Preservatives	N	H	S	C				
16. Containers	P	V	G	G				

15. Water Sample Codes (for Item 13):  
 DW = Drinking Water  
 GW = Ground Water  
 SW = Surface Water  
 PW = Processed Water  
 WW = Waste Water

16. Container Codes (for Item 16):  
 V = VOA vial  
 G = glass  
 P = plastic  
 M = micro bag cup  
 O = other

18. Report Type:  
 Routine  
 Standard QC  
 Detrapackage

19. Turnaround Time:  
 Standard  
 Rush: / /

Preservative Codes (for Item 15)  
 C = Cool Only  
 H = Hydrochloric Acid  
 M = Monochloroacetic Acid  
 N = Nitric Acid  
 OH = Sodium Hydroxide  
 S = Sulfuric Acid  
 T = Sodium Thiosulfate

Item	9. Sample ID or No.	10. Sample Description	11.		12.			13.				14. No. of Containers	15. Analyses Requested				20. REMARK	LAB USE ONLY LAB SAMPLE NO.
			Date	Time	Comp.	Grab	Water	Air	Soil	Sludge	Other		15.	16.	17.	18.		
1	MW-1		9/28/01	940	α	GW					6	1	3	1	1			
2	MW-2		9/28/01	1000	α	GW					6	1	3	1	1			
3	MW-5		9/28/01	1030	α	GW					6	1	3	1	1			
4	MW-6		9/28/01	1045	α	GW					6	1	3	1	1			
5	MW-3		9/28/01	1111	α	GW					6	1	3	1	1			
6	MW-4		9/28/01	1130	α	GW					6	1	3	1	1			
7	MW-7		9/28/01	1230	α	GW					6	1	3	1	1			
8	DUP-1		9/28/01	1115	α	GW					6	1	3	1	1			
9	Trip Blank		9/28/01								2		2					
10																		

*Analyses Requested*  
 Total Lead 6010  
 602 - BTEXM  
 FL-PRO  
 8310 - PAH

21. RELINQUISHED BY	DATE	TIME	22. RECEIVED BY	DATE	TIME	FOR LAB USE ONLY	
<i>[Signature]</i>	9/28/01	1400	<i>[Signature]</i>	9/28/01	12:45	Sampling Fee: _____ Hrs.	
						Equipment Rental Fee: _____	
						Profile No.:	Quote No.:

## **APPENDIX C**

# **Tidal and Rainfall Information**

PARAMS = /opt/apache/cgi-bin/wlpred -pfs /OPAWL\_DATA/STATION\_INFO/8720218.dat 09/27/  
 Predicted Water Level Data (PR)

Station -- Unique seven character identifier for the station  
 Date Time -- Date and time the data were collected by the DCP  
 PR -- Predicted Water level height

Data are in Feet above MLLW  
 Times are on Local Standard Time (LST)

8720218 Mayport (Bar Pilots Dock) , FL from 20010927 to 20010927

---

Station	Date	Time	PR
8720218	2001/09/27	00:00	2.50
8720218	2001/09/27	01:00	3.27
8720218	2001/09/27	02:00	4.00
8720218	2001/09/27	03:00	4.61
8720218	2001/09/27	04:00	5.00
8720218	2001/09/27	05:00	5.04
8720218	2001/09/27	06:00	4.62
8720218	2001/09/27	07:00	3.79
8720218	2001/09/27	08:00	2.90
8720218	2001/09/27	09:00	2.20
8720218	2001/09/27	10:00	1.81
8720218	2001/09/27	11:00	1.87
8720218	2001/09/27	12:00	2.41
8720218	2001/09/27	13:00	3.18
8720218	2001/09/27	14:00	3.98
8720218	2001/09/27	15:00	4.71
8720218	2001/09/27	16:00	5.32
8720218	2001/09/27	17:00	5.66
8720218	2001/09/27	18:00	5.53
8720218	2001/09/27	19:00	4.84
8720218	2001/09/27	20:00	3.81
8720218	2001/09/27	21:00	2.81
8720218	2001/09/27	22:00	2.04
8720218	2001/09/27	23:00	1.69

**Preliminary Local Climatological Data (F6) for Jacksonville, FL**

Please note: Hit page back button to return to climate page.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: JACKSONVILLE  
 MONTH: SEPTEMBER  
 YEAR: 2001  
 LATITUDE: 30 30 N  
 LONGITUDE: 81 42 W

TEMPERATURE IN F:		:PCPN:			SNOW:		WIND			:SUNSHINE:			SKY		:PK WND			
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
AVG MK 2MIN																		
DI	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WK	SPD	DR
1	90	72	81	1	0	16	0.18	0.0	0	3.2	36	240	M	77	2	123	44	240
2	90	71	81	1	0	16	0.56	0.0	0	2.5	17	230	M	97	2	31	21	240
3	88	71	80	0	0	15	0.17	0.0	0	3.3	17	150	M	75	3	31	21	160
4	91	72	82	2	0	17	0.57	0.0	0	2.6	20	120	M	89	2	13	23	110
5	87	71	79	-1	0	14	0.01	0.0	0	3.3	13	80	M	98	3	13	15	140
6	86	71	79	-1	0	14	0.83	0.0	0	2.5	26	100	M	81	4	31	30	90
7	88	70	79	-1	0	14	0.02	0.0	0	2.4	15	10	M	98	4	123	17	10
8	87	71	79	-1	0	14	0.03	0.0	0	4.9	22	70	M	86	2	3	25	80
9	86	70	78	-2	0	13	0.40	0.0	0	3.5	23	150	M	99	3	13	26	140
10	86	71	79	0	0	14	0.11	0.0	0	4.3	16	120	M	94	3		20	110
11	87	72	80	1	0	15	0.79	0.0	0	5.6	22	90	M	84	4	13	26	90
12	82	70	76	-3	0	11	5.43	0.0	0	8.2	30	80	M	66	6	13	35	80
13	79	69	74	-5	0	9	2.34	0.0	0	7.9	28	70	M	45	6	31	32	70
14	73	68	71	-8	0	6	1.90	0.0	0	16.3	33	60	M	8	9	1	41	60
15	73	64	69	-10	0	4	0.89	0.0	0	14.5	32	60	M	75	10	1	40	60
16	80	57	69	-9	0	4	0.00	0.0	0	4.9	13	90	M	94	0		15	120
17	81	60	71	-7	0	6	0.00	0.0	0	2.8	12	100	M	93	1		14	80
18	83	64	74	-4	0	9	0.00	0.0	0	3.9	15	80	M	92	4		17	80
19	85	68	77	-1	0	12	0.00	0.0	0	4.1	13	100	M	95	4		15	100
20	88	71	80	3	0	15	0.00	0.0	0	4.0	10	90	M	99	1	1	12	90
21	90	71	81	4	0	16	T	0.0	0	3.6	13	120	M	99	1	1	15	120
22	89	70	80	3	0	15	0.47	0.0	0	3.0	22	20	M	73	4	13	26	40
23	85	70	78	1	0	13	1.27	0.0	0	3.0	20	10	M	M	3	13	23	30
24	86	70	78	2	0	13	0.05	0.0	0	3.9	26	280	M	M	2	13	32	280
25	80	63	72	-4	0	7	0.01	0.0	0	4.9	14	340	M	76	5		16	340
26	75	60	68	-8	0	3	0.00	0.0	0	3.0	9	330	M	90	2		12	360
27	80	62	71	-5	0	6	0.00	0.0	0	4.6	13	80	M	85	4	1	16	70
28	80	62	71	-4	0	6	0.00	0.0	0	5.9	15	60	M	99	1	1	17	70
29	74	60	67	-8	0	2	0.00	0.0	0	14.0	26	50	M	94	2		35	50
30	72	56	64	-11	1	0	0.00	0.0	0	9.9	20	20	M	M	0		25	20
SM	2501	2017			1	319	16.03		0.0	160.5			M		96			
AV	83.4	67.2								5.3	FASTST		PSBL	%	3		MAX (MPH)	
								MISC	---->	36	240						44	240

NOTES:

# LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

□

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: JACKSONVILLE  
 MONTH: SEPTEMBER  
 YEAR: 2001  
 LATITUDE: 30 30 N  
 LONGITUDE: 81 42 W

[TEMPERATURE DATA]

AVERAGE MONTHLY: 75.3  
 DPTR FM NORMAL: -3.1  
 HIGHEST: 91 ON 4  
 LOWEST: 56 ON 30

[PRECIPITATION DATA]

TOTAL FOR MONTH: 16.03  
 DPTR FM NORMAL: 8.98  
 GRTST 24HR 7.02 ON 12-13  
 SNOW, ICE PELLETS, HAIL  
 TOTAL MONTH: 0.0 INCH  
 GRTST 24HR ON  
 GRTST DEPTH: 0 ON M

SYMBOLS USED IN COLUMN 16

- 1 = FOG
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = GLAZE OR RIME
- 7 = BLOWING DUST OR SAND: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

MAX 32 OR BELOW: 0  
 MAX 90 OR ABOVE: 4  
 MIN 32 OR BELOW: 0  
 MIN 0 OR BELOW: 0

[WEATHER - DAYS WITH]

0.01 INCH OR MORE: 19  
 0.10 INCH OR MORE: 14  
 0.50 INCH OR MORE: 9  
 1.00 INCH OR MORE: 4

[HDD (BASE 65) ]

TOTAL THIS MO. 1  
 DPTR FM NORMAL 1  
 SEASONAL TOTAL 1  
 DPTR FM NORMAL 1

CLEAR (SCALE 0-3) 18  
 PTCLDY (SCALE 4-7) 10  
 CLOUDY (SCALE 8-10) 2

[CDD (BASE 65) ]

TOTAL THIS MO. 319  
 DPTR FM NORMAL -74  
 SEASONAL TOTAL 2267  
 DPTR FM NORMAL -20

[PRESSURE DATA]

HIGHEST SLP M ON M  
 LOWEST SLP M ON M

[REMARKS]

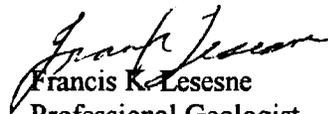
**APPENDIX D**

**Certification**

February 26, 2002

This document, "Site Assessment Report Addendum, Underground Storage Tank Site 1343, U.S. Naval Station, Mayport, Florida," has been prepared under the direction of a Florida registered professional geologist. The work and professional opinions rendered in this report were conducted or developed in accordance with commonly accepted protocols and procedures. If conditions are discovered or determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the findings and recommendations in this document. This document was prepared to provide information for the assessment of petroleum hydrocarbons related to released from an abandoned underground storage tank at Underground Storage Tank Site 1343, located at U.S. Naval Station Mayport, Florida, and should not be construed to apply for any other purpose or site.

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