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Project Number 7849

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ATTN: Bryan Kizer (Code 1846)
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North Charleston, South Carolina 29406

Reference: Clean Contract No. N62467-94-D-0888
Contract Task Order No. 0061

Subject: Site Assessment Report for
Former Fire Fighting Training Facility
NAS Jacksonville, Jacksonville, Florida

Dear Mr. Kizer:

Tetra Tech NUS (TtNUS) is pleased to submit the subject Site Assessment Report for the referenced CTO. As indicated in the report, though TtNUS performed product recovery and well over-development as part of this project, a sheen of free product is still present in one of the site's monitoring wells. Based upon the presence of free product, TtNUS recommends that a remedial action plan be prepared to address the petroleum contamination.

If you have any questions regarding the enclosed material, or if I can be of assistance in any way, please contact me at (904) 281-0400.

Very truly yours,

A handwritten signature in black ink, appearing to read 'S. P. Pratt'.

Samuel P. Pratt
Task Order Manager

Enclosures

cc: Ms. D. Evans-Ripley, SOUTHDIV (w/o enclosures)
Ms. D. Lancaster (2)
Mr. M. Perry
Ms. D. Wroblewski (w/o enclosures)
file

**SITE ASSESSMENT REPORT
FOR
FORMER FIRE FIGHTING TRAINING
FACILITY**

**Naval Air Station Jacksonville
Jacksonville, Florida**



**Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0061**

January 1999

**SITE ASSESSMENT REPORT
FOR FORMER FIRE FIGHTING TRAINING FACILITY**

**NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FLORIDA**

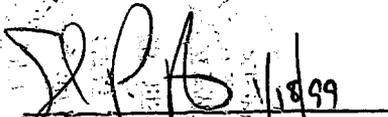
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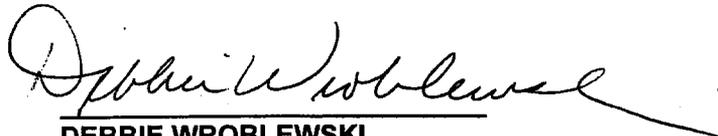
**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0061**

January 1999

PREPARED BY:


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EXECUTIVE SUMMARY
of
SITE ASSESSMENT FOR
Naval Air Station Jacksonville
Former Fire Fighting Training Facility
Jacksonville, Florida

Tetra Tech NUS, Inc. (TtNUS) has completed a Site Assessment (SA) at the above-referenced facility in accordance with the requirements of Chapter 62-770, Florida Administrative Code (FAC). This assessment report is being submitted to the Florida Department of Environmental Protection for approval.

TtNUS performed the following tasks during the SA:

- Reviewed the Focused Remedial Investigation and Feasibility Study Closure Assessment Report and the Completion Report to assist with the field investigations;
- Reviewed potable well surveys provided by Environmental Data Resources, Inc. to identify potential receptors for petroleum hydrocarbons in the vicinity, and to evaluate private potable wells within a 0.25-mile radius and public water supply wells within a 0.5-mile radius;
- Conducted a site survey to construct a site plan and collected depth to groundwater measurements to evaluate the groundwater flow direction and gradient;
- Advanced 26 soil borings using Direct Push Technology (DPT) and analyzed the soil and groundwater with a mobile laboratory;
- Installed five (5) shallow monitoring wells and one (1) deep well for analysis of the constituents included in the Kerosene Analytical Group;
- Performed slug testing on three monitoring wells to evaluate the hydraulic conductivity of the surficial aquifer.
- Performed well aquifer testing and overdeveloped in one product bearing well.

The results of the SA revealed free product in one of the site's monitoring wells, "excessively contaminated" soil, as defined by Chapter 62-770.200 FAC, and hydrocarbon impacted groundwater that exceeds regulatory guidelines. Based on the results of the SA, TtNUS recommends that a Remedial Action Plan be initiated upon Site Assessment Report (SAR) approval.

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

A Site Assessment (SA) was conducted by Tetra Tech NUS (TiNUS) for the U.S. Navy (Navy) Southern Division Naval Facilities Engineering Command under Contract Task Order 0061, for the Comprehensive Long-term Environmental Action Navy (CLEAN III), Contract Number N62467-94-D-0888. The SA was conducted at the former Fire Fighting Training Facility (FFTF) adjacent to the wastewater treatment plant at Naval Air Station Jacksonville.

The purpose of this SA was to evaluate the extent of petroleum hydrocarbons in subsurface soils and groundwater in accordance with the requirements of Chapter 62-770 of the Florida Administrative Code (FAC). The FFTF was previously investigated under the Installation Restoration (IR) Program as Potential Source of Contamination 2 (PSC2) included in the Operable Unit 2 (OU2) area. PSC 2 was used as a training area where fires were ignited to simulate aircraft crashes. Jet fuel (JP-4, JP-5) and aviation gasoline are the contaminants of concern at the FFTF (ABB Environmental, 1994).

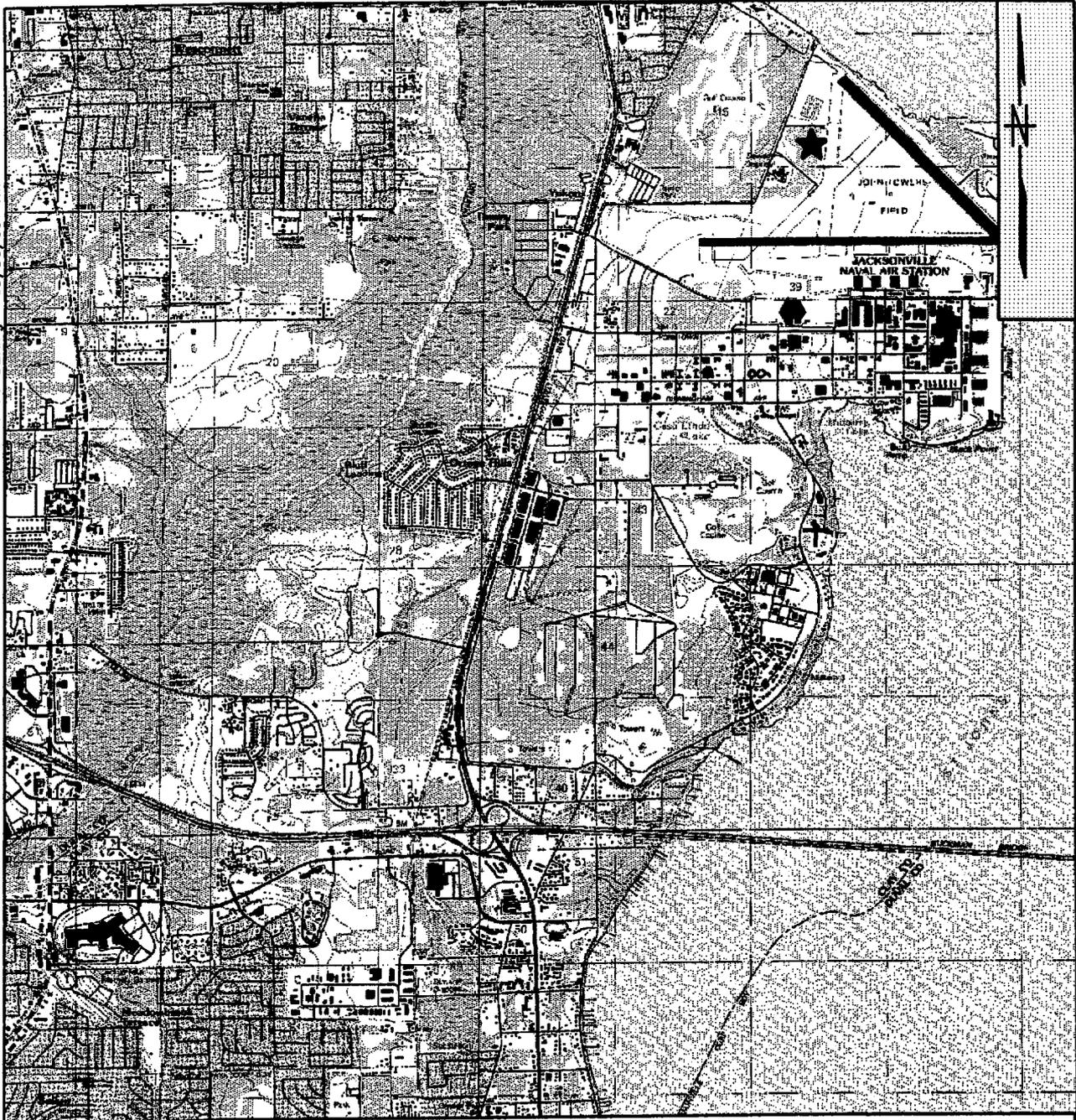
A SAR Summary Sheet is included in **Appendix A**.

1.2 SITE DESCRIPTION

1.2.1 Location

The NAS Jacksonville facility is located near the tip of a peninsula between the Ortega and St. Johns Rivers. The NAS Jacksonville Base is located in northeast Florida on the west bank of the St. Johns River, southwest of Jacksonville, Florida. The NAS Jacksonville facility is bordered by US Highway 17 to the west and the St. Johns River to the east and north (**Figure 1-1**). Specifically, the FFTF facility is located within Section 39 of Township 3 South, Range 27 East. A portion of Jacksonville Naval Air Station, located in Duval County, Jacksonville, Florida is presented in **Figure 1-2**.

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★ SITE LOCATION

SOURCE: USGS QUADRANGLE SURVEY MAP: ORANGE PARK, FL.

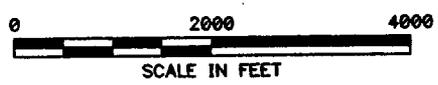
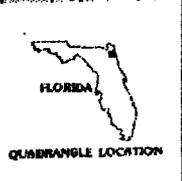
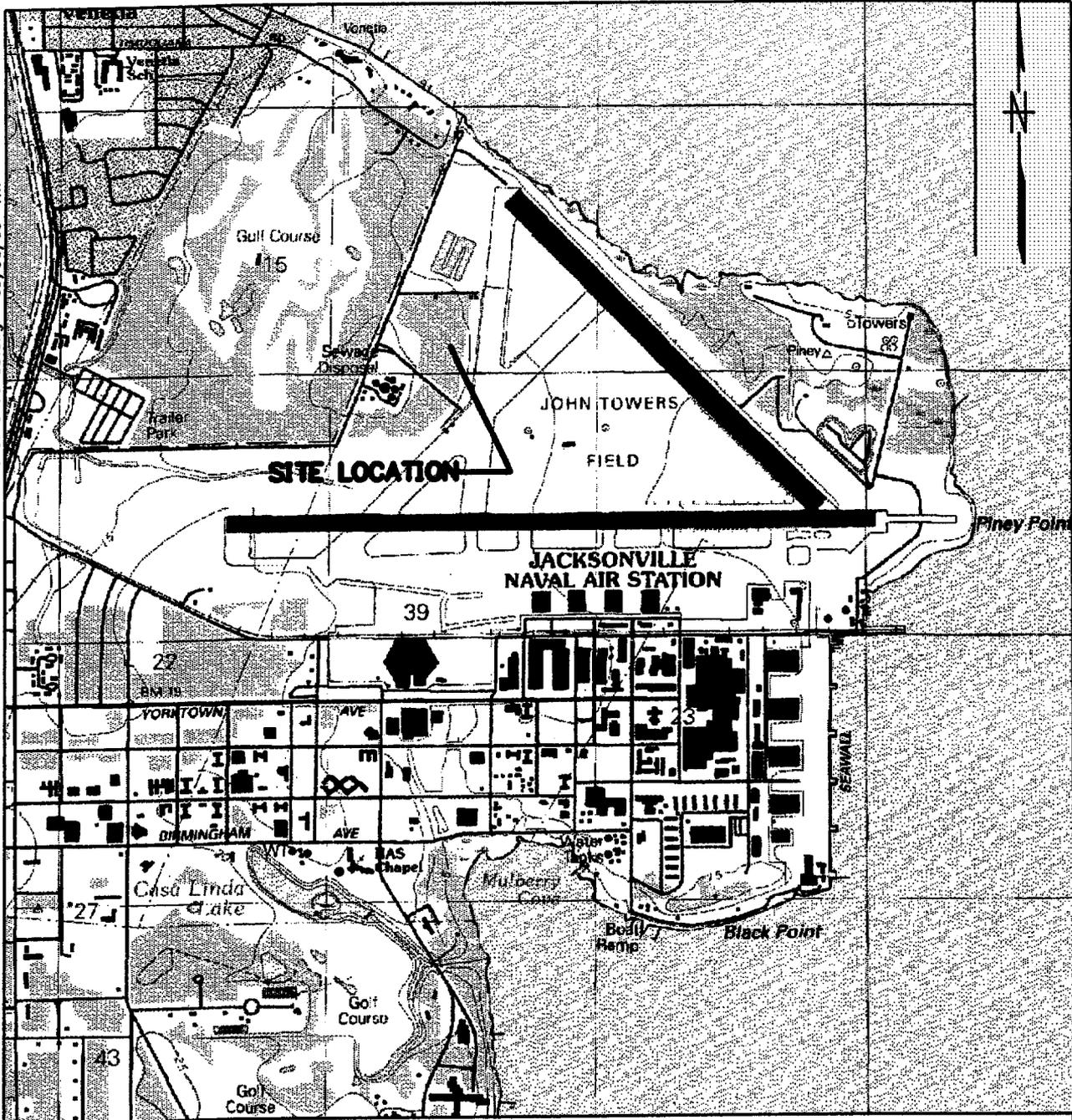
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SITE VICINITY MAP
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

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SOURCE: USGS QUADRANGLE SURVEY MAP: ORANGE PARK, FL.

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SITE LOCATION MAP
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

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1.2.2 Topography and Drainage

The site is located north-north east of the base's wastewater treatment plant (WWTP). The land surface elevation at OU2 varies from approximately 14 feet above mean sea level in the southwestern section, rising to a high of 22 feet above mean sea level just north of the domestic waste sludge drying beds, and falling to mean sea level along the St. Johns River at the northern boundary. A drainage divide runs northwesterly across OU2 in the vicinity of the waste sludge drying beds. South of the divide, runoff flows south and west into a drainage ditch that begins 1,200 feet south of the wastewater treatment plant (WWTP). This ditch parallels the east to west runway for approximately 3000 feet, then turns north and heads off base. North of the divide, runoff flows toward the St. Johns River via swales on either side of Patrol Road and two 36-inch-diameter drain pipes paralleling the taxiway on the east side of OU2 (ABB Environmental, 1994).

1.2.3 Regional Geology and Hydrogeology

A generalized geologic cross-section of OU2 is shown and described in Volume 1 of the NAS Jacksonville IR program plan (Geraghty & Miller, 1991a). The surficial soil consists of post-Miocene fluvial deposits including fine grained sand, silty sand, clayey sand, and sandy clay overlying the Hawthorn Group. Based on the results of a cone of penetrometer survey by the U.S. Army Corps of Engineers in 1990, the surficial deposits are at least 75 feet thick (ABB Environmental, 1994). During the 1998 field investigations, the groundwater flow in the surficial aquifer was determined to be generally south to southeast. The depth to groundwater ranged from approximately 2 to 6 ft below land surface (bls) in the investigations that occurred in July, September, November, and December 1998.

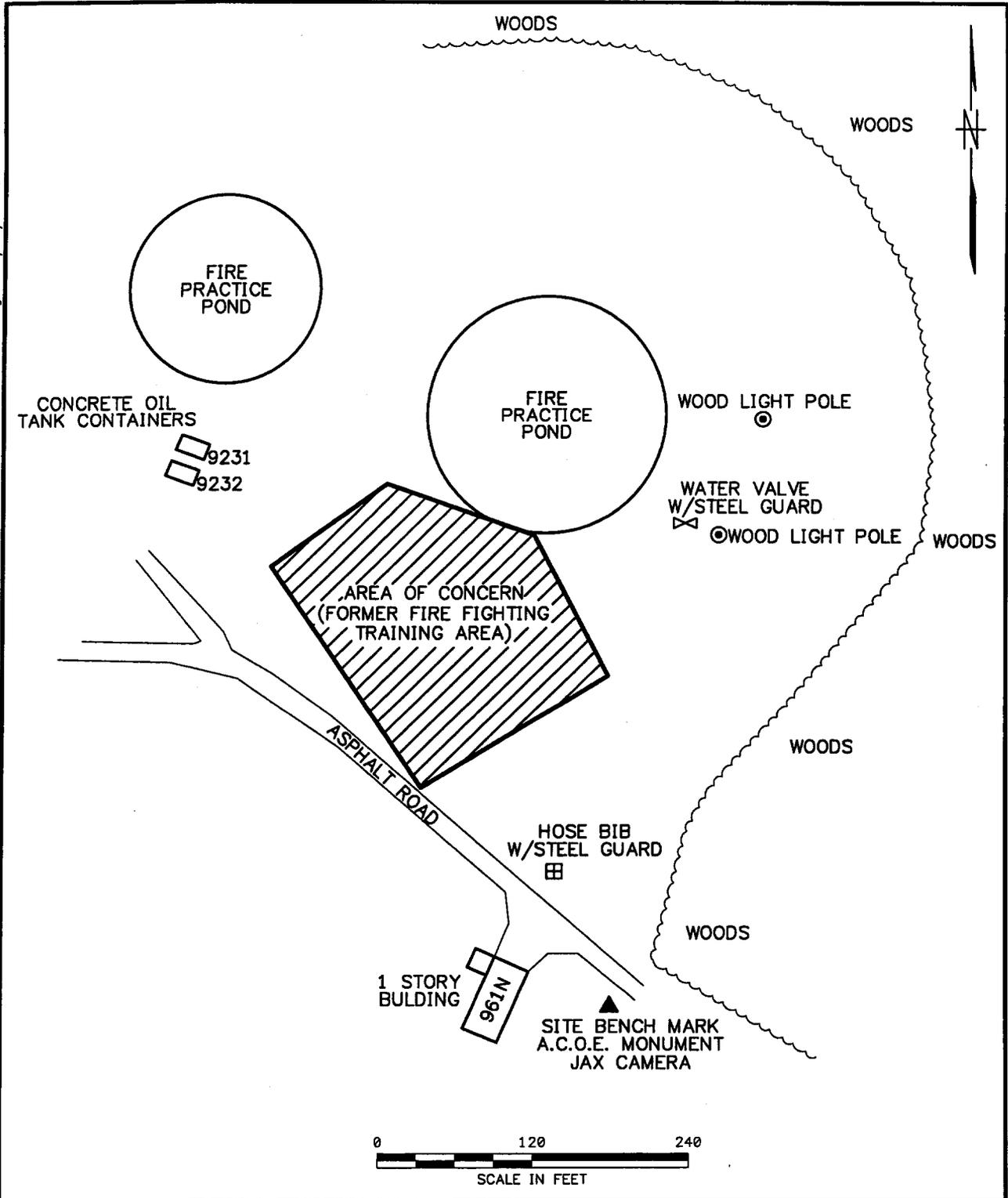
1.2.4 Land Use

The FFTF is located north-north east of the WWTP (Building 961N) within NAS Jacksonville's OU2. The site is depicted on Figure 1-3. Access to OU2 is limited because of its proximity to the NAS taxiways and runways. Currently the area just north to northwest of the FFTF is an area where fire fighting training is practiced. The OU2 area has been used primarily for wastewater treatment since the early 1940's. A secondary use for OU2 has been for fire-fighting training. Access to the site is controlled through a chain link fence along the base boundary and continuous patrols.

1.2.5 Site Description

The FFTF area was a shallow, unlined, circular pit, approximately 120 feet in diameter. In 1991, this FFTF pit was removed from service. Currently, the former pit is covered with vegetation.

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SITE PLAN
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

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FIGURE 1-3	0

1.2.6 Potable Water Well Survey

The potable water supply information presented in this report was obtained through an Environmental Data Resource Search "Geocheck" Report. A map of these wells is included in the complete Environmental Data Resource Search "Geocheck" Report, included as Appendix B of this report. Well construction and use data is summarized on Table 1-1. Most of the wells are owned by the US Navy and used for irrigation purposes. However, one of the wells within 0.5 miles is designated for potable use.

1.3 SITE HISTORY AND OPERATIONS

1.3.1 Site History

The FFTF was in operation beginning in 1966 and removed from service as a fire fighting training area in 1991. Obsolete vehicle chassis and parts were periodically staged on the pit, covered with JP-4, JP-5, aviation gasoline or other petroleum products, and then ignited to simulate aircraft crashes. Fire fighters would then practice extinguishing fires. An estimated 6,000 gallons of fuel were burned annually. NAS Jacksonville completed construction of a new fire fighting training area in 1992.

1.3.2 Initial Remedial Action

In 1996, Bechtel Environmental, Inc. (BEI) performed a source removal program at the FFTF. According to BEI's Completion Report, the goal of the remedial action was to remove the excessively contaminated soils in the FFTF. The limits of the excavation were defined by Organic Vapor Analysis (OVA) readings of less than 50 ppm and were verified by confirmatory soil analysis. A total of 2,422 cubic yards of contaminated soil was excavated from this area. During the excavation of the soil, a light sheen of free product was removed with oil absorbent booms. It was estimated that less than 1 gallon of product was recovered. The oil absorbent boom was drummed and turned over to Public Works Center at Naval Air Station, Jacksonville Florida.

The excavated soil was thermally treated in accordance with Chapter 62-775 FAC. Pre-burn samples were collected in accordance with 62-775.410 FAC. A licensed thermal treatment contractor was mobilized to the site to accomplish thermal treatment and post thermal treatment analysis of the soils was performed. Upon receipt of the thermal treatment post-burn analysis and confirmatory soil analysis the excavation was back-filled with the treated soil (Bechtel, 1996).

**Table 1-1
Potable Water Well Survey Results**

**Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida**

Well ID	Distance From Site (miles)	Diameter (inches)	Depth of Well (feet)	Use
A1	0.25	4	unreported	irrigation
A2	0.25	6	unreported	irrigation
A3	0.25	unreported	500	unused
A4	0.25	unreported	770	unreported
5	0.5	4	500	irrigation
6	0.5	11	unreported	irrigation
7	0.5	unreported	unreported	potable water service

2.0 SUBSURFACE INVESTIGATION METHODS

2.1 QUALITY ASSURANCE

The site investigation was conducted in accordance with the Standard Operating Procedures prescribed by the Florida Department of Environmental Protection (FDEP) Quality Assurance Section Document DER-001/92, and adopted by the TtNUS Comprehensive Quality Assurance Plan Number 980038.

2.2 SOIL BORING AND SAMPLING PROCEDURES

2.2.1 Direct-Push Soil Borings

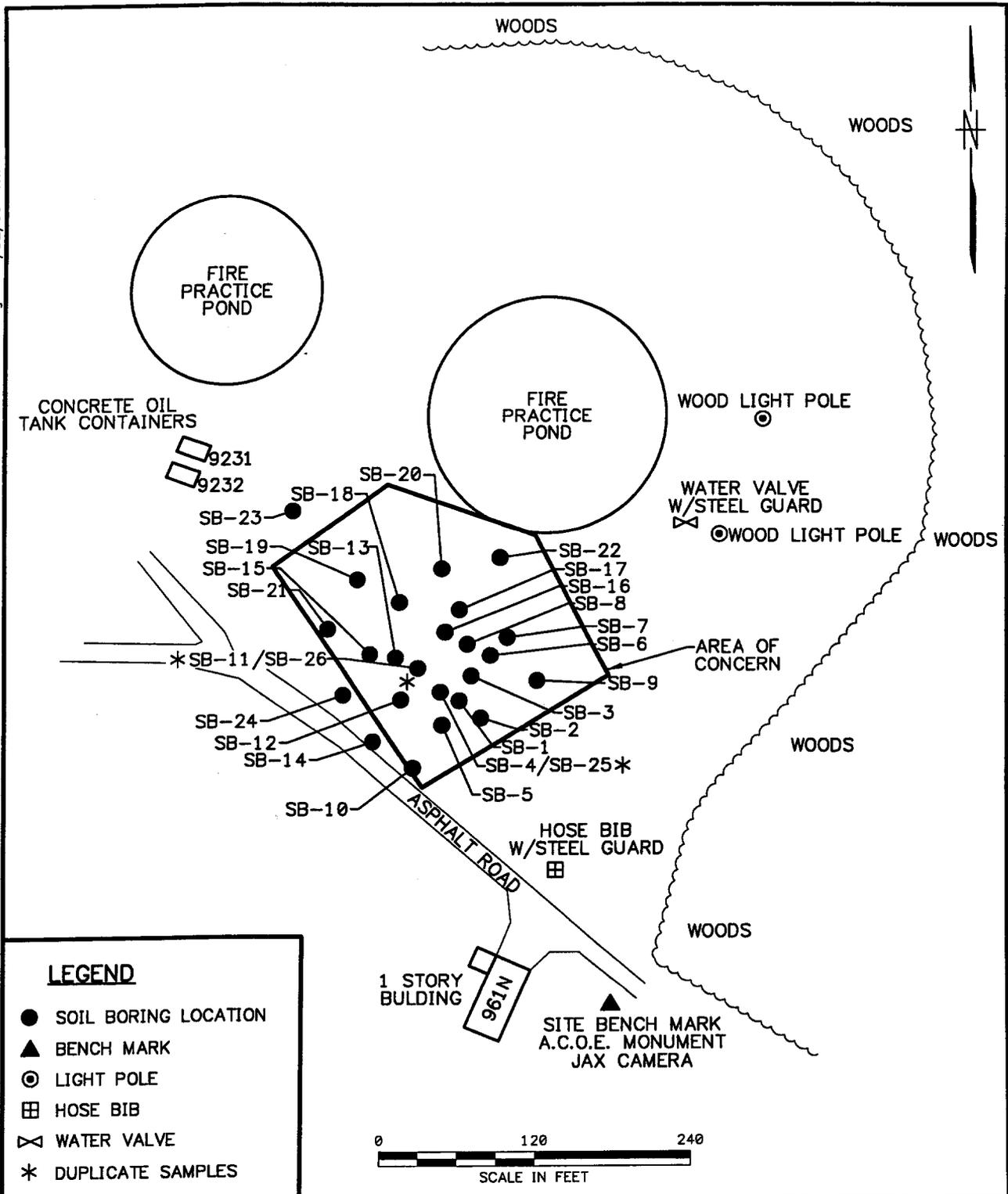
A soil hydrocarbon vapor assessment was conducted between July 6 and July 8, 1998. Twenty-six soil borings were advanced in the area surrounding the FFTF. Soil borings were advanced using a truck mounted, direct-push, hydraulic soil probe. Soil samples were collected using two-foot long stainless steel split barrel samplers lined with plastic sleeves. Soil samples were collected continuously from the ground surface until the water table was encountered (approximately 6 feet bls). Soil boring locations are depicted on **Figure 2-1**. The soil boring logs for the Direct Push Technology (DPT) work are included in **Appendix C**.

Soil samples were visually inspected and classified for evidence of staining. Samples were collected from each split barrel sampler of each boring and screened with an Organic Vapor Analyzer – Flame Ionization Detector (OVA-FID). Headspace data is included on Table 2-1. Soil vapor analysis was performed in accordance with the headspace screening method prescribed by Chapter 62-770.200(2) FAC. This method of headspace screening is described in detail in **Appendix D**. A duplicate of the sample from the split spoon interval with the highest OVA – FID reading was retained and analyzed by the mobile laboratory for BTEX (benzene, toluene, ethylbenzene, and xylenes) and DRO (diesel range organics).

2.2.2 Hand Augered Soil Borings

On September 8, 1998, TtNUS advanced three soil borings using a stainless steel, 3-inch, inside diameter (ID) hand-auger. The borings were advanced at locations SB-14, SB-17, and SB-19 to collect soil samples for laboratory analysis to confirm the presence of petroleum-related

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LEGEND

- SOIL BORING LOCATION
- ▲ BENCH MARK
- ⊙ LIGHT POLE
- ▣ HOSE BIB
- ⊗ WATER VALVE
- * DUPLICATE SAMPLES

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SOIL BORING LOCATION MAP
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
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compounds in the vadose zone soils. Sample locations and the depth of sample collection were based on the headspace readings obtained during the soil vapor analysis conducted during July 1998. Samples were collected at each boring (SB-14, SB-17, and SB-19) from 4 to 6 feet bls. The samples were analyzed for constituents of Florida's Kerosene Analytical Group.

Investigation derived waste (IDW) was containerized in 55-gallon drums and removed by Naval Air Station Jacksonville's Public Works Center. A copy of the manifest provided by NAS Jacksonville is included in **Appendix E**.

2.2.2 Monitoring Well Soil Borings

On September 8 and 9, 1998, six monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6D) were drilled by Groundwater Protection, Inc., under the supervision of TtNUS personnel. Soil grab samples collected during borehole advancement were used to characterize the site lithology and to provide additional assessment data on soil vapor concentrations in the area. The locations of the monitoring wells are shown on **Figure 2-2**. Soil boring logs are included in **Appendix C**.

Underground utilities were investigated at each boring location by advancing the boring with a post hole digger from 0 to 4 feet bls. The borings were continued with a truck-mounted drill rig using 4 1/4-inch ID hollow-stem augers.

Soil vapor analysis was performed on soil grab samples from monitoring well borings MW-1, MW-2, MW-5, and MW-6D as prescribed in Chapter 62-770.200(2) FAC. And presented in **Appendix D**. Hydrocarbon vapor concentrations from soil vapor analysis are summarized in **Table 2-1**.

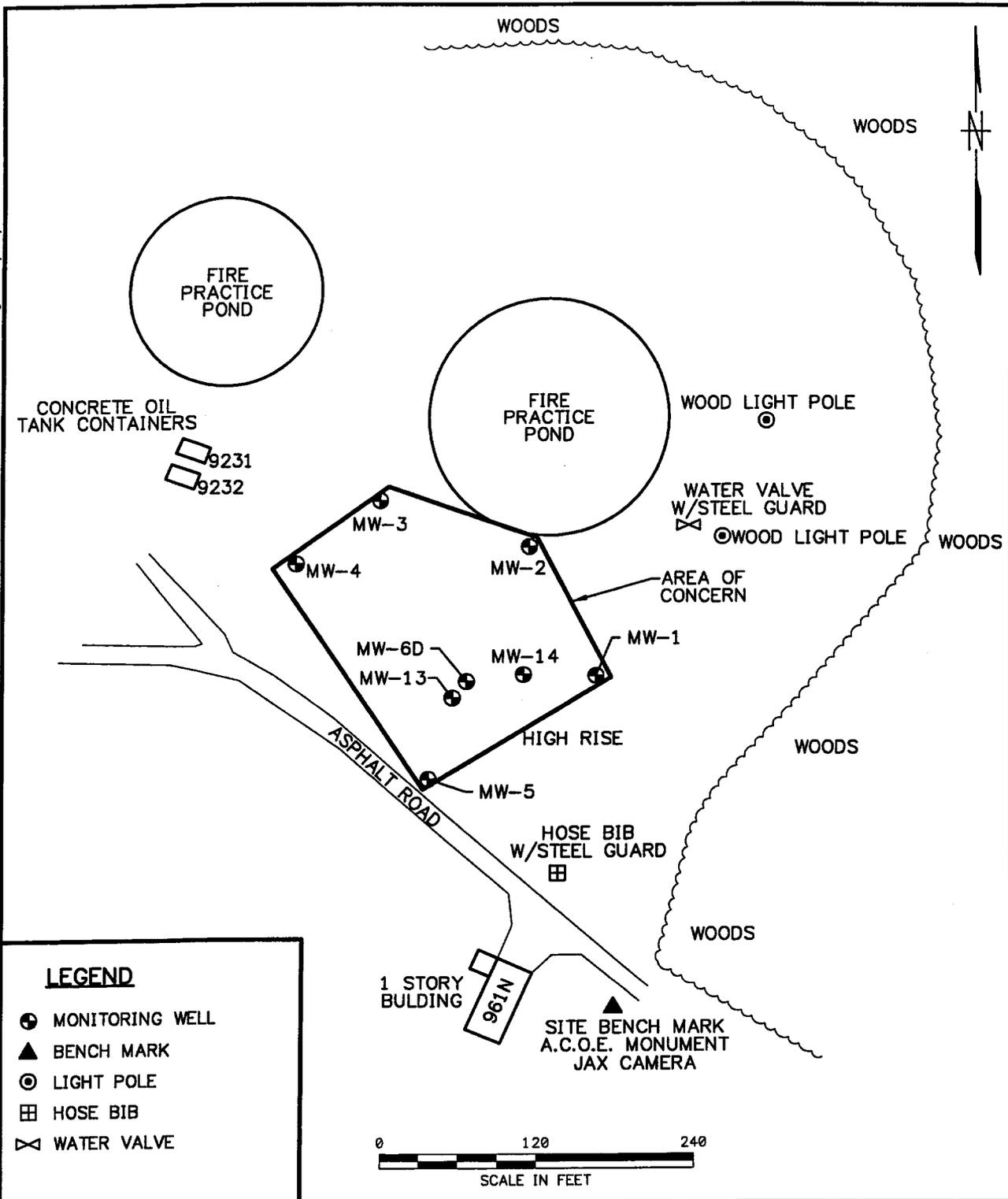
Soil cuttings generated during the well installations were placed in 55-gallon steel drums. A composite soil sample was collected from the drums and analyzed for pre-disposal parameters. Pre-burn soil laboratory data sheets and disposal manifests are included in **Appendix E**.

2.3 WELL CONSTRUCTION

2.3.1 Piezometer Construction

Piezometer wells were installed in conjunction with the direct push soil boring procedures discussed above in Section 2.2.1. Soil borings SB-9, SB-14, and SB-22 were converted into

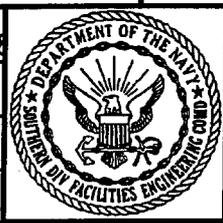
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LEGEND

- MONITORING WELL
- ▲ BENCH MARK
- ⊙ LIGHT POLE
- ⊞ HOSE BIB
- ⊗ WATER VALVE

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MONITORING WELL LOCATION MAP
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FIGURE 2-2	0

**Table 2-1
Soil Vapor Measurements**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Soil Boring No.	Date of Measurement	Sample Depth (feet bls)	Headspace Readings (ppm)		
			Total Organic Reading	Carbon Filtered Reading	Net Reading
SB-01	7/6/98	1	ND	NA	ND
		3	350	100	250
		6	>1000	>1000	NA
SB-02	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	10	8	2
SB-03	7/6/98	2	ND	NA	ND
		4	ND	NA	ND
		6	>1000	>1000	NA
SB-04	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	>1000	>1000	NA
SB-05	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	>1000	520	>480
SB-06	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	600	600	0
SB-07	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	60	60	0
SB-08	7/6/98	2	ND	NA	ND
		4	>1000	ND	>1000
		6	>1000	400	>600
SB-09	7/6/98	1	ND	NA	ND
		3	ND	NA	ND
		5	ND	NA	ND
SB-10	7/6/98	1	ND	NA	ND
		3	4.8	ND	4.8
		5	ND	NA	ND
SB-11	7/7/98	1	ND	NA	ND
		3	ND	NA	ND
		5	>1000	>1000	NA

See notes at end of table.

**Table 2-1 (cont'd)
Soil Vapor Measurements**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Soil Boring No.	Date of Measurement	Sample Depth (feet bls)	Headspace Readings (ppm)		
			Total Organic Reading	Carbon Filtered Reading	Net Reading
SB-12	7/7/98	1	ND	NA	ND
		3	ND	NA	ND
		5	>1000	620	>380
SB-13	7/7/98	2	ND	NA	ND
		4	>1000	34	>966
		6	>1000	>1000	NA
SB-14	7/7/98	1	ND	NA	ND
		3	ND	NA	ND
		5	ND	NA	ND
SB-15	7/7/98	1	ND	NA	ND
		3	4	ND	4
		5	>1000	>1000	NA
SB-16	7/7/98	2	ND	NA	ND
		4	>1000	5	>995
		6	>1000	740	>260
SB-17	7/7/98	1	ND	NA	ND
		3	>1000	ND	>1000
		5	>1000	>1000	NA
SB-18	7/7/98	1	ND	NA	ND
		3	>1000	ND	>1000
		5	>1000	>1000	NA
SB-19	7/7/98	2	10	10	0
		4	>1000	>1000	0
		6	820	220	600
SB-20	7/7/98	1	ND	NA	ND
		3	ND	NA	ND
		5	320	60	260

See notes at end of table.

**Table 2-1 (cont'd)
Soil Vapor Measurements**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Soil Boring No.	Date of Measurement	Sample Depth (feet bls)	Headspace Readings (ppm)		
			Total Organic Reading	Carbon Filtered Reading	Net Reading
MW-1	9/8/98	2	ND	NA	ND
		4	ND	NA	ND
		6	ND	NA	ND
MW-2	9/8/98	2	ND	NA	ND
		4	ND	NA	ND
		6	ND	NA	ND
MW-5	9/8/98	2	ND	NA	ND
		4	ND	NA	ND
		6	ND	NA	ND
MW-6D	9/9/98	2	30	NA	30
		4	>1000	NA	>1000
		6	>1000	NA	>1000
		8	>1000	NA	>1000
		10	>1000	NA	>1000
		12	290	NA	290
		14	240	NA	240
		16	240	NA	240
		18	140	NA	140
		20	100	NA	100
		22	140	NA	140
		24	20	NA	20
		26	40	NA	40
		28	0	NA	0
30	0	NA	0		
32	0	NA	0		
34	0	NA	0		

Notes: NA=not available.

bls=below land surface.

ppm=part per million equivalent methane.

ND=not detected

Wet Soils encountered at depths ranging from approximately 3 to 6 feet bls.

piezometers P-1, P-2, and P-3, respectively. The piezometers were used to obtain water level measurement to determine relative groundwater elevations and flow direction. The piezometers were constructed of 1-inch ID, flush threaded, schedule 40 PVC riser from 1 foot above grade to 4 feet below land surface (bls) with 0.010-inch slotted screen interval from 4 to 9 feet bls. Well Completion logs are provided in **Appendix F**.

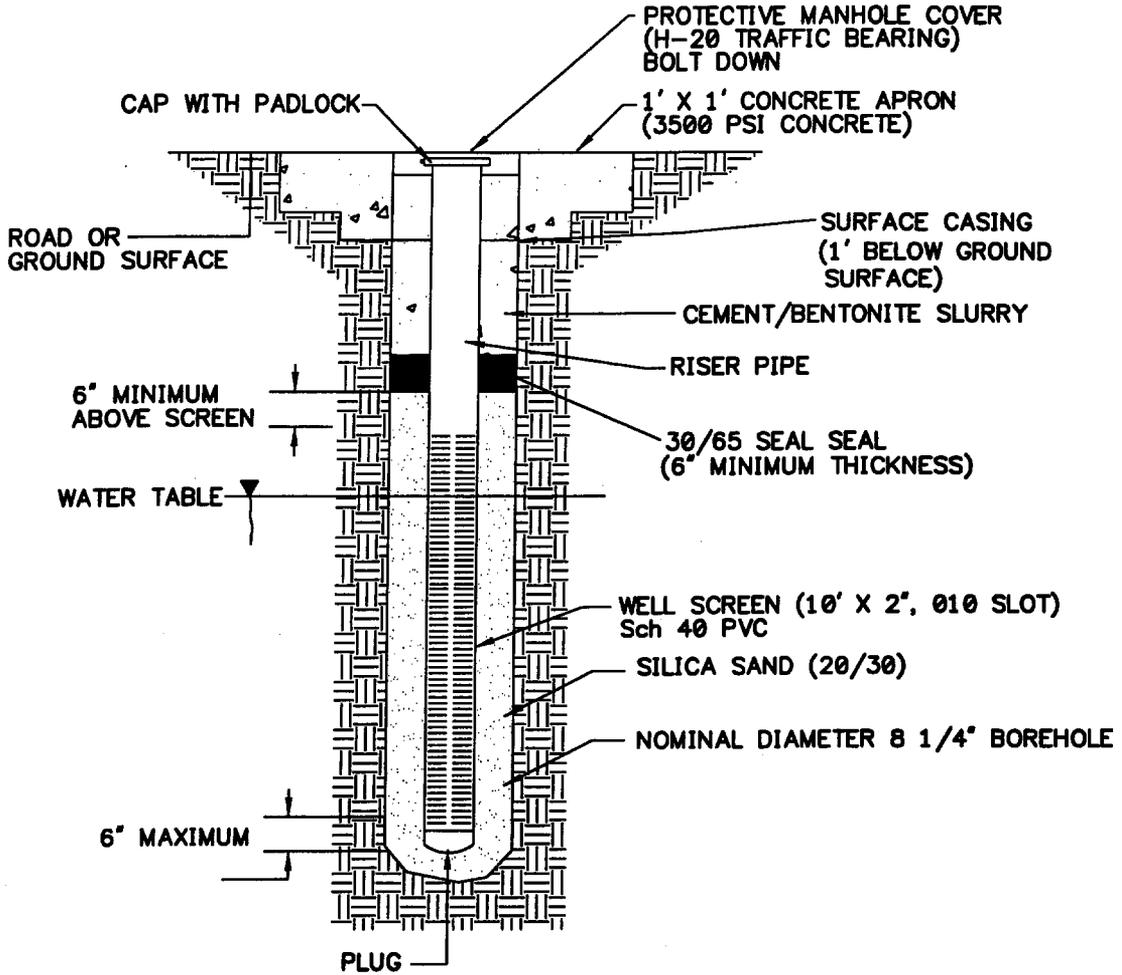
2.3.2 Monitoring Well Construction and Development

Monitoring wells were installed in conjunction with the soil boring procedures discussed above in Section 2.2.2. The monitoring wells were placed to provide spatial coverage around the site and to determine the presence and extent of dissolved and free product phase hydrocarbon plumes in the FFTF area.

Monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6D were advanced using 4 1/4-inch ID hollow-stem augers. Each well was constructed of 2-inch ID threaded, schedule 40 PVC solid riser and 0.010-inch slot well screen with a silt trap and well bottom cap. The shallow wells (MW-1 through MW-5) were installed to approximately 14 feet with a 10 foot screened interval. The deep well MW-6D was installed to 35 feet bls with a 5 foot screened interval. Each annulus was filled to approximately 2 feet above the well screen with US Standard Sieve size 20/30 silica sand. The 20/30 sand was capped to about 1 foot bls with 30/65 sand. The remainder of the annulus was grouted to the surface with a cement/bentonite grout. Each well is secured with a locking, watertight cap within a steel, 8-inch diameter steel manhole. The manhole was set within a 24-inch square apron finished slightly above grade. A well construction diagram is included as **Figure 2-3**. Well completion logs are provided in **Appendix F**.

Each well was developed using a submersible pump. During well development, field measurements of pH, temperature, and specific conductance were monitored from the purge water generated. The wells were developed under supervision of a geologist up to a maximum of one hour or until the field measurements became stable and the purge water clear. Water quality stabilization was determined using the following criteria: temperature +/-5°C, pH +/-0.1 unit, and specific conductance +/-10 umhos/cm. All development water was containerized for disposal in 55-gallon steel drums. The water in the drums was sampled prior to disposal. Analytical results are included in **Appendix E**.

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TYPICAL FLUSHMOUNT CONSTRUCTION
SHALLOW MONITORING WELL
 N.T.S.

DRAWN BY KW	DATE 1-7-99
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



2" GROUNDWATER MONITORING WELL DETAIL
 FORMER FIRE FIGHTING TRAINING FACILITY
 SITE ASSESSMENT, OU2
 NAS JACKSONVILLE
 JACKSONVILLE, FLORIDA

CONTRACT NO. 7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2-3	REV. 0

2.4 LITHOLOGIC SAMPLING

Representative soil samples were collected during the soil vapor assessment to assess the shallow subsurface geologic conditions at the site. Samples used for lithologic description were collected from a stainless steel split spoon sampler lined with plastic sleeves. Grab samples from soil cuttings generated during monitoring well installations were also used for lithologic description. Fifteen split spoon samples were taken during the deep well installation (MW-6D). Soil boring logs are included as **Appendix C**.

2.5 SOIL VAPOR ANALYSIS

Headspace analysis was conducted on soil samples collected during the soil vapor assessment (direct push borings and monitoring well installation borings) using an OVA-FID. The soil vapor analysis was performed according to the head space method prescribed in Rule 62-770.200 (2) FAC and described in **Appendix D**.

2.6 SOIL ANALYSIS

Upon completion of each direct push soil boring, a soil sample was retained from the interval that exhibited the highest OVA reading. The sample was placed in a 4-ounce glass jar and immediately provided to TEG Southeast for screening of TPH-DRO and BTEX. Data reports for the field screening of TPH-DRO and BTEX are included in **Appendix G**. Duplicate soil samples for fixed-based laboratory analysis were collected at soil borings SB-14, SB-15, and SB-17 and analyzed for EPA Method 8021B (volatile organic halocarbons and volatile organic aromatics), 8310 (polynuclear aromatic hydrocarbons), lead, 5035 (percent solids), FL PRO, and total organic carbon. The laboratory data reports are included in **Appendix H**.

2.7 HYDROLOGIC INVESTIGATION

2.7.1 Water Level Measurements

Water level measurements were collected to determine the depth to water in the surficial aquifer and to determine the relative groundwater flow direction. The depth to water in the piezometers (P-1, P-2, and P-3) and in the existing monitoring wells (MW-13, MW-14) was measured on July 8, 1998. The depth to water in MW-1, MW-2, MW-3, MW-4 MW-5 and MW-6D was measured on

September 22, 1998 and November 9, 1998. Measurements were collected from the north rim of the top of well casings using an electronic water level indicator.

The elevation of the north rim for each top of well casing (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6D, and existing wells MW-13, MW-14) was surveyed by ARC Surveying. Elevations refer to National Geodetic Vertical Datum 1929 (NGVD 29). The groundwater elevation was calculated by subtracting the depth to water from the top of casing elevation.

2.7.2 Aquifer Characteristics

On October 10, 1998, TtNUS performed aquifer slug tests on monitoring wells MW-1, MW-2 and MW-4. Each test was performed by displacing a volume of water with a Teflon bailer and recording the recharge rate of the displaced water in the well. The recharge rate was recorded using an electronic data logger and pressure transducer. The Bouwer and Rice methodology for partially penetrating wells in unconfined aquifers was utilized to calculate hydraulic conductivity values for the two monitoring wells as described by Bouwer, 1989 and Bouwer and Rice, 1976. Calculations were performed using the Aqtesolv™ aquifer characterization program as described in Duffield, 1998. Slug test data and calculations used to determine hydraulic conductivity are included in Appendix I.

2.7.3 Groundwater Flow Velocity and Transmissivity

The horizontal groundwater gradient across the site was evaluated from water level measurements collected on the dates described in Section 2.7.1. The groundwater gradient was calculated by determining the perpendicular distance between groundwater contours developed from groundwater elevation data. Groundwater gradient calculations are included in Appendix I.

The groundwater flow gradient was determined using the following equation:

$$i = \frac{h_1 - h_2}{d}$$

where:

i	=	the hydraulic gradient
h ₁	=	the water elevation at point 1
h ₂	=	the water elevation at point 2
d	=	the distance between point 1 and point 2

Potential movement of groundwater at the site may be described in terms of transportation by natural flow in the saturated zone while assuming groundwater flow follows Darcy's Law. Darcy's Law may be expressed as:

$$V = (k/n)*i$$

where:

V	=	average seepage velocity
K	=	hydraulic conductivity
n	=	effective porosity (assumed)
i	=	average hydraulic gradient

Site specific transmissivity is calculated using the following equation:

$$T = Kb_e$$

where:

T	=	transmissivity
K	=	hydraulic conductivity
b _e	=	affected aquifer thickness

The groundwater seepage velocity and aquifer transmissivity calculations are included in Appendix I.

2.8 WATER SAMPLING

2.8.1 Free Product Recovery and Sampling

On July 6, 1998, 1.5 feet of product was detected in monitoring well MW-13. Free product was not encountered in any of the other wells or piezometers installed or sampled during this investigation. Based upon the presence of free product in monitoring well MW-13, TtNUS over-developed the well.

From December 16, 1998, through December 19, 1998, TtNUS personnel performed a 72 – hour pump test on monitoring well MW-13 to attempt to capture the free product. A ½" pneumatic diaphragm pump, a 100 cfm capacity air compressor, and a FRAC truck were utilized to perform the pump test. During the pump test, the well yielded approximately 0.5 gallons per minute (gpm) of product and ground water. One week following completion of the pump test, TtNUS mobilized to the site to sample MW-1, MW-13, and MW-14 and to verify any presence of free product. MW-1 and MW-14 were sampled, and the results are presented in Table 3-5 and included in

Section 3.4 of the report. On December 23, 1998, 0.02 feet of free product was present in MW-13. As a result this well was not sampled.

2.8.2 Groundwater Sampling Direct-Push Investigation

During the direct-push field investigation, each soil boring was continued into the saturated zone to collect groundwater samples for mobile laboratory screening. The samples were collected using a detachable drive tip attached to a 24-inch long, retractable, stainless steel well screen encased in the lead probe tube. After the water sampler was advanced into the water bearing zone, the probe was withdrawn 24 inches to allow the retractable screen to open to the formation. For groundwater recovery a length of Tygon tubing was inserted into the probe and connected to a peristaltic pump. Several screen volumes were then pumped from the probe in order to reduce the turbidity level and ensure a representative sample. After purging, the groundwater samples were collected by pumping directly into 40 ml vials. The samples were immediately delivered to the on-site mobile laboratory for screening of BTEX and DRO constituents. The results of the mobile laboratory screening are summarized on Table 3-4 and presented in Appendix G.

2.8.3 Groundwater Sampling of Monitoring Wells

Groundwater sampling of monitoring wells was performed to determine the presence or absence of dissolved petroleum hydrocarbons in groundwater in the vicinity of the FFTF. Groundwater samples were collected by TtNUS personnel from MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6D on September 22, and September 23, 1998. In addition, monitor wells MW-1 and MW-14 were sampled on December 23, 1998. The groundwater samples were analyzed using EPA Method 239.2 for lead (unfiltered), EPA Method 504.1 for 1,2-dibromoethane (EDB), EPA Method 8310 for polynuclear aromatic hydrocarbons, EPA Method 8021 for purgeable aromatics and purgeable halocarbons, and FL PRO. During the September 1998 event, three of the wells (MW-2, MW-3, MW-4) were sampled for nitrate, sulfate and methane to evaluate the site's suitability for natural attenuation parameters. Prior to sampling, approximately three to five well volumes of groundwater was removed from each well using low flow quiescent sampling methods. Temperature, pH, specific conductance measurements and well purge volumes were recorded at the time of sample collection. Groundwater samples were placed on ice and shipped to Accutest Laboratories, Inc., Orlando, Florida.

**Table 2-2
Mobile Laboratory Groundwater Results**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	SGW-1	SGW-2	SGW-3	SGW-4	SGW-5	SGW-6	SGW-7	SGW-8
		7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98
<u>Boring depth (ft)</u>		11	11	10	11	10	10	10	10
<u>Volatile Organics Compounds (USEPA Method 8021B) (µg/L)</u>									
Benzene	1	5.2	ND	38.8	20.5	ND	29.1	10.2	28
Toluene	40	ND	2	2.2	ND	ND	2.3	4.2	ND
Ethylbenzene	30	7.6	ND	31.2	13.6	ND	22.1	50.4	25
Total Xylenes	20	5.7	4.7	72.3	41.3	ND	44.3	254.3	159
<u>FL-PRO (mg/L)</u>									
TPH DRO	5	ND	ND	1.7	2.24	ND	1.65	1.72	3.02
Notes at end of table.									

Table 2-2 (cont'd)
Mobile Laboratory Groundwater Results

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	SGW-9	SGW-10	SGW-11	SGW-12	SGW-13	SGW-14	SGW-15	SGW-16
		7/6/98	7/6/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98
<u>Boring depth (ft)</u>		8	10	10	10	8	9	7	8
<u>Volatile Organics Compounds (USEPA Method 8021B) (µg/L)</u>									
Benzene	1	ND	ND	74	12	54.7	4.5	64	122
Toluene	40	2.6	3.6	14	16	18.4	7	72	40
Ethylbenzene	30	ND	ND	105	12	48.3	3.1	126	179
Total Xylenes	20	ND	3.9	180	66	75	10.6	643	426
<u>FL-PRO (mg/L)</u>									
TPH DRO	5	ND	ND	18.67	42.79	9.92	ND	146.01	129.22
Notes at end of table.									

Table 2-2 (cont'd)
Mobile Laboratory Groundwater Results

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	SGW-17	SGW-18	SGW-19	SGW-20	SGW-21	SGW-22	SGW-23	SGW-24
		7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/8/98	7/8/98	7/8/98
<u>Boring depth (ft)</u>		9	9	8	10	10	10	9	8
<u>Volatile Organics Compounds (USEPA Method 8021B) (µg/L)</u>									
Benzene	1	22.1	89	42	18.1	ND	2.3	ND	ND
Toluene	40	8.5	135	67	6.5	6	4.7	2.8	3.4
Ethylbenzene	30	89.9	174	212	10.9	9	2.3	ND	ND
Total Xylenes	20	1755.1	588	760	38.9	30.5	9.7	4	4.5
<u>FL-PRO (mg/L)</u>									
TPH DRO	5	0.64	380.2	21.32	ND	ND	ND	ND	ND

¹Chapter 62-770, Florida Administrative Code (September 23, 1997).

Notes: USEPA=United States Environmental Protection Agency.
FDEP=Florida Department of Environmental Protection.
µg/L=microgram per liter.
mg/L=milligrams per liter.
ND=no constituents detected.
TPH DRO=Total Petroleum Hydrocarbons recovered.
ft=foot

All sampling activities were performed in accordance with the procedures prescribed in the FDEP Quality Assurance Sections: Standard Operating Procedures for Laboratory Operations and Sample Collection Activities, (DEP-001/92), adopted by TtNUS CQAP. In accordance with DEP-001/92 section 4.4.2, sample preservation was accomplished by obtaining pre-preserved containers from a laboratory with a DEP approved CQAP (Accutest Laboratories, Inc.). During the sampling events, quality control samples (e.g. equipment blanks and duplicates) were prepared and submitted to the laboratory as required by the approved CQAP. Sampling activities were documented in a site-specific field logbook, and samples were transmitted under chain-of-custody protocols to the laboratory. Groundwater laboratory data sheets are included in **Appendix G.**

3.0 RESULTS OF INVESTIGATION

3.1 SITE HYDROGEOLOGY

3.1.1 Lithology

The site is underlain by a brown to dark grey fine grained sand. This soil type extends to at least 35 feet bls, the maximum depth drilled during the contamination assessment investigation. Due to the homogeneity of the subsurface, no lithologic cross-section was constructed. Soil boring logs are included as Appendix C.

3.1.2 Aquifer Characteristics and Classification

The site is underlain by the surficial aquifer that is classified as a G-II aquifer by the State of Florida (Chapter 62-520.410 Florida Administrative Code (FAC)). During the assessment, the depth to the shallow aquifer ranged from approximately 2 to 6 feet bls. The depth to groundwater measurements are presented in Table 3-1.

Rising-head slug tests conducted at wells MW-1, MW-2, and MW-4 were used to estimate the hydraulic conductivity of the surficial aquifer at the FFTF. The geometric mean hydraulic conductivity for the surficial aquifer was estimated at approximately 1 foot/day as shown by the hydraulic conductivity calculations provided in Appendix I.

Using the groundwater flow gradient equation presented in Section 2.7.1, a hydraulic gradient of 0.003 feet/foot to the southeast was calculated from the data collected on September 22 and 23, 1998. The groundwater flow direction is depicted in Figure 3-1.

Lithologic data and available literature indicate the effective porosity of the soils comprising the surficial aquifer is approximately 0.25 (Driscoll, 1986).

Using a hydraulic conductivity of 1 foot/day, the hydraulic gradient of 0.003 feet/foot, an inferred effective porosity value of 0.25, and Darcy's Equation as stated in Section 2.7.3, the groundwater seepage velocity across the site was calculated at 0.012 feet/day in a south-southeast direction. Based on an estimated aquifer thickness of 70 feet, the transmissivity of the surficial aquifer was calculated at 70 ft²/day. The groundwater gradient and transmissivity calculations are included in Appendix I.

Table 3-1
Water Table Elevation and Monitoring Well Construction Data

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Monitoring Well ID	Screened Interval Depth (feet, bls)	Top-of Casing Elevation (feet)	10-Oct-96		6-Jul-98		8-Sep-98	
			Depth to Water Below Top of Casing (feet)	Water Elevation (feet)	Depth to Water Below Top of Casing (feet)	Water Elevation (feet)	Depth to Water Below Top of Casing (feet)	Water Elevation (feet)
MW-1	4 to 14	20.17	NA	NA	NA	NA	4.50	15.67
MW-2	4 to 14	20.84	NA	NA	NA	NA	4.50	16.34
MW-3	4 to 14	20.12	NA	NA	NA	NA	5.00	15.12
MW-4	5 to 15	20.52	NA	NA	NA	NA	5.50	15.02
MW-5	4 to 14	20.74	NA	NA	NA	NA	4.50	16.24
MW-6D	30 to 35	20.46	NA	NA	NA	NA	5.00	15.46
MW-13*	NA	20.74	6.00	14.74	NA	NA	NA	NA
MW-14	NA	20.80	4.35	16.45	6.02	14.78	NA	NA

See notes at end of table.

Table 3-1(cont'd)
Water Table Elevation and Monitoring Well Construction Data

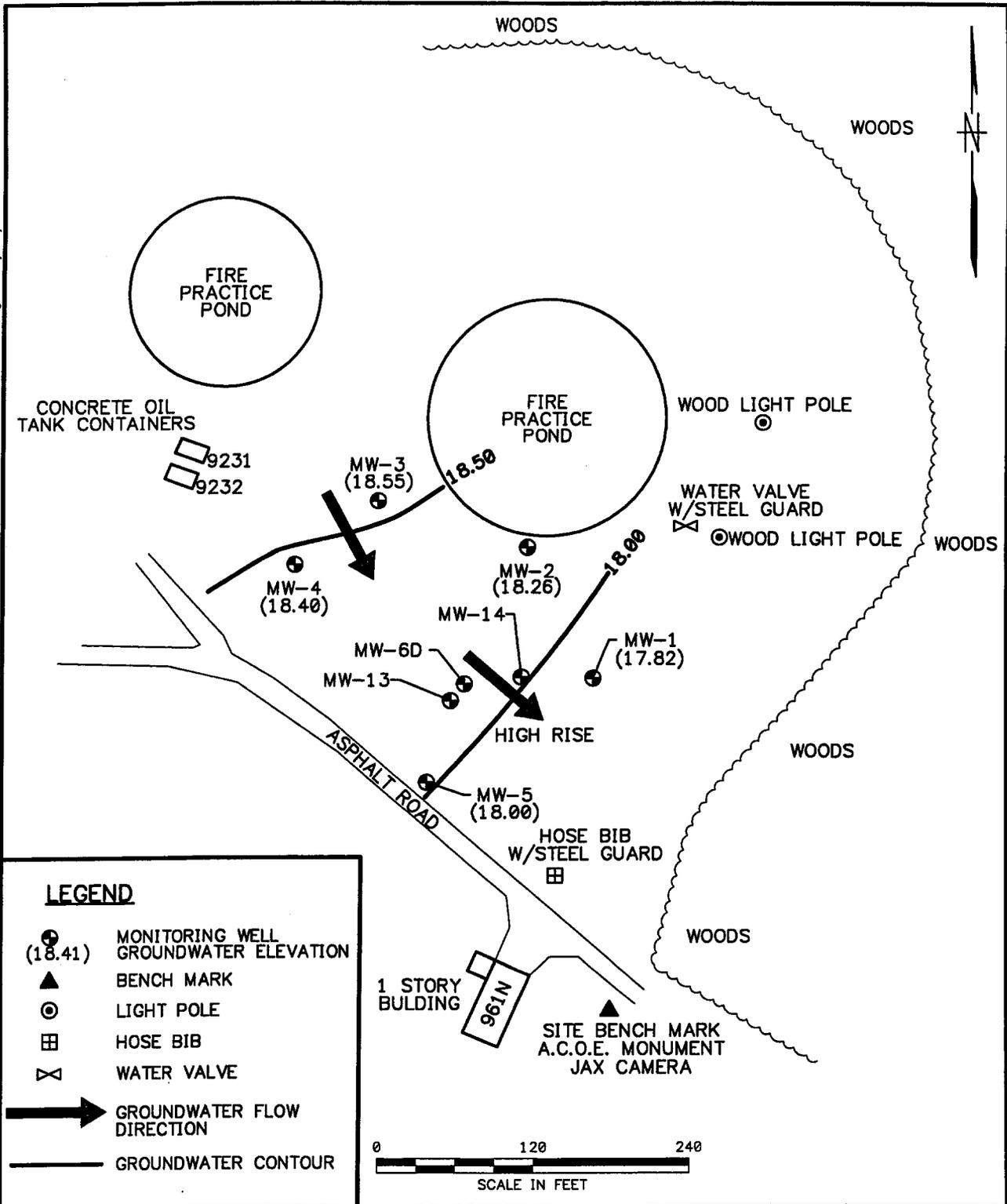
Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Monitoring Well ID	Screened Interval Depth (feet, bls)	Top-of Casing Elevation (feet)	22-Sep-98		9-Nov-98	
			Depth to Water Below Top of Casing (feet)	Water Elevation (feet)	Depth to Water Below Top of Casing (feet)	Water Elevation (feet)
MW-1	4 to 14	20.17	2.35	17.82	4.11	16.06
MW-2	4 to 14	20.84	2.58	18.26	4.8	16.04
MW-3	4 to 14	20.12	1.57	18.55	3.49	16.63
MW-4	5 to 15	20.52	2.12	18.40	3.57	16.95
MW-5	4 to 14	20.74	2.74	18.00	4.28	16.46
MW-6D	30 to 35	20.46	7.68	12.78	4.24	16.22
MW-13*	NA	20.74	NA	NA	NA	NA
MW-14	NA	20.80	NA	NA	4.31	16.49

Notes: *=1.5 ft of free product was found in MW-13 on 7-6-98 and .02 ft of free product was found on 12-23-98.

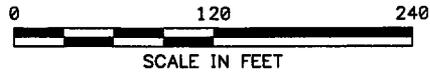
NA=not available.

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LEGEND

- (18.41) MONITORING WELL
GROUNDWATER ELEVATION
- ▲ BENCH MARK
- ⊙ LIGHT POLE
- ⊞ HOSE BIB
- ⊗ WATER VALVE
- ➔ GROUNDWATER FLOW DIRECTION
- GROUNDWATER CONTOUR



DRAWN BY MF	DATE 11/09/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



GROUNDWATER ELEVATION AND CONTOUR MAP
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

CONTRACT NO. 7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-1	REV. 0

3.2 SOIL QUALITY

The vertical and horizontal extent of petroleum impacted soil in the vadose zone was assessed through soil vapor analysis performed during the direct-push investigation and monitoring well installation as described in Sections 2.2.1 and 2.2.2. of this report. Results from the DPT mobile laboratory analysis are summarized in Table 3-2. Soil OVA headspace readings are provided on Table 2-1. These screening results were inconclusive due to the high organic content of this soil. Based upon mobile laboratory data, soils identified with high, medium, and low contaminant concentrations were found in SB-17, SB-15, and SB-14, respectively. These three borings were resampled to confirm the results through a fixed based laboratory. The soil was sampled for EPA 8021B, lead, 8310, FL PRO, and TOC. Tested constituents were not present in detectable concentrations in samples from SB-14 or SB-15. In SB-17, TPH was detected at 4970 mg/kg, above the FDEP Target level of 350 mg/kg. Fixed Based Laboratory soil quality data is summarized on Table 3-3. Soil boring locations and corresponding contaminant concentrations are depicted on Figure 3-2. The plume map has been drawn based on the OVA results per the data found in Table 2-1, the TPH mobile lab results (Table 3-2), and the fixed based lab TPH concentrations (Table 3-3). As shown in Figure 3-2, the soil plume has been defined.

3.3 MASS OF CONTAMINANT IN SOIL

The area of impacted soil was calculated by assuming a representative geometric shape (an ellipse), then calculating the area based on the equation:

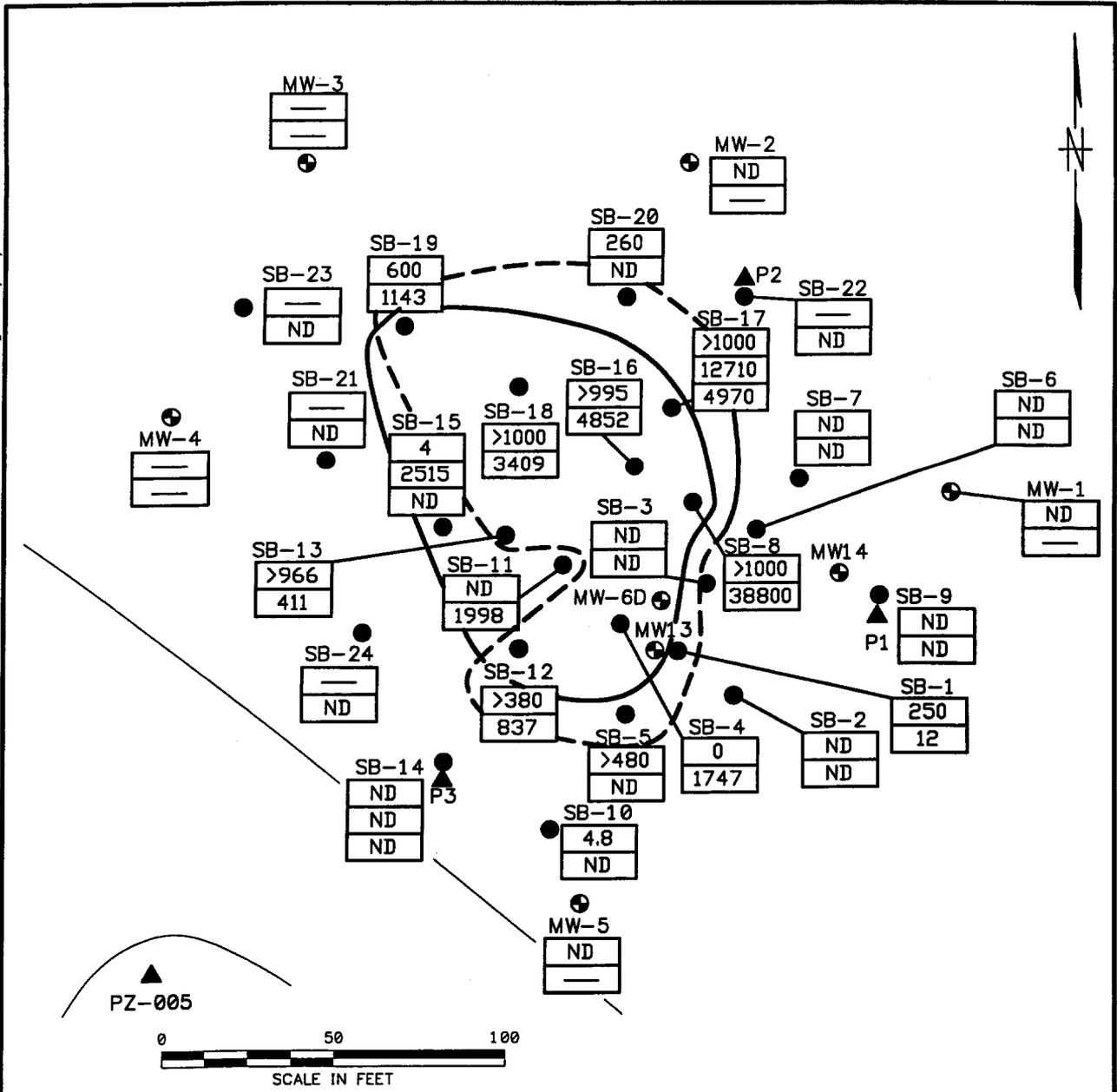
$$\text{Area} = \pi A_r B_r$$

Where: A = the long axis of the ellipse
 B = the short axis of the ellipse
 r = radius

The Volume was then calculated by using the equation:

$$\text{Volume} = (\text{Area})(\text{Depth})$$

Where: Area = calculated in square feet
 Depth = average vertical extent of contaminated soil in feet



LEGEND		SOIL CONCENTRATIONS	
●	SOIL BORING	50	OVA (ppm)
SB-1		350	TPH-DRO (mg/kg) (MOBILE)
⊕	MONITORING WELL	4970	TPH (mg/kg) (FIXED-BASED LAB)
MW13		---	50 ppm OVA LIMIT
▲	PIEZOMETER	---	350 TPH
P1		ND	NON DETECT

DRAWN BY	DATE
MF	8/7/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



SOIL TPH AND OVA MEASUREMENTS
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

CONTRACT NO.	
7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV.
FIGURE 3-2	0

**Table 3-2
Mobile Laboratory Soil Results**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	Soil Boring ID								
		SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-9
		7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98	7/6/98
Volatile Organics Compounds (USEPA Method 8021B) (mg/kg)										
Benzene	1.1	ND	ND	ND	0.05	ND	ND	ND	0.58	ND
Toluene	300	ND	ND	ND	0.03	ND	ND	0.038	0.3	ND
Ethylbenzene	240	ND	ND	ND	0.07	ND	ND	ND	0.79	ND
Total Xylenes	290	ND	ND	ND	0.3	ND	0.167	0.323	3.29	ND
FL-PRO (mg/kg)										
TPH DRO	350	12	ND	ND	1747	ND	ND	ND	38800	ND
Notes at end of table.										

Table 3-2 (cont'd)
Mobile Laboratory Soil Results

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	Soil Boring ID								
		SB-10	SB-11	SB-12	SB-13	SB-14	SB-15	SB-16	SB-17	SB-18
		7/6/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98
Volatile Organics Compounds (USEPA Method 8021B) (mg/kg)										
Benzene	1.1	ND	0.28	0.019	0.12	ND	0.142	0.22	1	0.43
Toluene	300	ND	0.16	0.006	0.108	0.012	0.097	0.59	0.5	0.36
Ethylbenz	240	ND	0.18	0.008	0.122	ND	0.202	1.35	2.5	0.52
Total Xyle	290	ND	0.93	0.027	0.374	0.014	0.733	2.74	10.4	1.31
FL-PRO (mg/kg)										
TPH DRO	350	ND	1998	837	411	ND	2515	4852	12710	3409
Notes at end of table.										

**Table 3-2 (cont'd)
Mobile Laboratory Soil Results**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	Soil Boring ID							
		SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25*	SB-26*
		7/7/98	7/7/98	7/7/98	7/8/98	7/8/98	7/8/98	7/8/98	7/8/98
Volatile Organics Compounds (USEPA Method 8021B) (mg/kg)									
Benzene	1.1	0.175	ND	ND	ND	ND	ND	0.051	0.149
Toluene	300	0.171	ND	ND	ND	ND	ND	0.016	0.077
Ethylbenzene	240	0.191	ND	ND	ND	ND	ND	0.042	0.106
Total Xylenes	290	0.445	ND	ND	ND	ND	ND	0.141	0.463
FL-PRO (mg/kg)									
TPH DRO	350	1143	ND	ND	ND	ND	ND	3678	4958

¹Chapter 62-770, Florida Administrative Code (September 23, 1997).

Notes: USEPA=United States Environmental Protection Agency.
FDEP=Florida Department of Environmental Protection.
mg/kg=milligrams per kilogram.
ND=no constituents detected.
TPH DRO=Total Petroleum Hydrocarbons Diesel Range Organics.
*=SB-25 is a duplicate of SB-4 and SB-26 is a duplicate of SB-11.

**Table 3-3
Confirmatory Soil Sampling Analytical Results**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	Boring ID.		
		SB-14L	SB-15M	SB-17H
		9/8/98	9/8/98	9/8/98
<u>Volatile Organic Compounds (USEPA Method 8021B)(µg/kg)</u>				
Benzene	1100	ND	ND	ND
Ethylbenzene	240000	ND	ND	352
Total Xylenes	290000	ND	ND	3430
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310)(µg/kg)</u>				
Naphthalene	1000000	ND	ND	3280
Acenaphthene	2300000	ND	ND	2310
Fluoranthene	2800000	ND	ND	1690
Phenanthrene	1900000	ND	ND	1800
Pyrene	2200000	ND	ND	453
Fluorene	2100000	ND	ND	243
<u>FLORIDA-PRO(mg/kg)</u>				
TPH	350	ND	7.9	4970
<u>Metals Analysis(mg/kg)</u>				
Lead	500	ND	ND	ND

¹Chapter 62-770, Florida Administrative Code (September 23, 1997).

Notes: USEPA=United States Environmental Protection Agency.
FDEP=Florida Department of Environmental Protection.
µg/kg=micrograms per kilogram.
mg/kg=milligrams per kilogram.
ND=no constituents detected.
TPH=total petroleum hydrocarbons.
FLORIDA-PRO=Florida-Petroleum Range Organics.

The mass of the contaminants in vadose zone soil was not calculated because the bulk of soil contamination at this site appears to be present within the "smear" zone (the area between the site's seasonal high and low water tables).

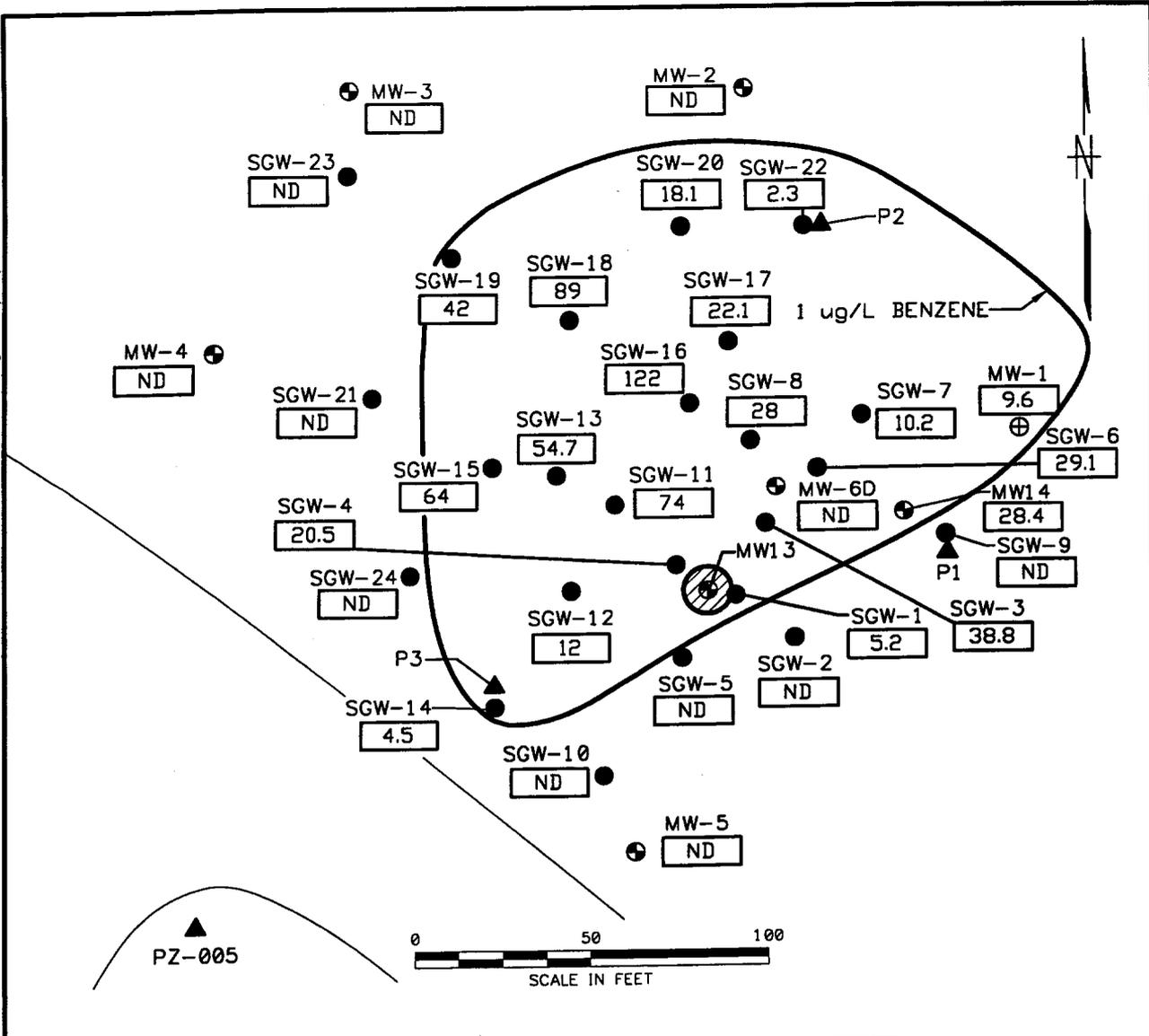
Soil volume calculations for the site are provided in **Appendix I**.

3.4 WATER QUALITY

Groundwater quality results from the mobile laboratory field screening reported exceedance for BTEX and TPH-DRO in borings SGW-1, SGW-3, SGW-4, SGW-6, SGW-7, SGW-8, SGW-11, SGW-12, SGW-13, SGW-14, SGW-15, SGW-16, SGW-17, SGW-18, SGW-19, SGW-20, SGW-21, and SGW-22. The mobile laboratory results are presented in **Figures 3-3, 3-4, 3-5, and 3-6** and in **Table 2-2**.

Analytical results from the September 1998 sampling event indicated no regulatory exceedances in the groundwater samples collected from monitoring well MW-2, MW-3, MW-4, and MW-5. Monitoring wells MW-1 and MW-14 contained benzene, xylene, naphthalene, and TPH in concentrations above FDEP target levels. MW-6D also contained TPH above FDEP's 5 mg/l target level. A summary of groundwater analytical results is presented in **Table 3-4**. Groundwater laboratory analytical results are provided as **Appendix J**.

ACAD:7B49CM17.dwg 01/18/99 KW



LEGEND

- SOIL BORING
- ⊕ MONITORING WELL
- ▲ PIEZOMETER
- SB-1
- MW13
- P1

GROUNDWATER CONCENTRATIONS

- ND BENZENE (ug/L)
- ND NON DETECT
- 1 ug/L FDEP LIMIT FOR BENZENE
- ⊘ FREE PRODUCT LIMIT

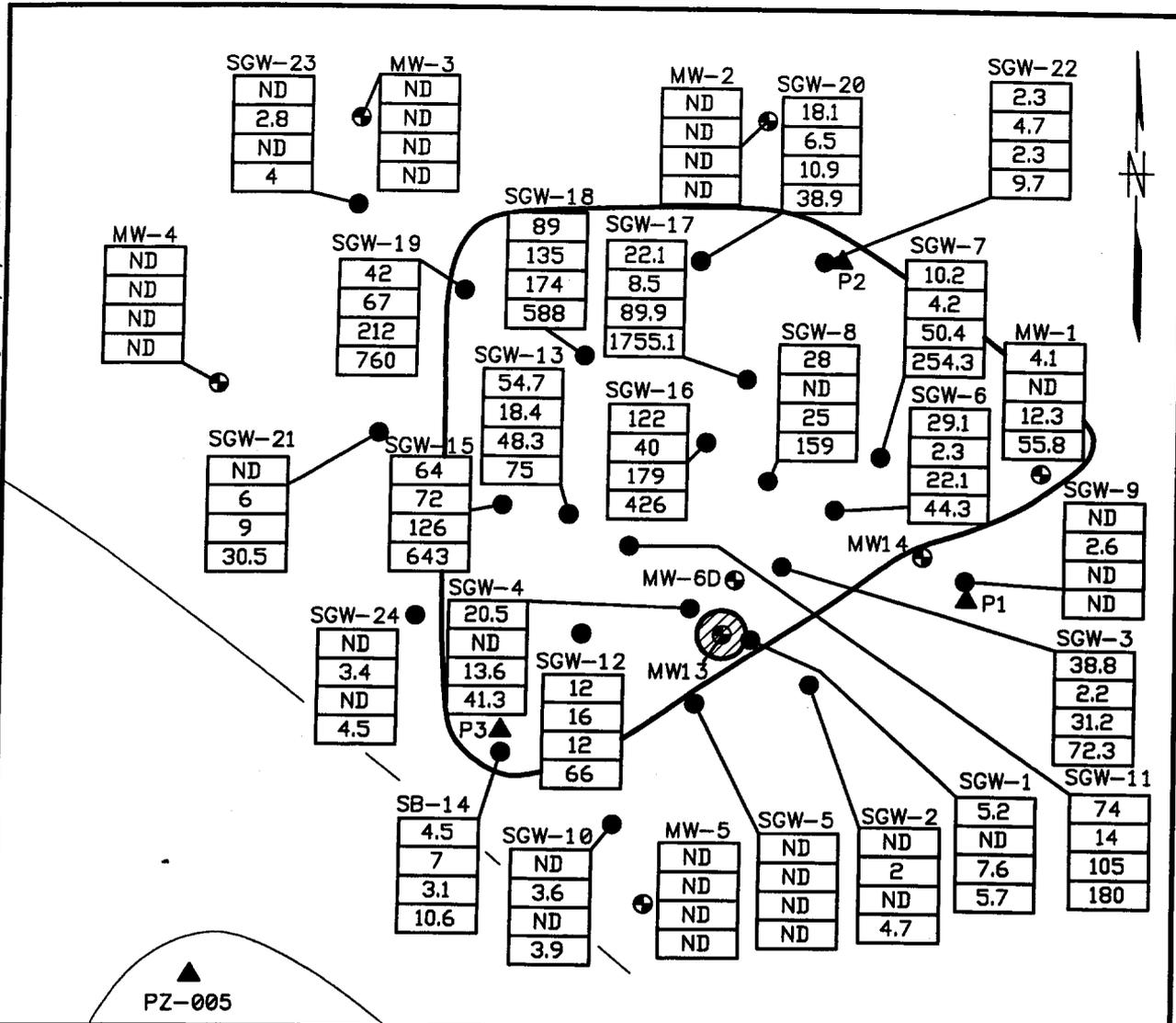
DRAWN BY	DATE
MF	11/09/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



BENZENE IN GROUNDWATER
FORMER FIRE FIGHTER TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACKSONVILLE, FLORIDA

CONTRACT NO.	
7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV.
FIGURE 3-3	0

ACAD: 7849CM20.dwg 01/12/99 KW



LEGEND

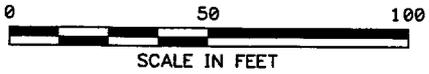
- SB-1 SOIL BORING
- ▲ P1 PIEZOMETER
- ⊕ MW-1 MONITORING WELL
- ▨ FREE PRODUCT LIMIT

GROUNDWATER CONCENTRATIONS

ND	BENZENE (ug/L)
ND	TOLUENE (ug/L)
ND	ETHYLBENZENE (ug/L)
ND	XYLENE (ug/L)

ND NON DETECT

— TOTAL VOA MAP EXCEEDANCE



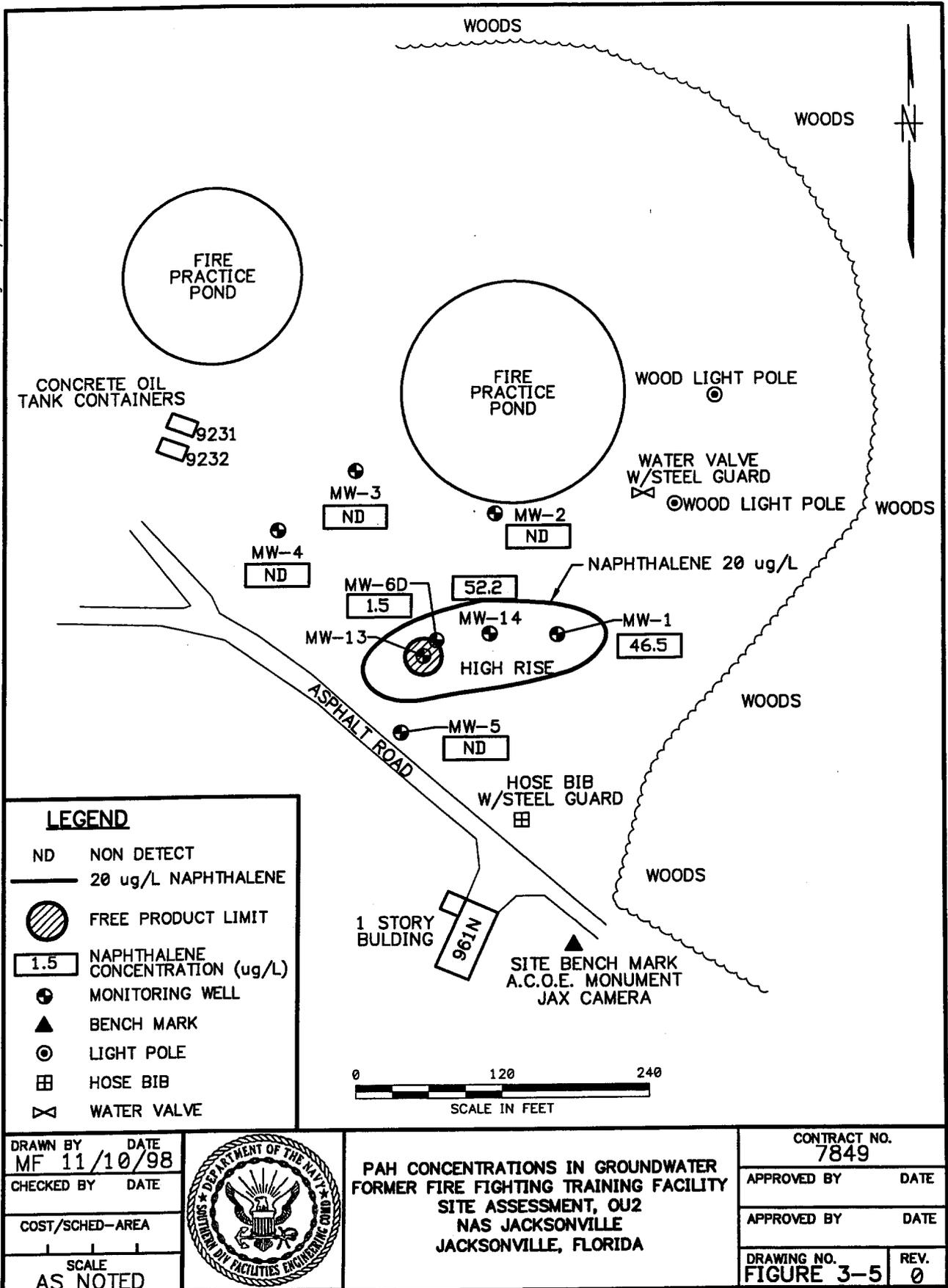
DRAWN BY	DATE
MF	11/10/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



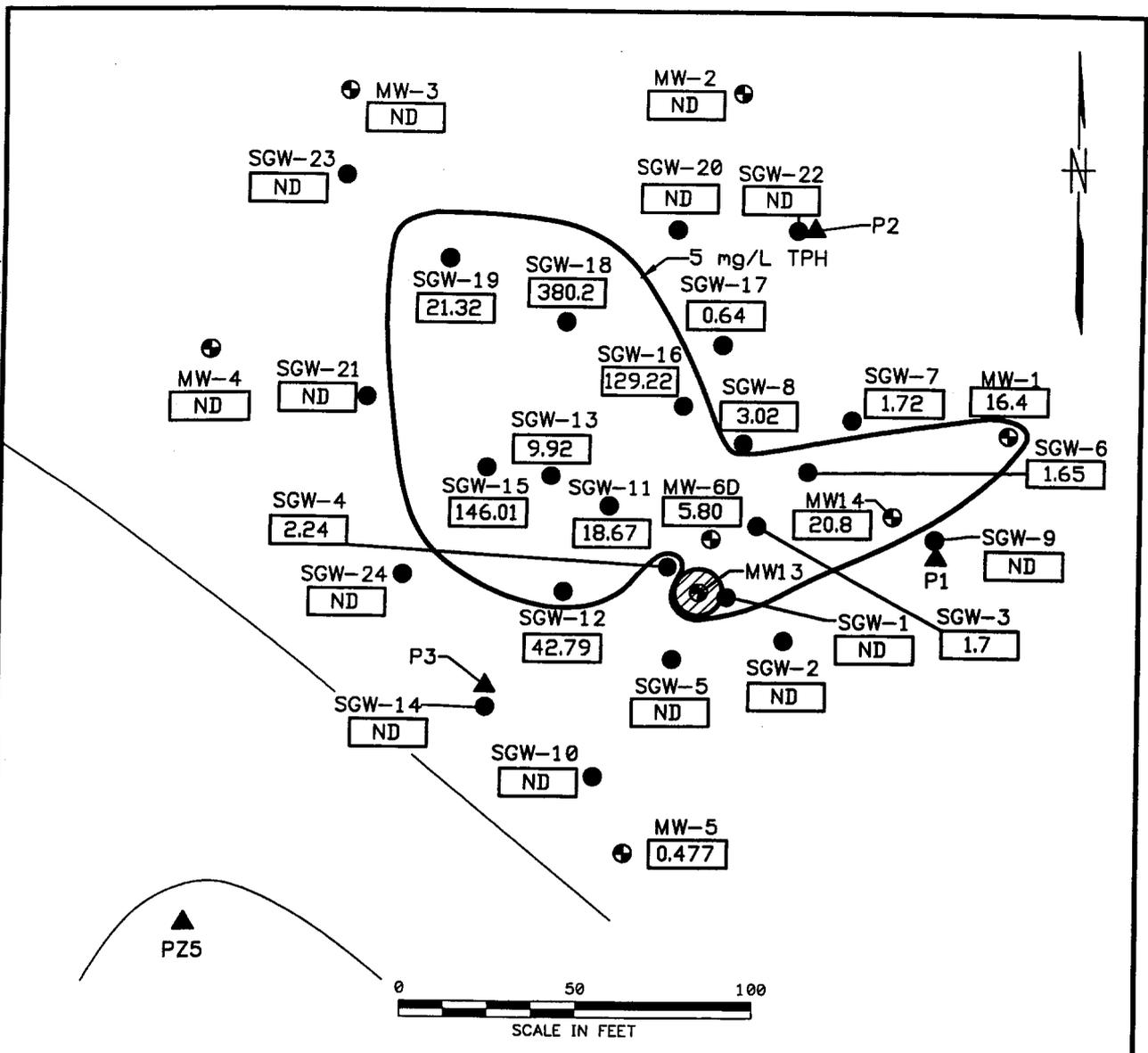
**TOTAL VOA IN GROUNDWATER
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACSONVILLE, FLORIDA**

CONTRACT NO. 7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-4	REV. 0

ACAD:7849CM19.dwg 01/12/99 KW



ACAD: 7849CM1B.dwg 01/12/99 KW



LEGEND

- SB-1 SOIL BORING
- ⊕ MW13 MONITORING WELL
- ▲ PZ-005 PIEZOMETER

- GROUNDWATER CONCENTRATIONS**
- ND TPH-DRO (mg/L)
 - ND NON DETECT
 - 5 mg/L LIMIT
 - ⊘ FREE PRODUCT LIMIT

DRAWN BY	DATE
MF	11/09/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



TPH CONCENTRATIONS IN GROUNDWATER
FORMER FIRE FIGHTING TRAINING FACILITY
SITE ASSESSMENT, OU2
NAS JACKSONVILLE
JACSONVILLE, FLORIDA

CONTRACT NO.	
7849	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV.
FIGURE 3-6	0

**Table 3-4
Summary of Groundwater Quality**

Site Assessment Report
Former Fire Fighting Training Facility
Naval Air Station Jacksonville
Jacksonville, Florida

Compound	FDEP Target Level ¹	MW-1		MW-2	MW-3	MW-4	MW-5	MW-6D	MW-13 *	MW-14
		9/22/98	12/23/98	9/22/98	9/22/98	9/22/98	9/22/98	9/23/98	12/23/98	12/23/98
<u>Volatile Organic Compounds (USEPA Method 8021B)(µg/L)</u>										
Benzene	1	4.1	9.6	ND	ND	ND	ND	ND	NS	28.4
Ethylbenzene	30	12.2	20.9	ND	ND	ND	ND	ND	NS	25.3
Total Xylenes	20	55.8	53.2	ND	ND	ND	ND	ND	NS	22
MTBE	35	ND	ND	ND	ND	ND	ND	ND	NS	0.98
<u>USEPA 504.1(µg/L)</u>										
EDB	0.02	ND	ND	ND	ND	ND	ND	ND	NS	ND
<u>Polynuclear Aromatic Hydrocarbons(USEPA Method 8310)(µg/L)</u>										
Naphthalene	20	33.5	46.5	ND	ND	ND	ND	ND	NS	52.2
<u>FLORIDA-PRO(mg/L)</u>										
TPH(C8-C40)	5	16.4	20.4	ND	ND	ND	0.477	5.8	NS	20.8
<u>Metals Analysis(µg/L)</u>										
Total Lead	15	3.2	3	<3.0	<3.0	<3.0	<3.0	3.7	NS	4.9

¹ Chapter 62-770, Florida Administrative Code (September 23, 1997).

Notes: * .02 feet of free product was detected on 12/23/98 therefore well was not sampled.

NS=not sampled.

USEPA=United States Environmental Protection Agency.

FDEP=Florida Department of Environmental Protection.

µg/L=micrograms per liter.

mg/L=milligrams per liter.

FLORIDA-PRO=Florida-Petroleum Range Organics

MTBE=methyl tert-butyl ether.

TPH=total petroleum hydrocarbons.

EDB=1,2 Dibromoethane=ethylene dibromide.

4.0 DISCUSSION

The former FFTF was previously investigated under the Installation Restoration Program. An estimated 6,000 gallons of fuel per year were disposed of through fire fighting training at the site for a period of 25 years. Data gathered during a Focused Remedial Investigation and Remedial Investigation prepared by ABB Environmental documented the presence of liquid phase product in monitoring wells. During an excavation project performed by Bechtel, 2,422 cubic yards of petroleum impacted soils were removed from the subject site. The excavated soil was processed through a thermal treatment unit, and the pit was back filled with the treated soil. The back filled soil in the FFTF is suspected to have been re-contaminated due to fluctuations of groundwater elevations in the smear zone. As a result, the Site Assessment Report field investigations were begun by TtNUS in July 1998.

Twenty six borings were advanced to delineate the soil and groundwater hydrocarbon plumes. Five shallow monitoring wells and one deep monitoring well were drilled and sampled to confirm the delineation of the groundwater. A pumping test was performed in an attempt to capture and remove free product from the vicinity of MW-13 (positioned near the center of the FFTF). Slug tests were performed to calculate the hydraulic conductivity, and a site survey was performed to depict the locations and elevations of site features and the groundwater monitoring wells.

Based upon the on-site laboratory sampling results and the confirmatory fixed based laboratory results, groundwater contamination appears to be defined by newly installed wells (MW-1 through MW-5) as depicted in Figure (3-3, 3-4, 3-5, and 3-6).

Based on soil screening data from an on-site mobile laboratory and fixed based lab results, the contaminants appear to be smeared through the soil from 3 to 6 feet bls in the area depicted in Figure 3-2.

The groundwater flow was determined to be in a south to southeasterly direction. The hydraulic conductivity was determined to be 1 ft/day, the hydraulic gradient was determined to be 0.003 ft/ft, the groundwater seepage velocity was determined to be 0.012 ft/day, and the transmissivity was calculated to be 70 ft²/day.

The surficial aquifer is classified as a GII aquifer, and the predominant soil type is fine grained sand. During the investigation, the depth to groundwater ranged from 2 to 6 ft bls.

At least seven wells are located within a half mile radius of the site. Available information indicates the wells range from 500 to 770 feet in depth. These wells are utilized for irrigation purposes with the exception of one potable well.

5.0 CONCLUSION AND RECOMMENDATION

The results of the SA at the FFTF suggest the following:

- Groundwater in the surficial aquifer at the site has a G-II classification;
- One potable water well and several irrigation wells were identified within a 0.5-mile radius of the site;
- During the SA "excessively contaminated" soil was encountered at 3 to 6 feet below land surface within the perimeter of the newly installed wells;
- Free product was encountered in MW-13 at the site (initially, 1.5 ft thick was present; following the pump test approximately 0.02 ft was detected).

Fixed based laboratory analysis of groundwater samples indicate samples from monitoring well MW-1 and MW-14 contain petroleum constituents with concentrations exceeding FDEP Target levels for benzene, xylenes, naphthalene, and TPH. MW-6D, the site's vertical extent well, exceeded Target levels for TPH only. All other groundwater samples were non-detect or below Target levels.

Based on the DPT investigation, the fixed-based laboratory results, and screening with the OVA, the site has a soil contaminant plume within the "smear zone" from 3 to 6 ft bls. Contaminated soil is located in the area of the former FFTF pit and has been delineated (Figure 3-2).

Free product is present in one of the site's monitoring wells, MW-13. Free product was not detected in any of the other borings, wells, or piezometers installed during this assessment.

Due to the presence of free product and the presence of groundwater and soil contamination, TtNUS recommends the preparation of a Remedial Action Plan (RAP) be prepared for the FFTF. Prior to development of the RAP, one additional monitoring well will be installed approximately 20 feet east of monitoring well MW-1. This well will delineate the eastern extent of groundwater contamination at the site.

6.0 REFERENCES

ABB Environmental Services, Inc., 1994, Focused Remedial Investigation and Feasibility Study, Naval Air Station Jacksonville, Florida

Bechtel Environmental, Inc., 1996, Completion Report for PSC 2 Former Firefighter Training Area, Naval Air Station Jacksonville, Florida.

Bouwer, H. and R.C. Rice. 1976. A slug test for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells. Water Resources Research. V 12, pp. 423-428.

Driscoll, Fletcher G. 1986 Groundwater and Wells, St. Paul Minnesota.

APPENDIX A
SAR SUMMARY SHEET

CONTAMINATION ASSESSMENT REPORT SUMMARY SHEET

Facility Name: Former Firefighting Training Facility NASJAX Reimbursement Site
 Location: Naval Air Station, Jacksonville, Florida State Contract Site
 EDI #: _____ FAC I.D. #: _____ Other:

(1) Source of spill: Operational spill 6,000 gal. per year burned from 1966-1991
 Date of spill: _____

(2) Type of product:	<u>gasoline group</u>	<u>gasoline lost</u>	<u>kerosene group</u>	<u>gallons lost</u>
	<input type="checkbox"/> leaded	_____	<input type="checkbox"/> kerosene	_____
	<input type="checkbox"/> unleaded regular	_____	<input type="checkbox"/> diesel	_____
	<input type="checkbox"/> unleaded premium	_____	<input checked="" type="checkbox"/> JP-4 Jet fuel	_____
	<input type="checkbox"/> gasohol	_____	<input type="checkbox"/> Jet A fuel	_____

(3) Description of IRA (if any): Source removal was performed to remove the excessively contaminated soils.

Free product removal: 1 (gals)
 Soil removal: 2422 (cubic yds)
 Soil incineration: unknown (cubic yds)

(4) Free product still present? (yes/no) Maximum apparent product thickness: 0.02 (ft)
 (5) Maximum groundwater contaminant levels (ppb):
 Total VOA: 83.7 benzene: 9.6 EDB: ND
 lead: 4.9 MTBE: 0.98 other: _____

(6) Brief lithologic description: tan fine grained sand with some organics. consistent throughout - area was backfilled with treated soil.

(7) Areal and vertical extent of soils contamination defined? (yes/no)
 High current soil concentration (OVA: >1000 ppm) or (EPA Method 5030/8020: 3782 ppb)
 (8) Lower aquifer contaminated? (yes/no) Depth of vertical contamination: approx. 6 feet
 (9) Date of last complete round of groundwater sampling: 9/23/98. Date of last soil sampling: 9/8/98.
 (10) QAPP approved? (yes/no) Date: Number 980038 - 1/92
 (11) Direction (e.g. NNW) of surficial groundwater flow: southeast (Figure 3-1 on page 3-3)
 (12) Average depth of groundwater: 5 (ft)
 (13) Observed range of seasonal groundwater fluctuations: 3 - 8 (ft)
 (14) Estimated rate of groundwater flow: 0.012 (ft/day)
 (15) Hydraulic gradient across site: 0.003 (ft/ft)

(16) Aquifer characteristics:	<u>Value</u>	<u>Units</u>	<u>Methods</u>
Hydraulic conductivity	<u>1</u>	<u>ft/day</u>	<u>slug test</u>
Storage coefficient	<u>--</u>	<u>---</u>	<u>-----</u>
Aquifer thickness	<u>70</u>	<u>ft2/day</u>	<u>site specific data</u>
Effective soil porosity	<u>0.25</u>	<u>--</u>	<u>Driscoll</u>
Transmissivity	<u>70</u>	<u>ft2/day</u>	<u>site specific data</u>

(17) Other remarks: _____

APPENDIX B
ENVIRONMENTAL DATA RESOURCE GEOCHECK REPORT



The EDR-GeoCheck[®] Report

**Former Fire Fighting Training
Former Fire Fighting Training
Jacksonville, FL 32215**

Inquiry Number: 305185.1s

October 22, 1998

***The Source*
For Environmental
Risk Management
Data**

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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GeoCheck Summary.....	3
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Government Records Searched.....	A8

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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THE EDR GEOCHECK™ REPORT

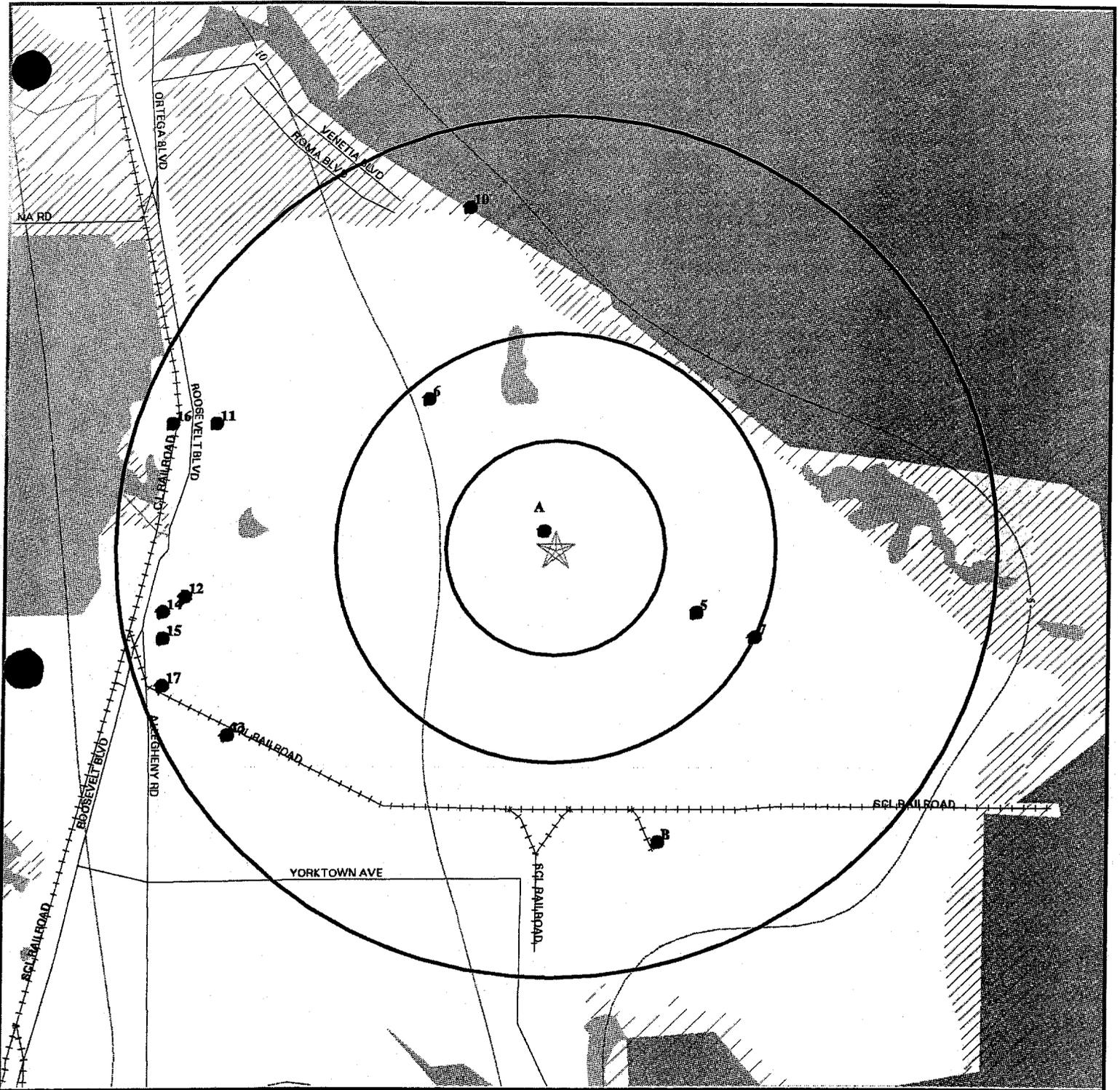
The EDR GeoCheck™ Report is a screening tool designed to assist in the hydrogeological assessment of a particular geographic area based upon publicly available information.

The EDR GeoCheck™ Report consists of the following information within a customer specified radius of the target property.

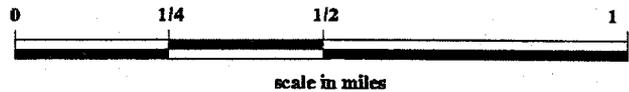
- topography (25 foot intervals unless otherwise shown)
- major roads
- surface water bodies
- railroad tracks
- flood plains (available in selected counties)
- wetlands (available in selected counties)
- wells including depth to water table and water level variability (in federal and selected state databases)
- public water supply wells (including violations information)
- geologic data
- radon data.

The EDR GeoCheck™ Report is a general area study. It may or may not be accurate at any specific location.

TOPOGRAPHIC MAP -305185.1s - 'Tetra Tech NUS Jacksonville'



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92



— Major Roads

— Contour lines (25 foot interval unless otherwise shown)

— Waterways

● - Wells within search distance to Target Property

○ - Earthquake Epicenters (Richter 5 or greater)

— Power lines

— Pipe lines

— Fault lines

■ - Water

■ - Wetlands

▨ - 100-year flood zone

▨ - 500-year flood zone



TARGET PROPERTY: Former Fire Fighting Training
ADDRESS: Former Fire Fighting Training
CITY/STATE/ZIP: Jacksonville FL 32215
LAT/LONG: 30.2364 / 81.6826

CUSTOMER: Tetra Tech NUS Jacksonville
CONTACT: Stacey Stanley
INQUIRY #: 305185.1s
DATE: October 22, 1998

WELL SEARCH SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code: Qh
 Era: Cenozoic
 System: Quaternary
 Series: Holocene

ROCK STRATIGRAPHIC UNIT†

Category: Stratified Sequence

SEARCH DISTANCE RADIUS INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal Database	1.000
State Database	1.000
PWS Database	1.000

FEDERAL DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
Ku — A4	301415081410101	0 - 1/8 Mile NNW
— A3	301414081410101	0 - 1/8 Mile NNW
ky B8	301335081404301	1/2 - 1 Mile SSE
B9	301333081404301	1/2 - 1 Mile SSE
10	301452081411001	1/2 - 1 Mile NNW
13	301348081414201	1/2 - 1 Mile WSW
14	301403081415101	1/2 - 1 Mile West
15	301400081415101	1/2 - 1 Mile WSW
17	301354081415101	1/2 - 1 Mile WSW

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A1	2-031-0014AUNMGFR	0 - 1/8 Mile NNW
A2	2-031-0014AUNMGFR	0 - 1/8 Mile NNW
5 1/2	2-031-0014AUNMGFR	1/4 - 1/2 Mile ESE
6 1/2	2-031-0068AURM	1/4 - 1/2 Mile NW

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 7 1/2
 PWS ID: FL2164156
 Location Relative to TP: 1/2 - 1 Mile ESE
 PWS Name: WOODSIDE NURSERY AND DAY CARE
 12339 WOODSIDE LANE
 JACKSONVILLE, FL 32223
 PWS currently has or has had major violation(s): Yes

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

WELL SEARCH SUMMARY

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 11
 PWS ID: FL2161150
 Location Relative to TP: 1/2 - 1 Mile WNW
 PWS Name: TRAILER TERRACE T.P. 1&2
 5939 ROOSEVELT BLVD
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

Map ID: 12
 PWS ID: FL2161329
 Location Relative to TP: 1/2 - 1 Mile West
 PWS Name: AZALEA MHP
 6301 ROOSEVELT BLVD.
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

Map ID: 16
 PWS ID: FL2160168
 Location Relative to TP: 1/2 - 1 Mile WNW
 PWS Name: CARDINAL VILLAGE MHP
 6075 ROOSEVELT BLVD.
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

AREA RADON INFORMATION

DUVAL COUNTY, FL

Number of sites tested: 102

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.480 pCi/L	100%	0%	0%
Basement	0.380 pCi/L	100%	0%	0%

WELL SEARCH FINDINGS

Map ID
Direction
Distance

A4
NNW
0 - 1/8 Mile

Site ID:	301415081410101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type	County:	Duval
Year Constructed:	1981	State:	Florida
Altitude:	20.00 ft.	Topographic Setting:	Hilltop
Well Depth:	770.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Not Reported
Date Measured:	Not Reported		

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

A3
NNW
0 - 1/8 Mile

Site ID:	301414081410101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type	County:	Duval
Year Constructed:	1942	State:	Florida
Altitude:	20.00 ft.	Topographic Setting:	Hilltop
Well Depth:	500.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

A1
NNW
0 - 1/8 Mile

District:	St. John's River District	WELL Number:	M
ID:	2-031-0014AUNMGFR	Longitude:	81 40 59
Date of Construction:	Not Reported	Depth:	Not Reported
Latitude:	30 14 13	Section:	339
Diameter (in inches):	4.0		
Township:	26		

Name:	UNITED STATES NAVY		
Address:	ATTN: JEROME JACKSON NAVY PUBLIC WORKS CTR JACKSONVILLE JACKSONVILLE, FL 32212-0030		
Permit Number:	2-031-0014UNMGFR	County:	DUVAL
Project:	COMMERCIAL/INDUSTRIAL LANDSCAPE		

WELL SEARCH FINDINGS

Map ID
Direction
Distance

A2
NNW
0 - 1/8 Mile

District: St. John's River District
 ID: 2-031-0014AUNMGFR WELL Number: L
 Date of Construction: Not Reported
 Latitude: 30 14 12 Longitude: 81 41 02
 Diameter (in inches): 6.0 Depth: Not Reported
 Township: 26 Section: 339

Name: UNITED STATES NAVY
 Address: ATTN: JEROME JACKSON
 NAVY PUBLIC WORKS CTR JACKSONVILLE
 JACKSONVILLE, FL 32212-0030

Permit Number: 2-031-0014UNMGFR County: DUVAL
 Project: COMMERCIAL/INDUSTRIAL LANDSCAPE

5
ESE
1/4 - 1/2 Mile

District: St. John's River District
 ID: 2-031-0014AUNMGFR WELL Number: G
 Date of Construction: Not Reported
 Latitude: 30 14 03 Longitude: 81 40 38
 Diameter (in inches): 4.0 Depth: 500'
 Township: 26 Section: 339

Name: UNITED STATES NAVY
 Address: ATTN: JEROME JACKSON
 NAVY PUBLIC WORKS CTR JACKSONVILLE
 JACKSONVILLE, FL 32212-0030

Permit Number: 2-031-0014UNMGFR County: DUVAL
 Project: COMMERCIAL/INDUSTRIAL LANDSCAPE

6
NW
1/4 - 1/2 Mile

District: St. John's River District
 ID: 2-031-0068AURM WELL Number: A
 Date of Construction: Not Reported
 Latitude: 30 14 29 Longitude: 81 41 15
 Diameter (in inches): 11.0 Depth: UNKNOWN
 Township: 27 Section: 315

Name: TIMUQUANA COUNTRY CLUB
 Address: 4028 TIMUQUANA ROAD
 JACKSONVILLE, FL 32210

Permit Number: 2-031-0068URM County: DUVAL
 Project: GOLF COURSE

7
ESE
1/2 - 1 Mile

PWS ID: FL2164156 PWS Status: Active Info. Source: FRDS
 Date Initiated: Not Reported Date Deactivated: Not Reported
 PWS Name: WOODSIDE NURSERY AND DAY CARE
 12339 WOODSIDE LANE
 JACKSONVILLE, FL 32223

Addressee / Facility: System Owner/Responsible Party
 MARY HARTLEY
 MARY HARTLEY
 12339 WOODSIDE LANE
 JACKSONVILLE, FL 32223

Facility Latitude: 30 14 00 Facility Longitude: 081 40 30
 Facility Latitude: 30 19 54 Facility Longitude: 081 39 20

WELL SEARCH FINDINGS

Map ID
Direction
Distance

City Served: Not Reported
Treatment Class: Treated
Population Served: Under 101 Persons

PWS currently has or has had major violation(s): Yes

Violations information not reported.

B8
SSE
1/2 - 1 Mile

Site ID:	301335081404301	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1942	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	144.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: MARINE

WATER LEVEL VARIABILITY

Not Reported

B9
SSE
1/2 - 1 Mile

Site ID:	301333081404301	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	108.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	4.00 ft.	Prim. Use of Site:	Observation
Date Measured:	10011967	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

10
NNW
1/2 - 1 Mile

Site ID:	301452081411001	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1922	County:	Duval
Altitude:	Not Reported	State:	Florida
Well Depth:	669.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	42.00 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	06011922	Prim. Use of Water:	Public supply

WELL SEARCH FINDINGS

Map ID
Direction
Distance

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: Not Reported

WATER LEVEL VARIABILITY

Not Reported

11 WNW 1/2 - 1 Mile	PWS ID: FL2161150 PWS Status: Active Info. Source: FRDS Date Initiated: Not Reported Date Deactivated: Not Reported PWS Name: TRAILER TERRACE T.P. 1&2 5939 ROOSEVELT BLVD JACKSONVILLE, FL 32244
	Addressee / Facility: System Owner/Responsible Party PROPERTY PLANNING MILLIE 5001 PHILLIPS HWY SUITE 7B JACKSONVILLE, FL 32207
	Facility Latitude: 30 14 26 Facility Longitude: 081 41 44 Facility Latitude: 30 14 30 Facility Longitude: 081 42 00 City Served: Not Reported Treatment Class: Treated Population Served: Under 101 Persons

PWS currently has or has had major violation(s): Yes

Violations information not reported.

12 West 1/2 - 1 Mile	PWS ID: FL2161329 PWS Status: Active Info. Source: FRDS Date Initiated: Not Reported Date Deactivated: Not Reported PWS Name: AZALEA MHP 6301 ROOSEVELT BLVD. JACKSONVILLE, FL 32244
	Addressee / Facility: System Owner/Responsible Party CITRUS FIN.ATTN:TONY BOYER UNICORN PROP. 6301 ROSEVELT BLVD. JACKSONVILLE, FL 32244
	Facility Latitude: 30 14 05 Facility Longitude: 081 41 48 City Served: Not Reported Treatment Class: Treated Population Served: 101 - 500 Persons

PWS currently has or has had major violation(s): Yes

Violations information not reported.

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Routine Minor (TCR)		
Compliance Period:	04/01/97 - 04/30/97		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	06/03/97	Enf. Action:	State Violation/Reminder Notice
Violation Type:	Max Contaminant Level, Monthly (TCR)		
Compliance Period:	07/01/95 - 07/31/95		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	09/05/95	Enf. Action:	State Violation/Reminder Notice

WELL SEARCH FINDINGS

Map ID
Direction
Distance

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Routine Minor (TCR)	Enf. Action:	State Violation/Reminder Notice
Compliance Period:	04/01/97 - 04/30/97		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	06/03/97		

13
WSW
1/2 - 1 Mile

Site ID:	301348081414201	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1942	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	400.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Unused
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

14
West
1/2 - 1 Mile

Site ID:	301403081415101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1982	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	Not Reported	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

WELL SEARCH FINDINGS

Map ID
Direction
Distance

15
WSW
1/2 - 1 Mile

Site ID:	301400081415101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type	County:	Duval
Year Constructed:	1982	State:	Florida
Altitude:	15.00 ft.	Topographic Setting:	Flat surface
Well Depth:	Not Reported	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: MARINE

WATER LEVEL VARIABILITY

Not Reported

16
WNW
1/2 - 1 Mile

PWS ID:	FL2160168	PWS Status:	Active	Info. Source:	FRDS
Date Initiated:	Not Reported	Date Deactivated:	Not Reported		
PWS Name:	CARDINAL VILLAGE MHP 6075 ROOSEVELT BLVD. JACKSONVILLE, FL 32244				

Addressee / Facility: System Owner/Responsible Party
HARRIS & ASSOCIATES
BOB KING
6075 ROOSEVELT BLVD.
JACKSONVILLE, FL 32256

Facility Latitude:	30 14 26	Facility Longitude:	081 41 50
City Served:	Not Reported		
Treatment Class:	Treated	Population Served:	Under 101 Persons

PWS currently has or has had major violation(s): Yes

VIOLATIONS INFORMATION:

Violation ID:	93V0002	Source ID:	Not Reported	PWS Phone:	Not Reported
Vio. beginning Date:	12/01/92	Vio. end Date:	12/31/92	Vio. Period:	1 Month
Num of required Samples:	Not Reported	Number of Samples Taken:	Not Reported		
Analysis Result:	Not Reported	Maximum Contaminant Level:	Not Reported		
Analysis Method:	Not Reported				
Violation Type:	Monitoring, Repeat Major (TCR)				
Contaminant:	COLIFORM (TCR)				
Vio. Awareness Date:	Not Reported				

ENFORCEMENT INFORMATION:

Violation Type:	Max Contaminant Level, Monthly (TCR)		
Compliance Period:	12/01/92 - 12/31/92		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported
Violation Type:	Monitoring, Routine Minor (TCR)		
Compliance Period:	09/01/94 - 09/30/94		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	Not Reported	Enf. Action:	Not Reported

WELL SEARCH FINDINGS

Map ID
Direction
Distance

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Repeat Major (TCR)	Enf. Action:	Not Reported
Compliance Period:	12/01/92 - 12/31/92		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	Not Reported		

17
WSW
1/2 - 1 Mile

Site ID:	301354081415101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type	County:	Duval
Year Constructed:	1942	State:	Florida
Altitude:	15.00 ft.	Topographic Setting:	Flat surface
Well Depth:	400.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

FLORIDA GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Water Dams: National Inventory of Dams

Source: Federal Emergency Management Agency

Telephone: 202-646-2801

National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Florida Water Well and Sample Database

Source: FL Department of Environmental Protection, Groundwater Quality Monitoring

Florida St. Johns River District Well Data

Source: St. Johns River Water Management District

Telephone: 904-329-4500

Florida Southwest District Water Use Data

Source: Southwest Water Management District

Telephone: 904-796-7211

Florida Well Construction Permitting System: Water Well Locations in Northwest Florida Water Management District

Source: Northwest Florida Water Management District

Telephone: 904-539-5999

AQUIFLOW™ Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.



The EDR-GeoCheck[®] Report

Former Fire Fighting Training
Former Fire Fighting Training
Jacksonville, FL 32215

Inquiry Number: 305185.1s

October 22, 1998

The Source
**For Environmental
Risk Management
Data**

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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THE EDR GEOCHECK™ REPORT

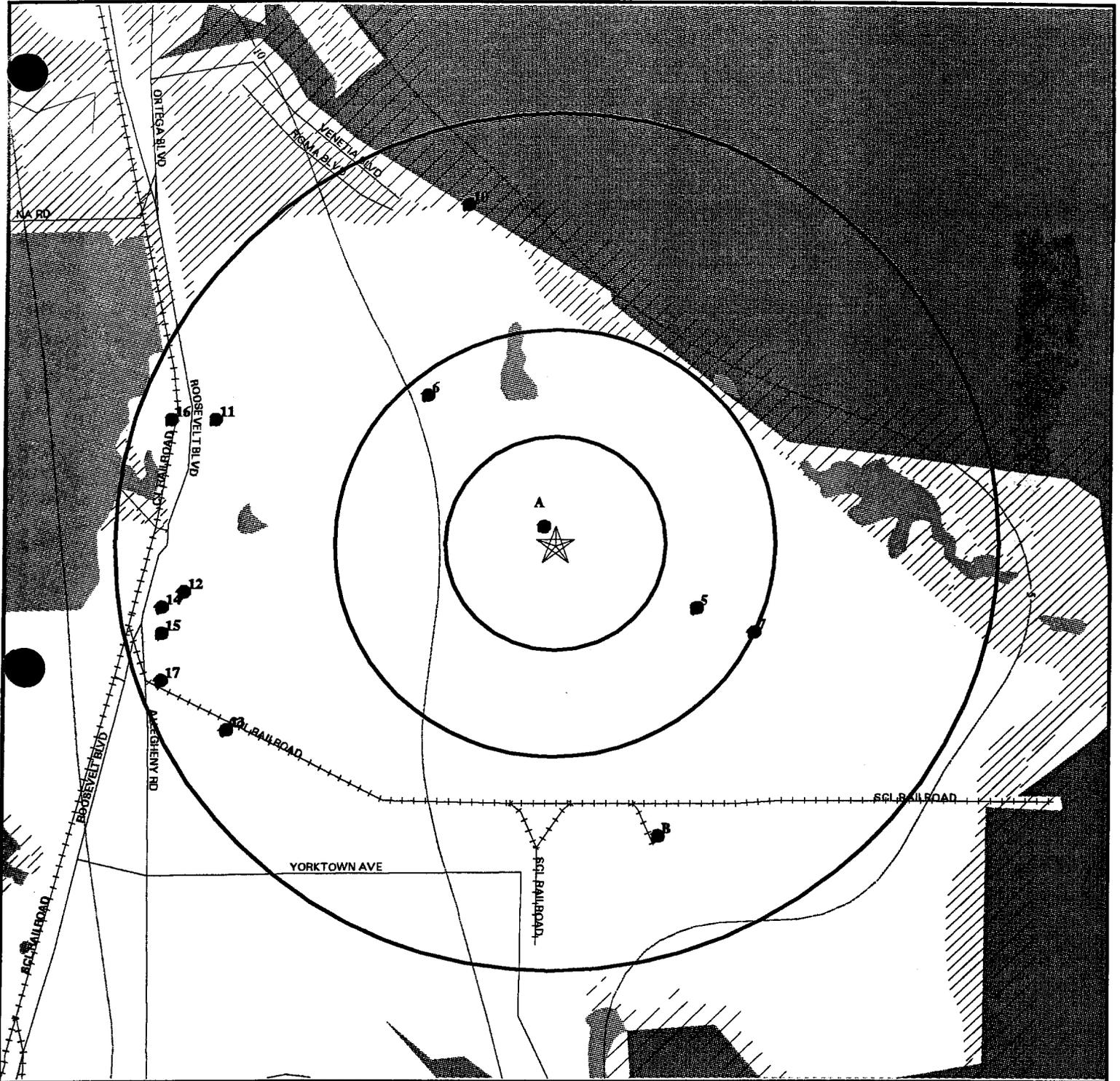
The EDR GeoCheck™ Report is a screening tool designed to assist in the hydrogeological assessment of a particular geographic area based upon publicly available information.

The EDR GeoCheck™ Report consists of the following information within a customer specified radius of the target property.

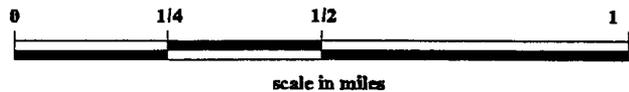
- topography (25 foot intervals unless otherwise shown)
- major roads
- surface water bodies
- railroad tracks
- flood plains (available in selected counties)
- wetlands (available in selected counties)
- wells including depth to water table and water level variability (in federal and selected state databases)
- public water supply wells (including violations information)
- geologic data
- radon data.

The EDR GeoCheck™ Report is a general area study. It may or may not be accurate at any specific location.

TOPOGRAPHIC MAP -305185.1s - 'Tetra Tech NUS Jacksonville'



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92



- Major Roads
- Contour lines (25 foot interval unless otherwise shown)
- Waterways
- Wells within search distance to Target Property
- Earthquake Epicenters (Richter 5 or greater)
- Power lines
- Pipe lines
- Fault lines
- Water
- Wetlands
- 100-year flood zone
- 500-year flood zone



TARGET PROPERTY: Former Fire Fighting Training
ADDRESS: Former Fire Fighting Training
CITY/STATE/ZIP: Jacksonville FL 32215
LAT/LONG: 30.2364 / 81.6826

CUSTOMER: Tetra Tech NUS Jacksonville
CONTACT: Stacey Stanley
INQUIRY #: 305185.1s
DATE: October 22, 1998

WELL SEARCH SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code: Qh
 Era: Cenozoic
 System: Quaternary
 Series: Holocene

ROCK STRATIGRAPHIC UNIT†

Category: Stratified Sequence

SEARCH DISTANCE RADIUS INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal Database	1.000
State Database	1.000
PWS Database	1.000

FEDERAL DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A4	301415081410101	0 - 1/8 Mile NNW
A3	301414081410101	0 - 1/8 Mile NNW
B8	301335081404301	1/2 - 1 Mile SSE
B9	301333081404301	1/2 - 1 Mile SSE
10	301452081411001	1/2 - 1 Mile NNW
13	301348081414201	1/2 - 1 Mile WSW
14	301403081415101	1/2 - 1 Mile West
15	301400081415101	1/2 - 1 Mile WSW
17	301354081415101	1/2 - 1 Mile WSW

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A1	2-031-0014AUNMGFR	0 - 1/8 Mile NNW
A2	2-031-0014AUNMGFR	0 - 1/8 Mile NNW
5	2-031-0014AUNMGFR	1/4 - 1/2 Mile ESE
6	2-031-0068AURM	1/4 - 1/2 Mile NW

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 7
 PWS ID: FL2164156
 Location Relative to TP: 1/2 - 1 Mile ESE
 PWS Name: WOODSIDE NURSERY AND DAY CARE
 12339 WOODSIDE LANE
 JACKSONVILLE, FL 32223
 PWS currently has or has had major violation(s): Yes

WELL SEARCH SUMMARY

PUBLIC WATER SUPPLY SYSTEM INFORMATION

Map ID: 11
 PWS ID: FL2161150
 Location Relative to TP: 1/2 - 1 Mile WNW
 PWS Name: TRAILER TERRACE T.P. 1&2
 5939 ROOSEVELT BLVD
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

Map ID: 12
 PWS ID: FL2161329
 Location Relative to TP: 1/2 - 1 Mile West
 PWS Name: AZALEA MHP
 6301 ROOSEVELT BLVD.
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

Map ID: 16
 PWS ID: FL2160168
 Location Relative to TP: 1/2 - 1 Mile WNW
 PWS Name: CARDINAL VILLAGE MHP
 6075 ROOSEVELT BLVD.
 JACKSONVILLE, FL 32244

PWS currently has or has had major violation(s): Yes

AREA RADON INFORMATION

DUVAL COUNTY, FL

Number of sites tested: 102

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.480 pCi/L	100%	0%	0%
Basement	0.380 pCi/L	100%	0%	0%

WELL SEARCH FINDINGS

Map ID
Direction
Distance

A4 NNW 0 - 1/8 Mile	Site ID:	301415081410101	Info. Source:	USGS
	Site Type:	Single well, other than collector or Ranney type		
	Year Constructed:	1981	County:	Duval
	Altitude:	20.00 ft.	State:	Florida
	Well Depth:	770.00 ft.	Topographic Setting:	Hilltop
	Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
	Date Measured:	Not Reported	Prim. Use of Water:	Not Reported

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

A3 NNW 0 - 1/8 Mile	Site ID:	301414081410101	Info. Source:	USGS
	Site Type:	Single well, other than collector or Ranney type		
	Year Constructed:	1942	County:	Duval
	Altitude:	20.00 ft.	State:	Florida
	Well Depth:	500.00 ft.	Topographic Setting:	Hilltop
	Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
	Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

A1 NNW 0 - 1/8 Mile	District:	St. John's River District	WELL Number:	M
	ID:	2-031-0014AUNMGFR		
	Date of Construction:	Not Reported	Longitude:	81 40 59
	Latitude:	30 14 13	Depth:	Not Reported
	Diameter (in inches):	4.0	Section:	339
	Township:	26		
	Name:	UNITED STATES NAVY		
Address:	ATTN: JEROME JACKSON NAVY PUBLIC WORKS CTR JACKSONVILLE JACKSONVILLE, FL 32212-0030			
Permit Number:	2-031-0014UNMGFR	County:	DUVAL	
Project:	COMMERCIAL/INDUSTRIAL LANDSCAPE			

WELL SEARCH FINDINGS

Map ID
Direction
Distance

A2 NNW 0 - 1/8 Mile	District: St. John's River District ID: 2-031-0014AUNMGFR Date of Construction: Not Reported Latitude: 30 14 12 Diameter (in inches): 6.0 Township: 26	WELL Number: L Longitude: 81 41 02 Depth: Not Reported Section: 339	
Name: UNITED STATES NAVY Address: ATTN: JEROME JACKSON NAVY PUBLIC WORKS CTR JACKSONVILLE JACKSONVILLE, FL 32212-0030			
Permit Number: 2-031-0014UNMGFR Project: COMMERCIAL/INDUSTRIAL LANDSCAPE		County: DUVAL	
<hr/>			
5 ESE 1/4 - 1/2 Mile	District: St. John's River District ID: 2-031-0014AUNMGFR Date of Construction: Not Reported Latitude: 30 14 03 Diameter (in inches): 4.0 Township: 26	WELL Number: G Longitude: 81 40 38 Depth: 500' Section: 339	
Name: UNITED STATES NAVY Address: ATTN: JEROME JACKSON NAVY PUBLIC WORKS CTR JACKSONVILLE JACKSONVILLE, FL 32212-0030			
Permit Number: 2-031-0014UNMGFR Project: COMMERCIAL/INDUSTRIAL LANDSCAPE		County: DUVAL	
<hr/>			
6 NW 1/4 - 1/2 Mile	District: St. John's River District ID: 2-031-0068AURM Date of Construction: Not Reported Latitude: 30 14 29 Diameter (in inches): 11.0 Township: 27	WELL Number: A Longitude: 81 41 15 Depth: UNKNOWN Section: 315	
Name: TIMUQUANA COUNTRY CLUB Address: 4028 TIMUQUANA ROAD JACKSONVILLE, FL 32210			
Permit Number: 2-031-0068URM Project: GOLF COURSE		County: DUVAL	
<hr/>			
7 ESE 1/2 - 1 Mile	PWS ID: FL2164156 Date Initiated: Not Reported PWS Name: WOODSIDE NURSERY AND DAY CARE 12339 WOODSIDE LANE JACKSONVILLE, FL 32223	PWS Status: Active Date Deactivated: Not Reported	Info. Source: FRDS
Addressee / Facility: System Owner/Responsible Party MARY HARTLEY MARY HARTLEY 12339 WOODSIDE LANE JACKSONVILLE, FL 32223			
Facility Latitude: 30 14 00 Facility Latitude: 30 19 54		Facility Longitude: 081 40 30 Facility Longitude: 081 39 20	

WELL SEARCH FINDINGS

Map ID
Direction
Distance

City Served: Not Reported
Treatment Class: Treated
Population Served: Under 101 Persons

PWS currently has or has had major violation(s): Yes

Violations information not reported.

B8
SSE
1/2 - 1 Mile

Site ID:	301335081404301	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1942	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	144.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: MARINE

WATER LEVEL VARIABILITY

Not Reported

B9
SSE
1/2 - 1 Mile

Site ID:	301333081404301	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	108.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	4.00 ft.	Prim. Use of Site:	Observation
Date Measured:	10011967	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

10
NNW
1/2 - 1 Mile

Site ID:	301452081411001	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1922	County:	Duval
Altitude:	Not Reported	State:	Florida
Well Depth:	669.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	42.00 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	06011922	Prim. Use of Water:	Public supply

WELL SEARCH FINDINGS

Map ID
Direction
Distance

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: Not Reported

WATER LEVEL VARIABILITY

Not Reported

11
WNW
1/2 - 1 Mile

PWS ID:	FL2161150	PWS Status:	Active	Info. Source:	FRDS
Date Initiated:	Not Reported	Date Deactivated:	Not Reported		
PWS Name:	TRAILER TERRACE T.P. 1&2 5939 ROOSEVELT BLVD JACKSONVILLE, FL 32244				

Addressee / Facility: System Owner/Responsible Party
PROPERTY PLANNING
MILLIE
5001 PHILLIPS HWY SUITE 7B
JACKSONVILLE, FL 32207

Facility Latitude:	30 14 26	Facility Longitude:	081 41 44
Facility Latitude:	30 14 30	Facility Longitude:	081 42 00
City Served:	Not Reported	Population Served:	Under 101 Persons
Treatment Class:	Treated		

PWS currently has or has had major violation(s): Yes

Violations information not reported.

12
West
1/2 - 1 Mile

PWS ID:	FL2161329	PWS Status:	Active	Info. Source:	FRDS
Date Initiated:	Not Reported	Date Deactivated:	Not Reported		
PWS Name:	AZALEA MHP 6301 ROOSEVELT BLVD. JACKSONVILLE, FL 32244				

Addressee / Facility: System Owner/Responsible Party
CITRUS FIN.ATTN:TONY BOYER
UNICORN PROP.
6301 ROSEVELT BLVD.
JACKSONVILLE, FL 32244

Facility Latitude:	30 14 05	Facility Longitude:	081 41 48
City Served:	Not Reported	Population Served:	101 - 500 Persons
Treatment Class:	Treated		

PWS currently has or has had major violation(s): Yes

Violations information not reported.

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Routine Minor (TCR)		
Compliance Period:	04/01/97 - 04/30/97		
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Violation/Reminder Notice
Enforcement Date:	06/03/97		
Violation Type:	Max Contaminant Level, Monthly (TCR)		
Compliance Period:	07/01/95 - 07/31/95		
Contaminant:	COLIFORM (TCR)	Enf. Action:	State Violation/Reminder Notice
Enforcement Date:	09/05/95		

WELL SEARCH FINDINGS

Map ID
Direction
Distance

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Routine Minor (TCR)	Enf. Action:	State Violation/Reminder Notice
Compliance Period:	04/01/97 - 04/30/97		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	06/03/97		

13
WSW
1/2 - 1 Mile

Site ID:	301348081414201	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1942	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	400.00 ft.	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Unused
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

14
West
1/2 - 1 Mile

Site ID:	301403081415101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1982	County:	Duval
Altitude:	15.00 ft.	State:	Florida
Well Depth:	Not Reported	Topographic Setting:	Flat surface
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

WELL SEARCH FINDINGS

Map ID
Direction
Distance

15 WSW 1/2 - 1 Mile	Site ID: 301400081415101	Info. Source: USGS
	Site Type: Single well, other than collector or Ranney type	
	Year Constructed: 1982	County: Duval
	Altitude: 15.00 ft.	State: Florida
	Well Depth: Not Reported	Topographic Setting: Flat surface
	Depth to Water Table: Not Reported	Prim. Use of Site: Withdrawal of water
	Date Measured: Not Reported	Prim. Use of Water: Unused

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series): Cenozoic-Tertiary
Principal Lithology of Unit: Limestone
Further Description: MARINE

WATER LEVEL VARIABILITY

Not Reported

16 WNW 1/2 - 1 Mile	PWS ID: FL2160168	PWS Status: Active	Info. Source: FRDS
	Date Initiated: Not Reported	Date Deactivated: Not Reported	
	PWS Name: CARDINAL VILLAGE MHP 6075 ROOSEVELT BLVD. JACKSONVILLE, FL 32244		

Addressee / Facility: System Owner/Responsible Party
HARRIS & ASSOCIATES
BOB KING
6075 ROOSEVELT BLVD.
JACKSONVILLE, FL 32256

Facility Latitude: 30 14 26	Facility Longitude: 081 41 50
City Served: Not Reported	Population Served: Under 101 Persons
Treatment Class: Treated	

PWS currently has or has had major violation(s): Yes

VIOLATIONS INFORMATION:

Violation ID: 93V0002	Source ID: Not Reported	PWS Phone: Not Reported
Vio. beginning Date: 12/01/92	Vio. end Date: 12/31/92	Vio. Period: 1 Month
Num of required Samples: Not Reported	Number of Samples Taken: Not Reported	
Analysis Result: Not Reported	Maximum Contaminant Level: Not Reported	
Analysis Method: Not Reported		
Violation Type: Monitoring, Repeat Major (TCR)		
Contaminant: COLIFORM (TCR)		
Vio. Awareness Date: Not Reported		

ENFORCEMENT INFORMATION:

Violation Type: Max Contaminant Level, Monthly (TCR)	
Compliance Period: 12/01/92 - 12/31/92	
Contaminant: COLIFORM (TCR)	
Enforcement Date: Not Reported	Enf. Action: Not Reported
Violation Type: Monitoring, Routine Minor (TCR)	
Compliance Period: 09/01/94 - 09/30/94	
Contaminant: COLIFORM (TCR)	
Enforcement Date: Not Reported	Enf. Action: Not Reported

WELL SEARCH FINDINGS

Map ID
Direction
Distance

ENFORCEMENT INFORMATION:

Violation Type:	Monitoring, Repeat Major (TCR)	Enf. Action:	Not Reported
Compliance Period:	12/01/92 - 12/31/92		
Contaminant:	COLIFORM (TCR)		
Enforcement Date:	Not Reported		

17
WSW
1/2 - 1 Mile

Site ID:	301354081415101	Info. Source:	USGS
Site Type:	Single well, other than collector or Ranney type	County:	Duval
Year Constructed:	1942	State:	Florida
Altitude:	15.00 ft.	Topographic Setting:	Flat surface
Well Depth:	400.00 ft.	Prim. Use of Site:	Withdrawal of water
Depth to Water Table:	Not Reported	Prim. Use of Water:	Unused
Date Measured:	Not Reported		

LITHOLOGIC DATA

Geologic Age ID (Era/System/Series):	Cenozoic-Tertiary
Principal Lithology of Unit:	Limestone
Further Description:	MARINE

WATER LEVEL VARIABILITY

Not Reported

FLORIDA GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems

Source: EPA/Office of Drinking Water
Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water
Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Water Dams: National Inventory of Dams

Source: Federal Emergency Management Agency
Telephone: 202-646-2801

National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Florida Water Well and Sample Database

Source: FL Department of Environmental Protection, Groundwater Quality Monitoring

Florida St. Johns River District Well Data

Source: St. Johns River Water Management District
Telephone: 904-329-4500

Florida Southwest District Water Use Data

Source: Southwest Water Management District
Telephone: 904-796-7211

Florida Well Construction Permitting System: Water Well Locations in Northwest Florida Water Management District

Source: Northwest Florida Water Management District
Telephone: 904-539-5999

AQUIFLOWTM Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

APPENDIX C
SOIL BORING LOGS

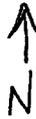
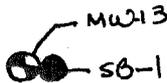


FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-1 DPT Soil Borings



PROJECT: FFTF NAS JAX 7849	BORING NO. SB-1
JOB NO. CTO-061/7849	TOTAL DEPTH: 9'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME:	DATE: 7/6/98
COMPLETED TIME:	DATE: 7/6/98
BORING DEPTH (ft.)	9'
CASING DEPTH (ft.)	N/A
WATER DEPTH (ft.)	8' hls
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE D	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
							0	0	0	1	
							350	100	250	2	
										3	
										4	
										5	
							>1000	>1000	⊕	6	
										7	
					moist					8	
							71000	71000	⊕	9	
										10	

Dark fine grain to Gray sand + debris

Dark fine grain to traces of gray fine silt

Gray fine grained sand - traces of silt

▽ to GW

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

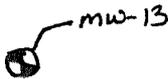


FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-2 DPT SOIL BORINGS



SB-2

PROJECT: FFTF - Was JAW		BORING NO. SB-2	
7849		TOTAL DEPTH: 10'	
JOB NO. C70-061/7849		LOGGED BY: SAS	
PROJ. MGR: S. Pratt		EDITED BY:	
DRILLING CONTRACTOR: TEG - Southeast			
DRILL RIG TYPE: Strata probe			
DRILLERS NAME: Eddie Andino			
SAMPLING METHODS: GRAB			
HAMMER WT:		DROP:	
STARTED TIME: 10:55		DATE: 7/6/98	
COMPLETED TIME:		DATE: 7/6/98	
BORING DEPTH (ft.)		10'	
CASING DEPTH (ft.)		N/A	
WATER DEPTH (ft.)		6' b/s	
TIME:		1	
DATE:			
BACKFILLED TIME:		DATE:	
SURFACE ELEV.:		DATUM:	
CONDITIONS:			
Light brown fine grained sand			
Brown - fine grained sand - wet			
▼ to Gw			

SAMPLE D	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						None	∅	∅	∅	1	↓
										2	
							∅	∅	∅	3	
										4	
							8	10	2	5	
					6.5%					6	
										7	
										8	
										9	
										10	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

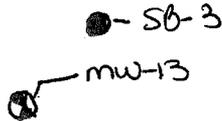


FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-3 DPT Soil Borings



PROJECT: FTF- NAS JAX 7849	BORING NO. SB-3 TOTAL DEPTH: 10'
JOB NO. CTO-061 / 7849	LOGGED BY: SAS
PROJ. MGR: S. Pratt	EDITED BY:
DRILLING CONTRACTOR: TEG - Southeast	
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 11:15	DATE: 7/6/98
COMPLETED TIME:	DATE: 7/6/98
BORING DEPTH (ft.): 10'	
CASING DEPTH (ft.): N/A	
WATER DEPTH (ft.): 8' 6 1/2	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE ID	SAMPLER TYPE	BLOWS/8-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none	0	0	0	1	↓
						none				2	
						Petro color	400	0	400	3	↓
										4	
							>1000	>1000	0	5	↓
										6	
							>1000	>1000	0	7	↓
										8	
										9	
										10	

Dark brown, fine grained sand

↓ ↓ ↓

Light brown, fine grained sand

↓ ↓ ↓

Light Brown, fine grained sand

↓ ↓ ↓

Brown, fine grained sand, trace (+) silt

▽ to GW

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

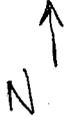


FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-4 DPT Soil Borings



PROJECT: FTF - NAS JAY 7849	BORING NO. SB-4
JOB NO. CTO-001/7849	TOTAL DEPTH: 11'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strata probe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 12:17	DATE: 7/6/98
COMPLETED TIME:	DATE: 7/6/98
BORING DEPTH (ft.)	11'
CASING DEPTH (ft.)	N/A
WATER DEPTH (ft.)	8' b/s
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY
						None	Ø	Ø	Ø	1	↓	Dark brown, fine grained sand, organic debris
						↓				2	↓	Dark brown, fine grained sand, organic debris
						↓	Ø	Ø	Ø	3	↓	
					moist	Petro. odor				4	↓	Light brown, fine grained sand Petroleum odor, petroleum staining moist
							>1000	>1000	Ø	5	↓	
							>1000	500	500	6	↓	Lt brown, fine grained sand, Petroleum odor, Petroleum staining
							↓	↓	↓	7	↓	
					Wet					8	↓	Lt brown, fine grained sand, Petroleum odor, petroleum stained - to GW -
							680	280	400	9	↓	
										10		

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:
 SB-5 - DPT Soil Borings

N ↑

mw13

SB-5

PROJECT: FFTF-NASJAX	BORING NO. SB-5
JOB NO. C70-061/7849	TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strata probe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME:	DATE: 7/6/98
COMPLETED TIME:	DATE: 7/6/98
BORING DEPTH (ft): 10'	
CASING DEPTH (ft): N/A	
WATER DEPTH (ft): 7' bs	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE ID	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						None	0	0	0	1	↓
							0	0	0	2	
							0	0	0	3	
										4	↓
					Moist	Petio odor	7000	520	480	5	
										6	↓
										7	
							820	420	400	8	↓
										9	
							120	100	20	10	

Dark brown, fine grained sand, organic debris

↓ ↓ ↓ ↓

Dark brown, fine grained sand, organic debris

Light Brown fine grained sand

▽ to GW

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-7 DPT Soil Borings

● SB-7

● SB-6

○ MW3



PROJECT: FFTF NAS JAX

BORING NO. SB-7

TOTAL DEPTH: 10'

JOB NO. CTO-061 / 7849

LOGGED BY: SAS

PROJ. MGR: S. Pratt

EDITED BY:

DRILLING CONTRACTOR: TEG - Southeast

DRILL RIG TYPE: strataprobe

DRILLERS NAME: Eddie Andino

SAMPLING METHODS: GRAB

HAMMER WT:

DROP:

STARTED TIME: 15:23

DATE: 7/6/98

COMPLETED TIME:

DATE: 7/6/98

BORING DEPTH (ft.) 10'

CASING DEPTH (ft.) NA

WATER DEPTH (ft.) 7' b/s

TIME:

DATE:

BACKFILLED TIME:

DATE:

BY:

SURFACE ELEV.:

DATUM:

CONDITIONS:

SAMPLE ID	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none	0	0	0	1	
							0	0	0	3	
						none				4	
							60	60	0	5	
					moist					6	
							160	100	60	7	
					wet					8	
							600	400	200	9	
										10	

Dark brown, fine grained sand, organic debris

Light brown, fine grained sand

Light brown, fine grained sand

▽ to Gw
Light brown, fine grained sand

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-8 - DPT Soil borings

↑
N

PROJECT: FFTF - NAS JAX	BORING NO. SB-8
JOB NO. GTO-061-7849	TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 15:44	DATE: 7/6/98
COMPLETED TIME:	DATE: 7/6/98
BORING DEPTH (ft.): 10'	

SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY
										1	↓	Dark brown, fine grained sand
							Ø	Ø	Ø	2	↓	↓
						Petro odor				3	↓	Light brown fine grained sand, staining
						↓	>1000	Ø	>1000	4	↓	↓
										5	↓	Light Brown fine grained sand - staining
							>1000	400	>600	6	↓	↓
										7	↓	Light Brown fine grained Sand - staining
							>1000	>1000	Ø	8	↓	▽ to GW
										9		
										10		

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-9 - DPT Soil Borings											PROJECT: FTFE-NASJAX SB-9		BORING NO. SB-9	
											JOB NO. CTO-061/7849		TOTAL DEPTH: 8'	
											PROJ. MGR: S. Pratt		LOGGED BY: SAS	
											DRILLING CONTRACTOR: TEG - Southeast		EDITED BY:	
											DRILL RIG TYPE: Strataprobe			
											DRILLERS NAME: Eddie Andino			
											SAMPLING METHODS: GRAB			
											HAMMER WT:		DROP:	
											STARTED TIME: 16:55		DATE: 7/6/98	
											COMPLETED TIME:		DATE: 7/6/98	
											BORING DEPTH (ft): 8'			
											CASING DEPTH (ft): N/A			
											WATER DEPTH (ft): 6' b/s			
											TIME:			
											DATE:			
											BACKFILLED TIME:		DATE:	
													BY:	
											SURFACE ELEV.:		DATUM:	
											CONDITIONS:			
											Brown, fine grained sand			
											Light Brown, Fine grained sand			
											Light Brown, Fine Grained sand			
											to GW			



SAMPLE	DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
							none	∅	∅	∅	1	↓
											2	
											3	
								∅	∅	∅	4	↓
											5	
						wet	↓	∅	∅	∅	6	
											7	
											8	
											9	
											10	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:
SB-10 DPT Soil Borings

mw13

SB-10

↑
N

PROJECT: FFTF - NAS JAX	BORING NO. SB-10
JOB NO. CTO-061 / 7849	TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strata probe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 17:10	DATE:
COMPLETED TIME:	DATE:
BORING DEPTH (ft.): 10'	
CASING DEPTH (ft.): NA	
WATER DEPTH (ft.): 7' b/s	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE ID	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY	
						none	0	0	0	1	↓	Brown, fine grained sand	
										2			
							4.8	0	4.8	3			Light Brown fine grained sand
										4	↓		
							0	0	0	5			Light Brown Fine grained sand
										6	↓		
					wet		10	5	5	7			to GW Light Brown Fine grained sand
										8			
										9			
										10			

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-11 OPT Soil Borings



PROJECT: FFTF NAS JAX	BORING NO. SB-11
JOB NO. CTO 061 - 7849	TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 08:35	DATE: 7/7/98
COMPLETED TIME:	DATE: 7/7/98
BORING DEPTH (ft.): 10'	
CASING DEPTH (ft.): N/A	
WATER DEPTH (ft.): 7' 6 1/2	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE D	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none	0	0	0	1	
										2	
							0	0	0	3	
										4	
					Moist	Petro odor	>7000	>7000	0	5	
										6	
					Wet		>7000	>7000	>100	7	
										8	
							>7000	>7000	0	9	
										10	

Dark brown, fine grained sand, organic debris

Dark brown, fine grained sand, organic debris

Brown, fine grained sand, staining

to GW

Brown, fine grained sand, Petro staining

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB-12 DPT Soil Borings

SB12

PROJECT: FFTF - NAS JAX	BORING NO. SB-12
JOB NO. CTO-061-7849	TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Ardino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 0906	DATE: 7/7/98
COMPLETED TIME:	DATE: 7/7/98

BORING DEPTH (ft.)	10'	
CASING DEPTH (ft.)	N/A	
WATER DEPTH (ft.)	7' b/s	
TIME:		
DATE:		
BACKFILLED TIME:	DATE:	BY:
SURFACE ELEV.:	DATUM:	
CONDITIONS:		

SAMPLE NO.	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none	0	0	0	1	
										2	
							0	0	0	3	
										4	
						Petro odor	>1000	620	>380	5	
										6	
						Wet	>1000	>1000	-	7	
										8	
							>1000	420	>580	9	
										10	

Dark brown, fine grained sand

Dark brown, fine grained sand

Brown, fine-grained sand

Light Brown, fine grained sand

Light Brown fine grained sand with traces of silt

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-13 DPT Soil Borings

SB13

mw13

↑
N

PROJECT: FFTF - NAS JAX	BORING NO. SB-13
JOB NO. CTO-061 - 2849	TOTAL DEPTH: 8'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strata probe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 09:50	DATE: 7/7/98
COMPLETED TIME:	DATE: 7/9/98
BORING DEPTH (ft.)	8'
CASING DEPTH (ft.)	N/A
WATER DEPTH (ft.)	8' b/s
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE D	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none				1	↓
							0	0	0	2	
										3	
							>1000	34	466	4	
						Petro cobb				5	↓
							>1000	>1000	0	6	
										7	↓
										8	
					Wet		>1000	>1000	0	9	↓
										10	

Dark Brown, fine grained sand

Light Brown, Fine grained sand

Light brown-finegrained sand, ~~Red~~ staining

Light Brown fine grained sand

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-14 OPT Soil borings

PROJECT: FFTF -NASJAX BORING NO. SB-14

TOTAL DEPTH: 9'

JOB NO. CIO-061 / 7849 LOGGED BY: SAS

PROJ. MGR: S. Pratt EDITED BY:

DRILLING CONTRACTOR: TEG - Southeast

DRILL RIG TYPE: Shata probe

DRILLERS NAME: Eddie Ardino

SAMPLING METHODS: GRAB

HAMMER WT: DROP:

STARTED TIME: 11:11 DATE: 7/7/98

COMPLETED TIME: DATE: 7/7/98

BORING DEPTH (ft): 9'

CASING DEPTH (ft): NA

WATER DEPTH (ft): 6' b/s

TIME: DATE:

BACKFILLED TIME: DATE: BY:

SURFACE ELEV.: DATUM:

CONDITIONS:

mw13

SB14



SAMPLE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY
						note	0	0	0	1		Brown - fine grained sand
							0	0	0	2		
							0	0	0	3		
							0	0	0	4		Brown fine grained sand
							0	0	0	5		
							0	0	0	6		Brown fine grained sand
					Wet					7		to GW
										8		
										9		
										10		

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:

SB15

mw13



PROJECT: FFTF NAS JAX		BORING NO. SB-15	
JOB NO. CTO-061/7849		TOTAL DEPTH: 9'	
PROJ. MGR: S. Pratt		LOGGED BY: SAS	
DRILLING CONTRACTOR: TEG - Southeast		EDITED BY:	
DRILL RIG TYPE: Strata probe			
DRILLERS NAME: Eddie Ardino			
SAMPLING METHODS: GRAB			
HAMMER WT:		DROP:	
STARTED TIME: 11:45		DATE: 7/2/98	
COMPLETED TIME:		DATE: 7/2/98	
BORING DEPTH (ft.)	9'		
CASING DEPTH (ft.)	N/A		
WATER DEPTH (ft.)	8' b/s		
TIME:			
DATE:			
BACKFILLED TIME:	DATE:	BY:	
SURFACE ELEV.:		DATUM:	
CONDITIONS:			
Brown, fine grained sand			
↓ ↓			
Brown fine grained sand			
↓ ↓			
Light brown, fine grained sand, staining			
↓ ↓			
Light brown, fine grained sand, staining			
↓ to GW			
↓ ↓			

SAMPLE ID	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						None	0	0	0	1	
										2	
							4	0	4	3	
										4	
							>1000	>1000	0	5	
						Petro Odor				6	
							>1000	>1000	0	7	
										8	
							>1000	>1000	0	9	
										10	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-16 DPT Soil borings

● SB-16

⊗ mw 13

↑
N

PROJECT: FFTF NAS JAX	BORING NO. SB 16
JOB NO. CTO-061-7849	TOTAL DEPTH: 8'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG-Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME: 12:16	DATE: 7/7/98
COMPLETED TIME:	DATE: 7/7/98
BORING DEPTH (ft.): 8'	
CASING DEPTH (ft.): N/A	
WATER DEPTH (ft.): 6' b1s	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE	DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
							none				1	
											2	
											3	
								>1000	5	7995	4	
							Retro color				5	
							Wet	>1000	740	7260	6	
											7	
											8	
											9	
											10	

Dark Brown, fine-grained sand

Light Brown, fine grained sand

V to GW

Light Brown, fine grained sand, staining

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-17
 SB-17 DPT Soil borings

MW13

↑
N

PROJECT: FFTF NASJAW	BORING NO. SB-17
JOB NO. CTO-061-7849	TOTAL DEPTH: 9'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strataprobe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP:
STARTED TIME:	DATE: 7/7/98
COMPLETED TIME:	DATE: 7/7/98
BORING DEPTH (ft.): 9'	
CASING DEPTH (ft.): NA	
WATER DEPTH (ft.): 7' b/s	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none	0	0	0	1	
										2	
							>1000	0	>1000	3	
						Petro stain	>1000	>1000	0	4	
										5	
										6	
							>1000	>1000	0	7	
										8	
							540	290		9	
										10	

Dark brown, fine grained sand

Dark brown, fine grained sand, ~~staining~~

Dark brown fine grained sand, Petro staining

Dark brown, fine grained sand
Petro staining

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-18 DPT Soil borings

● SB-18

● MW13

↑
N

PROJECT: FTF	BORING NO. SB-18
JOB NO. CTD-061 7849	TOTAL DEPTH: 9'
PROJ. MGR: S. Pratt	LOGGED BY: SAS
DRILLING CONTRACTOR: TEG - Southeast	EDITED BY:
DRILL RIG TYPE: Strata probe	
DRILLERS NAME: Eddie Andino	
SAMPLING METHODS: GRAB	
HAMMER WT:	DROP: 77/98
STARTED TIME: 14:25	DATE: 7/7/98
COMPLETED TIME:	DATE:
BORING DEPTH (ft.)	9'
CASING DEPTH (ft.)	N/A
WATER DEPTH (ft.)	7' b/s
TIME:	
DATE:	
BACKFILLED TIME:	DATE:
	BY:
SURFACE ELEV.:	DATUM:
CONDITIONS:	

SAMPLE	TH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
							note	0	0	0	1	↓
								>1000	0	>1000	2	
								↓	↓	↓	3	
							Petro color				4	
								>1000	>1000	0	5	
											6	
							Let	>1000	620	>380	7	
											8	
								420	120	300	9	
											10	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-19 DPT Soil Borings

SB-19



PROJECT: FFTF NAS JAX		BORING NO. SB-19	
		TOTAL DEPTH: 8	
JOB NO. C70-061-7849		LOGGED BY: SAS	
PROJ. MGR: S. Pratt		EDITED BY:	
DRILLING CONTRACTOR: TEG - Southeast			
DRILL RIG TYPE: Strata Probe			
DRILLERS NAME: Eddie Andino			
SAMPLING METHODS: GRAB			
HAMMER WT:		DROP:	
STARTED TIME: 14:55		DATE: 7/7/98	
COMPLETED TIME:		DATE: 7/7/98	
BORING DEPTH (ft.)		8'	
CASING DEPTH (ft.)		N/A	
WATER DEPTH (ft.)		7' b/s	
TIME:			
DATE:			
BACKFILLED TIME:		DATE:	
		BY:	
SURFACE ELEV.:		DATUM:	
CONDITIONS:			

SAMPLE NO.	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						None				1	
							10	30	?	2	
										3	
							>1000	>1000	0	4	
					P	Petro odor				5	
							820	320	600	6	
					Wet					7	
							>1000	370	>630	8	
										9	
										10	

Dark Brown fine grained sand

Light brown fine grained sand with clay

Light Brown fine grained sand w/ clay ↓ to GW

Light brown fine grained sand w/ clay

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-20 DPT Soil Borings
● SB-20

PROJECT: FFTF NASJAX BORING NO. SB-20
TOTAL DEPTH: 10'

JOB NO. CTO-061 7849 LOGGED BY: SAS
PROJ. MGR: S. Pratt EDITED BY:

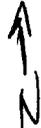
DRILLING CONTRACTOR: TEG-Southeast
DRILL RIG TYPE: Strata probe
DRILLERS NAME: Eddie Andino
SAMPLING METHODS: GRAB

HAMMER WT: DROP:
STARTED TIME: DATE:
COMPLETED TIME: DATE:

BORING DEPTH (ft) 10'
CASING DEPTH (ft) N/A
WATER DEPTH (ft) 7' h/s

TIME: DATE:
BACKFILLED TIME: DATE: BY:
SURFACE ELEV.: DATUM:
CONDITIONS:

W13



SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY
							Ø	Ø	Ø	1	↓	Dark brown, fine grained sand
										2	↓	
							Ø	Ø	Ø	3	↓	
										4	↓	Dark Brown fine grained sand
					moist		320	60	260	5	↓	
										6	↓	Light brown, fine grained sand
					wet		140	50	60	7	↓	to 6w
										8	↓	Light Brown, fine grained sand
										9	↓	
										10	↓	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING: SB-21 DPT ~~SB-21~~ Borings

● SB-21

● MWB



PROJECT: FFTF ^{NAS} _{JAX}		BORING NO. SB-21
JOB NO. CTO-061 7849		TOTAL DEPTH: 10'
PROJ. MGR: S. Pratt	LOGGED BY: SAS	
DRILLING CONTRACTOR: TEG - Southeast		EDITED BY:
DRILL RIG TYPE: Strataprobe		
DRILLERS NAME: Eddie Andino		
SAMPLING METHODS: GRAB		
HAMMER WT:	DROP:	
STARTED TIME:	DATE: 7/7/98	
COMPLETED TIME:	DATE: 7/7/98	
BORING DEPTH (ft.)	10'	
CASING DEPTH (ft.)	N/A	
WATER DEPTH (ft.)	7' 6 1/2	
TIME:		
DATE:		
BACKFILLED TIME:	DATE:	BY:
SURFACE ELEV.:	DATUM:	
CONDITIONS:		
Dark Brown, fine grained sand		
↓ ↓		
Dark brown fine grained sand		
↓ ↓		
Gray fine grained sand		
↓ ↓		
V to G tan fine grained sand		
↓ ↓		

SAMPLE D	SAMPLER TYPE	BLOWS/8-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
										1	
										2	
										3	
										4	
										5	
										6	
					Wet					7	
										8	
										9	
										10	

NO OVA

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:												PROJECT: PFTF - NASJAX						BORING NO. SB 24					
																		TOTAL DEPTH: 8'					
												JOB NO. CTO-061-7849						LOGGED BY: SAS					
												PROJ. MGR: S. Pratt						EDITED BY:					
												DRILLING CONTRACTOR: TEG - Southeast											
												DRILL RIG TYPE: Strataprobe											
												DRILLERS NAME: Eddie Andino											
												SAMPLING METHODS: GRAB											
												HAMMER WT:						DROP:					
												STARTED TIME: 9:44						DATE: 7/8/98					
COMPLETED TIME:						DATE: 7/8/98																	
BORING DEPTH (ft.)						8'																	
CASING DEPTH (ft.)						N/A																	
WATER DEPTH (ft.)						7'																	
TIME:																							
DATE:																							
BACKFILLED TIME:				DATE:				BY:															
SURFACE ELEV.:						DATUM:																	
CONDITIONS:																							
Dark Brown - tan organic fine grained sand																							
Gray - tan fine grained sand																							
Gray - tan fine grained sand V to Gw																							
Gray, brown mix - fine grained sand																							

SAMPLE D	SAMPLER TYPE	BLOWS/8-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
										1	
										2	
										3	
										4	
										5	
					moist					6	
					wet					7	
										8	
										9	
										10	

OVA Sheet Down

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:													PROJECT: FFTF NASJAX		BORING NO. SB-23																																																																																																																																					
													JOB NO. CTO-061-7849		TOTAL DEPTH: 9'																																																																																																																																					
													PROJ. MGR: S. Pratt		LOGGED BY: SAS																																																																																																																																					
													DRILLING CONTRACTOR: TEG - Southeast																																																																																																																																							
													DRILL RIG TYPE: Strata probe																																																																																																																																							
													DRILLERS NAME: Eddie Ardino																																																																																																																																							
													SAMPLING METHODS:																																																																																																																																							
													HAMMER WT:		DROP:																																																																																																																																					
													STARTED TIME: 9:10		DATE: 7/8/98																																																																																																																																					
													COMPLETED TIME:		DATE: 7/8/98																																																																																																																																					
BORING DEPTH (ft.)		9'																																																																																																																																																		
CASING DEPTH (ft.)		N/A																																																																																																																																																		
WATER DEPTH (ft.)		7' 6 1/2"																																																																																																																																																		
TIME:																																																																																																																																																				
DATE:																																																																																																																																																				
BACKFILLED TIME:		DATE:	BY:																																																																																																																																																	
SURFACE ELEV.:		DATUM:																																																																																																																																																		
CONDITIONS:																																																																																																																																																				
<table border="1"> <thead> <tr> <th>SAMPLE DEPTH</th> <th>SAMPLER TYPE</th> <th>BLOWS/6-IN.</th> <th>INCHES DRIVEN</th> <th>INCHES RECOVERED</th> <th>MOISTURE</th> <th>ODOR</th> <th>UNFILTERED OVA (PPM)</th> <th>FILTERED OVA (PPM)</th> <th>CORRECTED OVA (PPM)</th> <th>DEPTH IN FEET</th> <th>USCS CODE</th> <th>SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td rowspan="10">↓</td> <td>Dark Brown organic fine grained sand</td> </tr> <tr> <td></td> <td>2</td> <td></td> </tr> <tr> <td></td> <td>3</td> <td></td> </tr> <tr> <td></td> <td>4</td> <td></td> <td>tan fine grained sand brown to gray</td> </tr> <tr> <td></td> <td>5</td> <td></td> </tr> <tr> <td></td> <td>6</td> <td></td> </tr> <tr> <td></td> <td>7</td> <td></td> <td>Δ to Gu</td> </tr> <tr> <td></td> <td>8</td> <td></td> </tr> <tr> <td></td> <td>9</td> <td></td> </tr> <tr> <td></td> <td>10</td> <td></td> </tr> </tbody> </table>													SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY											1	↓	Dark Brown organic fine grained sand											2												3												4		tan fine grained sand brown to gray											5												6												7		Δ to Gu											8												9												10	
SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY																																																																																																																																								
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OVA shut down

APPENDIX D

**HEADSPACE METHODOLOGY FOR DETERMINING SOIL ORGANIC VAPOR
CONCENTRATIONS**

HEADSPACE METHODOLOGY FOR DETERMINING SOIL ORGANIC VAPOR CONCENTRATION

Soil headspace readings were obtained utilizing the following method which conforms to the requirements of Rule 62-770.200(2), FAC.

Two 16 ounce glass soil jars were half-filled with soil sample (duplicate samples). The soil jars were then sealed utilizing "mason jar" type open top screw on caps with foil in place of the conventional solid jar tops. The soil samples were allowed to equilibrate to ambient temperature which was within the FDEP temperature range.

The samples were tested with a Foxboro Century 128, an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID). Prior to each days activities, the OVA was field calibrated with 109 ppm methane in air, in accordance with the manufacturers specifications. Sample testing was performed by inserting the OVA probe through the foil sample cover and recording the highest OVA reading. Following collection of this OVA reading, the OVA was fitted with a granular activated carbon filter probe. The OVA was then used to test the headspace above the duplicate sample. Carbon absorbs petroleum hydrocarbons and thus the filtered reading is assumed to represent naturally occurring organic vapors.

Upon completion of the screening exercise, the carbon filtered result was subtracted from the un-filtered result, to obtain a net petroleum vapor value. In accordance with Rule 17(62)-770.200(2), F.A.C., and Guidelines for Assessment and Remediation of Petroleum Contaminated Soil (May 1994) corrected headspace levels in excess of 500 ppm is defined as excessively contaminated soil for gasoline contaminated soil. Corrected headspace levels in excess of 10 ppm but less than 500 ppm are considered as contaminated, though not excessively contaminated.

APPENDIX E

DISPOSAL MANIFEST AND PREBURN ANALYTICAL DATA

To: Stacey Stanley
From: Kerry Reeves

Manifest for drums at PSC 2

Manifests

Page 1 of 6

PTD-61

Emergency Contact Telephone Number
1-800-282-9251 ext 334

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No. **16970024412** Manifest Document No. **28939**

2. Page 1 of 1 Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
**NAVAL AIR STATION, JACKSONVILLE
PUBLIC WORKS CENTER, BOX 30, CODE 331
JACKSONVILLE, FLORIDA 32212 (BLVD 117)**

A. State Manifest Document Number
FL881801

4. Generator's Phone (904) 542-5929 (ORMO JACKSONVILLE)

B. State Generator's ID

5. Transporter 1 Company Name
CHEMICAL CONSERVATION CORP. 6. US EPA ID Number **FLD980559728**

C. State Transporter's ID
D. Transporter's Phone **(407) 859-4441**

7. Transporter 2 Company Name 8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
**CHEMICAL CONSERVATION CORP.
10100 ROCKET BLVD.
ORLANDO, FL 32824** 10. US EPA ID Number **FLD980559728**

G. State Facility's ID
FLD980559728

H. Facility's Phone
(407) 859-4441

HM	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers		13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
		No.	Type			
a	NON REGULATED SOLID, (OILY RAUS, SPILL, DEBRIS, MASKING WAX) (NONE...)	021	DM	02890	P	NONE
b	NON REGULATED LIQUID, (FIBER GENT PENETRANT) (NONE...)	011	DM	05330	P	NONE
c	NON REGULATED LIQUID, (D.W., WATER SLUDGE) (NONE...)	015	DM	08160	P	NONE
d	NON REGULATED LIQUID, (SPILL DEBRIS) (NONE...)	001	DM	00500	P	NONE

Additional Descriptions for Materials Listed Above

11A) DRUM 1278 13-17, 20, 22, 26, 27, 30, 31, 41, 49, 50	21X55
11B) DRUM 1278 13-19, 24, 25, 28, 29	11X55
11C) DRUM 1278 32-40, 43-48	15X55
11D) DRUM 1278 23	1X55

Handling Codes for Waste

(9904J)	(9902JY)	(9902JY)	(9902JY)
---------	----------	----------	----------

15. Special Handling Instructions and Additional Information
 24 HOUR EMERGENCY RESPONSE:
 MICHAEL JEFFRIES 1-(800)-282-9251 x334
 SP4400-96-D-0014-0818

(1A) ERG-N/A SEND PHOTOCOPY OF MANIFEST TO:
 (1B) ERG-N/A CHEM-MET SERVICES
 (1C) ERG-N/A 18550 ALLEN ROAD
 (1D) ERG-N/A WYANDOTTE, MICHIGAN 48192

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: *Wayne Chaffard* Signature: *Wayne Chaffard* Date: 11/18/98

17. Transporter 1 Acknowledgement of Receipt of Materials
 Printed/Typed Name: *MICHAEL HARE* Signature: *Michael Hare* Date: 11/18/98

18. Transporter 2 Acknowledgement of Receipt of Materials
 Printed/Typed Name: Signature: Date:

19. Discrepancy Indication Space

Facility Owner or Operator. Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
 Printed/Typed Name: Signature: Date:

ORIGINAL - RETURN TO GENERATOR

continuation sheet p

SP440096D0014-0818

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OFFEROR OR CONTRACTOR

CHEM-MET SERVICES INC

SUPPLIES / SERVICES		QUANTITY	UNIT	UNIT PRICE	AMOUNT
0028	01 83076248 J170, NON-R N689318295J046 9902JV J170, NON-RCRA, J8288055, FLUORESCENT PENETRANT SOLLIQ, Z# JX144ROWG, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP _____ PICK UP MANIFEST <u>28939</u> LINE CODE <u>A</u>	180	LB	.14000	72.80
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>
0029	01 83076250 J170, NON-R N689318295J047 9902JV J170, NON-RCRA, J8288056, FLUORESCENT PENETRANT SOLLIQ, Z# JX144ROWG, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP _____ PICK UP MANIFEST <u>28939</u> LINE CODE <u>B</u>	520	LB	.14000	70.00
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>
0030	01 83076252 J134, NON-R N689318295J050 9904JV J134, NON-RCRA, J8288059, OILY RAGS SOL, Z# JX144ROWG, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP _____ PICK UP MANIFEST <u>28939</u> LINE CODE <u>A</u>	500	LB	.14000	13.20
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>
0031	01 83076253 BRSY, NON-R N689318293J001 9904JV BRSY, NON-RCRA, J8278128, MASK FILTER SOL, Z# JX144ROWG, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP _____ PICK UP MANIFEST <u>28939</u> LINE CODE <u>A</u>	110	LB	.12000	13.20
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>
0032	01 83076255 ANAL, NON-R N689318299J001 9902JV ANAL, NON-RCRA, J8288020, DEVELOPMENT WATER PMW & 7849TDWPGW LIQ, Z# JX144ROWG, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP _____ PICK UP MANIFEST <u>28939</u> LINE CODE <u>C</u>	110	LB	.12000	56.0
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>
0033	01 83076256 ANAL, NON-R N689318299J002 9902JV ANAL, NON-RCRA, J8288021,	400	LB	.14000	75.0
					UD UNIT OF ISSUE <u>CB</u> PICK UP DATE <u>11-13-98</u>

NOV-03-1998 14:11

DRMO JAX ENVIRONMENTAL

REFERENCE NO. OF DOCUMENT (SEE WORK ORDER)

SP440096D0014-0818

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Continuation sheet P

OFFICE OF CONTRACTOR

CHEM-MET SERVICES INC

SUPPLIES / SERVICES

QUANTITY UNIT UNIT PRICE AMOUNT

CLIN	ACC DOCUMENT	DTID	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	DEVELOPMENT WATER PMW1 7849IDWPBGW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		540			
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0034	01 83076259 ANAL, NON-R N689318299J003 9902JV ANAL, NON-RCRA, J8288022, DEVELOPMENT WATER MW WELL7849IDWPBGW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		480	LE	.14000	67.20
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0035	01 83076260 ANAL, NON-R N689318299J004 9902JV ANAL, NON-RCRA, J8288023, SOIL CUTTING/WATER PMW-5 7849IDWPBGW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		700	LE	.14000	98.00
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0036	01 83076261 ANAL, NON-R N689318299J005 9902JV ANAL, NON-RCRA, J8288024, SOIL CUTTING PMW 3 WATER 7849 IDW PB SOIL LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		700			
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0037	01 83076262 ANAL, NON-R N689318299J006 9902JV ANAL, NON-RCRA, J8288025, SOIL CUTTING WATER PMW 6D7849 IDW PB SOIL LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		600	LE	.14000	84.00
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0037	01 83076262 ANAL, NON-R N689318299J006 9902JV ANAL, NON-RCRA, J8288025, SOIL CUTTING WATER PMW 6D7849 IDW PB SOIL LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		840	LE	.14000	117.60
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0038	01 83076265 ANAL, NON-R N689318299J007 9902JV ANAL, NON-RCRA, J8288026, SOIL CUTTING WATER PMW 6D7849 IDW PB SOIL LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>		800	LE	.14000	112.00
EPA WASTE CODE		UD QTY PICKED UP			UD UNIT OF ISSUE	
PICK UP MANIFEST 28939		LINE CODE C			PICK UP DATE 11-13-98	
0039	01 83076266 ANAL, NON-R N689318299J008		420	LE	.14000	58.80

STANDARD FOR JUNE 19-99
RECORDED BY GSA
GPO (48 CTR) 52-111

NOV-03-1998 14:12

DRMO JAX ENVIRONMENTAL

REFERENCE NO. OF OCCURRENCE REPORT

SP44D096D0014-0818

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Continuation sheet p

OFFEROR OR CONTRACTOR

CHEM-MET SERVICES INC

QUANTITY		UNIT	UNIT PRICE	AMOUNT
LINES / SERVICES				
CLIN ACC DOCUMENT NOUN 9902JV ANAL, NON-RCRA, <u>DTID</u> <u>J8288027</u> , DECON WATER 7849 IDW PB GW LIQ, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>				
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28439</u>	LINE CODE <u>C</u>	<u>420</u>	<u>LB</u>	<u>11-13-98</u>
0040	01	83076268 ANAL, NON-R <u>N689318299J009</u> 9902JV ANAL, NON-RCRA, <u>J8288028</u> , DEVELOPMENT WATER PMW 5 7849 IDW PB GW LIQ, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>	500 LB	.14000 70.00
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28439</u>	LINE CODE <u>C</u>	<u>500</u>	<u>LB</u>	<u>11-13-98</u>
0041	01	83076269 ANAL, NON-R <u>N689318299J010</u> 9904JV ANAL, NON-RCRA, <u>J8288029</u> , DECON PADS 7849 IDW PB GWSOL, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>	200 LB	.12000 24.00
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28439</u>	LINE CODE <u>A</u>	<u>200</u>	<u>LB</u>	<u>11-13-98</u>
32	01	83076277 ANAL, NON-R <u>N689318299J011</u> 9904JV ANAL, NON-RCRA, <u>J8288030</u> , SOIL CUTTINGS 7849 IDW PBSOIL SOL, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>	200 LB	.12000 24.00
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28440</u>	LINE CODE <u>A</u>	<u>200</u>	<u>LB</u>	<u>11-13-98</u>
0043	01	83076279 ANAL, NON-R <u>N689318299J013</u> 9902JV ANAL, NON-RCRA, <u>J8288032</u> , SOIL CUTTINGS PMW2 7849 IDW PB SOIL LIQ, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>	640 LB	.14000 89.6
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28539</u>	LINE CODE <u>C</u>	<u>640</u>	<u>LB</u>	<u>11-13-98</u>
0044	01	83076280 ANAL, NON-R <u>N689318299J014</u> 9902JV ANAL, NON-RCRA, <u>J8288033</u> , SOIL CUTTINGS PMW1 7849 IDW PB SOIL LIQ, 2# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207>	680 LB	.14000 95.2
EPA WASTE CODE	UD QTY PICKED UP		UD UNIT OF ISSUE	PICK UP DATE
PICK UP MANIFEST <u>28439</u>	LINE CODE <u>C</u>	<u>680</u>	<u>LB</u>	<u>11-13-98</u>

Continuation sheet

SP440096D0014-0818

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OFFEROR OR CONTRACTOR

CHEM-MET SERVICES INC

QUANTITIES / SERVICES		QUANTITY	UNIT	UNIT PRICE	AMOUNT
0045	CLIN ACC DOCUMENT SOURCE DTID 01 83076281 ANAL, NON-R N689318299J015 9902JV ANAL, NON-RCRA, J8288034, SOIL CUTTINGS PMW4 7849 IDW PB SOIL LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>640</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>C</u>	640	LB	.14000	89.60
0046	01 83076282 ANAL, NON-R N689318299J016 9902JV ANAL, NON-RCRA, J8288037, DEVELOPMENT WATER PMW 6D 7849 IDW PB GW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>180</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>C</u>	180	LB	.14000	25.20
0047	01 83076284 ANAL, NON-R N689318299J017 9902JV ANAL, NON-RCRA, J8288036, DEVELOPMENT PMW1 7849 IDWPS GW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>300</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>C</u>	300	LB	.14000	42.00
0048	01 83076286 ANAL, NON-R N689318299J018 9902JV ANAL, NON-RCRA, J8288035, DEVELOPMENT WATER MW WELL 7849 IDW PB GW LIQ, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>440</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>C</u>	440	LB	.14000	61.60
0049	01 83076288 J134X, NON- N689318295J066 9904JV J134X, NON-RCRA, J8288117, OILY RAGS SOL, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>180</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>A</u>	180	LB	.12000	21.60
0050	01 83076289 J134X, NON- N689318295J067 9904JV J134X, NON-RCRA, J8288118, OILY RAGS SOL, Z# JX144ROWH, 1/55 GL DM PICKUP ADDR <N00207> EPA WASTE CODE _____ UD QTY PICKED UP <u>160</u> PICK UP MANIFEST <u>28939</u> LINE CODE <u>A</u>	160	LB	.12000	19.20

1DW

Technical Report for

Tetra-Tech, NUS

FFTF

7849

Accutest Job Number: F2930

Report to:

Tetra-Tech, NUS
7018 A.C. Skinner Parkway
Suite 250
Jacksonville, FL 32256

ATTN: Stacey Stanley

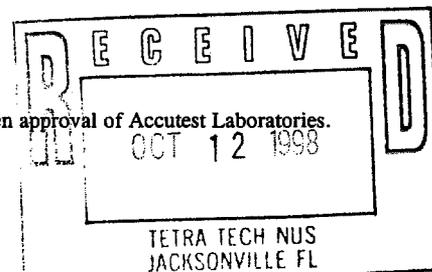
Total number of pages in report:



Harry Behzadi, Ph.D.
Laboratory Director

Results relate only to the items tested.

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.





Sample Summary

Tetra-Tech,NUS

Date: 10/02/98
Job No: F2930

FFTF

Project No: 7849

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F2930-1	09/15/98	14:00 JM	09/16/98	SO Soil	7849-IDW-PB-SOIL



Report of Analysis

Client Sample ID: 7849-IDW-PB-SOIL	Date Sampled: 09/15/98
Lab Sample ID: F2930-1	Date Received: 09/16/98
Matrix: SO - Soil	Percent Solids: 74.0
Method: EPA 8310	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a		1	09/25/98	SUB	n/a	n/a	R5634
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	33	ug/kg	
208-96-8	Acenaphthylene	ND	67	ug/kg	
120-12-7	Anthracene	ND	880	ug/kg	
56-55-3	Benzo(a)anthracene	ND	170	ug/kg	
50-32-8	Benzo(a)pyrene	ND	130	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	240	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	1000	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	230	ug/kg	
218-01-9	Chrysene	ND	200	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	400	ug/kg	
206-44-0	Fluoranthene	ND	280	ug/kg	
86-73-7	Fluorene	36	7.0	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	570	ug/kg	
91-20-3	Naphthalene	510	33	ug/kg	
90-12-0	1-Methylnaphthalene	ND	2000	ug/kg	
91-57-6	2-Methylnaphthalene	2100	2000	ug/kg	
85-01-8	Phenanthrene	ND	850	ug/kg	
129-00-0	Pyrene	ND	360	ug/kg	

(a) Analyzed By Accutest Southeast Subcontract Lab.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-SOIL	
Lab Sample ID: F2930-1	Date Sampled: 09/15/98
Matrix: SO - Soil	Date Received: 09/16/98
Method: FLORIDA-PRO	Percent Solids: 74.0
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01928.D	20	09/22/98	NF	09/21/98	OP513	GOP90
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	630	220	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-SOIL	
Lab Sample ID: F2930-1	Date Sampled: 09/15/98
Matrix: SO - Soil	Date Received: 09/16/98
	Percent Solids: 74.0
Project: FFTF	

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed By	Method
Solids, Percent	74		%	1	09/17/98 JK	EPA 160.3 M
Solids, Percent	74		%	1	09/22/98 ANJ	EPA 160.3 M
Total Organic Halides	<10	10	mg/kg	1	09/25/98 ANJ	SW846 9020 M

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: 7849-IDW-PB-SOIL	
Lab Sample ID: F2930-1	Date Sampled: 09/15/98
Matrix: SO - Soil	Date Received: 09/16/98
	Percent Solids: 74.0
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Arsenic	0.42 U	1.4	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Barium	26.1 B	27.0	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Cadmium	0.12 B	0.54	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Chromium	8.1	1.4	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Lead	4.9 B	13.5	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Mercury	<0.22	0.22	mg/kg	1	09/23/98	09/25/98 JK	SW846 7471A
Selenium	0.31 U	13.5	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A
Silver	0.24 U	1.4	mg/kg	1	09/23/98	09/25/98 JK	SW846 6010A

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: 7849-IDW-PB-SOIL	
Lab Sample ID: F2930-1	Date Sampled: 09/15/98
Matrix: SO - Soil	Date Received: 09/16/98
Method: SW846 8260B	Percent Solids: 74.0
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	K001703.D	100	09/17/98	RAW	n/a	n/a	VK19
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	270	ug/kg	
75-27-4	Bromodichloromethane	ND	270	ug/kg	
75-25-2	Bromoform	ND	270	ug/kg	
108-90-7	Chlorobenzene	ND	270	ug/kg	
75-00-3	Chloroethane	ND	270	ug/kg	
67-66-3	Chloroform	ND	270	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	680	ug/kg	
56-23-5	Carbon tetrachloride	ND	270	ug/kg	
75-34-3	1,1-Dichloroethane	ND	270	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	270	ug/kg	
106-93-4	1,2-Dibromoethane	ND	270	ug/kg	
107-06-2	1,2-Dichloroethane	ND	270	ug/kg	
78-87-5	1,2-Dichloropropane	ND	270	ug/kg	
124-48-1	Dibromochloromethane	ND	270	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	680	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	270	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	270	ug/kg	
541-73-1	m-Dichlorobenzene	ND	270	ug/kg	
95-50-1	o-Dichlorobenzene	ND	270	ug/kg	
106-46-7	p-Dichlorobenzene	ND	270	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	270	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	270	ug/kg	
100-41-4	Ethylbenzene	ND	270	ug/kg	
74-83-9	Methyl bromide	ND	680	ug/kg	
74-87-3	Methyl chloride	ND	680	ug/kg	
75-09-2	Methylene chloride	ND	680	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	270	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	270	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	270	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	270	ug/kg	
127-18-4	Tetrachloroethylene	ND	270	ug/kg	
108-88-3	Toluene	ND	270	ug/kg	
79-01-6	Trichloroethylene	ND	270	ug/kg	
75-69-4	Trichlorofluoromethane	ND	680	ug/kg	
75-01-4	Vinyl chloride	ND	680	ug/kg	
1330-20-7	Xylene (total)	ND	810	ug/kg	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 2 of 2

Client Sample ID: 7849-IDW-PB-SOIL	
Lab Sample ID: F2930-1	Date Sampled: 09/15/98
Matrix: SO - Soil	Date Received: 09/16/98
Method: SW846 8260B	Percent Solids: 74.0
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	K001703.D	100	09/17/98	RAW	n/a	n/a	VK19
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-120%
2037-26-5	Toluene-D8	104%		81-117%
460-00-4	4-Bromofluorobenzene	98%		74-121%
17060-07-0	1,2-Dichloroethane-D4	95%		80-120%

(a) Dilution required due to matrix interference.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories Southeast
 LOGIN CHAIN OF CUSTODY REPORT (ln01)
 Sep 17 1998, 08:41 am

Login Number: F2930
 Account: TETRFLJX Tetra-Tech,NUS
 Project: TETRFLJX1128 FFTF
 Client Project: 7849 Report to: Stacey Stanely

Laboratory	Deliv.	TA	Collect Date/Time	Receive Date	Due PR Date
F2930-1	COMMA	10	15-SEP-98 14:00	16-SEP-98	26-SEP-98
POC=7849-IDW-PB-SOIL					
SO	S		%SOL		
SO	S		FLPRO		
SO	P		HM8		
SO	C		AG		
SO	C		AS		
SO	C		BA		
SO	C		CD		
SO	C		CR		
SO	C		HG		
SO	C		METDIG		
SO	C		PB		
SO	C		SE		
SO	S		LC8310PAH		
SO	S		TOC		
SO	S		V5035KITLL		
SO	S		V82608021L		

Login: H. Hinkley Date: 9-17-98
 Login Review: _____ Date: _____
 CS Review: _____ Date: _____



Sample Summary

Tetra-Tech, NUS

Date: 09/28/98

FFTF
Project No: 7849

Job No: F2929

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F2929-1	09/15/98	15:00 JM	09/16/98	AQ Ground Water	7849-IDW-PB-GW



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
Method: EPA 8310	Percent Solids: n/a
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a		1	09/25/98	SUB	n/a	n/a	R5634
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	2.0	ug/l	
120-12-7	Anthracene	ND	0.70	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.80	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	0.20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.30	ug/l	
206-44-0	Fluoranthene	ND	0.20	ug/l	
86-73-7	Fluorene	ND	0.20	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.40	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	0.60	ug/l	
129-00-0	Pyrene	ND	0.30	ug/l	

(a) Analyzed By Accutest Southeast Subcontract Lab.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
Method: FLORIDA-PRO	Percent Solids: n/a
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01939.D	4	09/23/98	NF	09/22/98	OP486	GOP91
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	5.23	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
Method: EPA 504.1	Percent Solids: n/a
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01432.D	1	09/24/98	SKW	n/a	n/a	GMN67
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	Date Sampled: 09/15/98
Lab Sample ID: F2929-1	Date Received: 09/16/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF007187.D	1	09/22/98	JG	n/a	n/a	GEF164
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	2.8	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	1.8	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	24.0	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
Method: SW846 8021B	Percent Solids: n/a
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF007187.D	1	09/22/98	JG	n/a	n/a	GEF164
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	93%		75-125%
75-29-6	2-Chloropropane	95%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	83%		75-125%
462-06-6	Fluorobenzene	101%		75-125%
98-08-8	aaa-Trifluorotoluene	106%		75-125%

(a) Confirmed by reanalysis on dissimilar column.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	2.4 B	3.0	ug/l	1	09/25/98	09/25/98 JK	SW846 6010A

RDL = Reported Detection Limit



*Results just
LOW LOW?
where is acid*

09/28/98

Technical Report for

Tetra-Tech, NUS

FFTF

7849

Accutest Job Number: F2929

Report to:

**Tetra-Tech, NUS
7018 A.C. Skinner Parkway
Suite 250
Jacksonville, FL 32256**

ATTN: Stacey Stanely

Total number of pages in report: 10

**Harry Benzadi, Ph.D.
Laboratory Director**

Results relate only to the items tested.

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.



Sample Summary

Tetra-Tech,NUS

Date: 09/28/98

FFTF
Project No: 7849

Job No: F2929

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F2929-1	09/15/98	15:00 JM	09/16/98	AQ Ground Water	7849-IDW-PB-GW



Report of Analysis

Page 1 of 1

Client Sample ID: 7849-IDW-PB-GW	
Lab Sample ID: F2929-1	Date Sampled: 09/15/98
Matrix: AQ - Ground Water	Date Received: 09/16/98
Method: EPA 8310	Percent Solids: n/a
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a		1	09/25/98	SUB	n/a	n/a	R5634
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	2.0	ug/l	
120-12-7	Anthracene	ND	0.70	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.80	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	0.20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.30	ug/l	
206-44-0	Fluoranthene	ND	0.20	ug/l	
86-73-7	Fluorene	ND	0.20	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.40	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	0.60	ug/l	
129-00-0	Pyrene	ND	0.30	ug/l	

(a) Analyzed By Accutest Southeast Subcontract Lab.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID: 7849-IDW-PB-GW	Date Sampled: 09/15/98
Lab Sample ID: F2929-1	Date Received: 09/16/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01939.D	4	09/23/98	NF	09/22/98	OP486	GOP91
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	5.23	2.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		40-140%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID:	7849-IDW-PB-GW	Date Sampled:	09/15/98
Lab Sample ID:	F2929-1	Date Received:	09/16/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 504.1		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01432.D	1	09/24/98	SKW	n/a	n/a	GMN67
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 2

Client Sample ID:	7849-IDW-PB-GW	Date Sampled:	09/15/98
Lab Sample ID:	F2929-1	Date Received:	09/16/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF007187.D	1	09/22/98	JG	n/a	n/a	GEF164
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	2.8	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	1.8	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	24.0	3.0	ug/l	

ND = Not detected

RDL = Reported Detection Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound


ACCUTEST.
Report of Analysis

Page 2 of 2

Client Sample ID: 7849-IDW-PB-GW	Date Sampled: 09/15/98
Lab Sample ID: F2929-1	Date Received: 09/16/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF007187.D	1	09/22/98	JG	n/a	n/a	GEF164
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	93%		75-125%
75-29-6	2-Chloropropane	95%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	83%		75-125%
462-06-6	Fluorobenzene	101%		75-125%
98-08-8	aaa-Trifluorotoluene	106%		75-125%

(a) Confirmed by reanalysis on dissimilar column.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

**ACCUTEST****Report of Analysis**

Page 1 of 1

Client Sample ID: 7849-IDW-PB-GW	Date Sampled: 09/15/98
Lab Sample ID: F2929-1	Date Received: 09/16/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	2.4 B	3.0	ug/l	1	09/25/98	09/25/98 JK	SW846 6010A

RDL = Reported Detection Limit

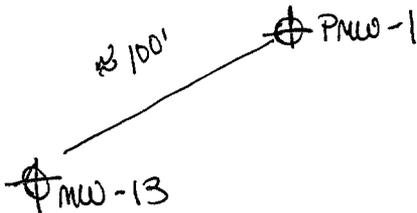
APPENDIX F
WELL COMPLETION LOGS



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:



PROJECT: FTF 7849	BORING NO. PMW-1
JOB NO. CTD-061	TOTAL DEPTH: 141
PROJ. MGR:	LOGGED BY: SAS
DRILLING CONTRACTOR: Groundwater protection	EDITED BY:
DRILL RIG TYPE:	
DRILLERS NAME:	
SAMPLING METHODS:	
HAMMER WT:	DROP:
STARTED TIME:	DATE:
COMPLETED TIME:	DATE:
BORING DEPTH (ft.)	
CASING DEPTH (ft.)	
WATER DEPTH (ft.)	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS: 3 1/2 bags of 20/30	

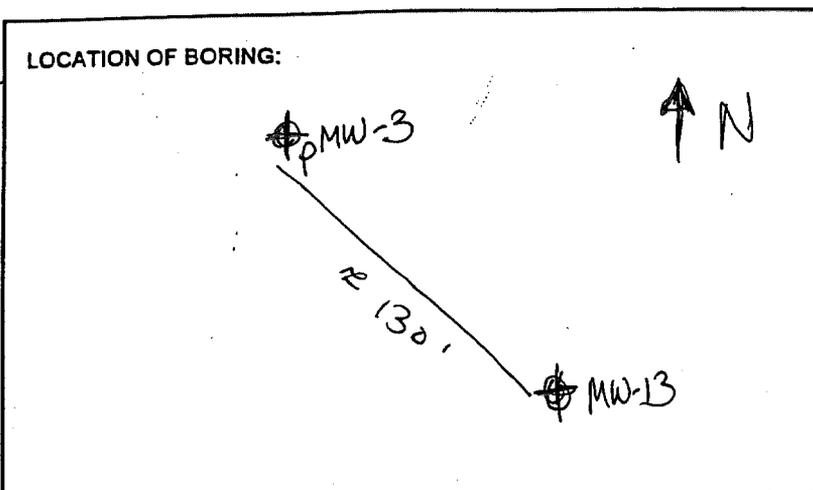
SAMPLE DE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none				1	tan fine grained sand (continuously)
										2	
										3	
										4	
					X					5	
					X					6	
					X					7	
					X					8	
					X					9	
					X					10	

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1



PROJECT: <i>JTF 7849</i>	BORING NO. <i>PMW-3</i>
JOB NO. <i>CTO-061</i>	TOTAL DEPTH: <i>14'</i>
PROJ. MGR:	LOGGED BY: <i>JRS</i>
DRILLING CONTRACTOR: <i>Groundwater Protection</i>	EDITED BY:
DRILL RIG TYPE:	
DRILLERS NAME:	
SAMPLING METHODS:	
HAMMER WT:	DROP:
STARTED TIME:	DATE:
COMPLETED TIME:	DATE:
BORING DEPTH (ft.) <i>14'</i>	
CASING DEPTH (ft.) <i>14'</i>	
WATER DEPTH (ft.) <i>5'</i>	
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:

SAMPLE DE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						<i>None</i>				1	
						<i>None</i>				2	
										3	
										4	
					<i>X</i>					5	
					<i>X</i>					6	
					<i>X</i>					7	
					<i>X</i>					8	
					<i>X</i>					9	
					<i>X</i>					10	

CONDITIONS: *4 bag 20/30 sand, 1/2 bag 30/65*
Grey F.G. sand + organics

Organic Dark brown F.G. sand

Lighter Red Brown fine grained sand.

tan fine grained sand
no odor.

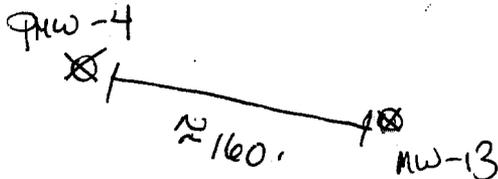
SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1

LOCATION OF BORING:



PROJECT: <i>FTF 7849</i>	BORING NO. <i>PMW-4</i>
JOB NO. <i>CTD-061</i>	TOTAL DEPTH: <i>15'</i>
PROJ. MGR:	LOGGED BY: <i>SAS</i>
EDITED BY:	
DRILLING CONTRACTOR: <i>GROUNDWATER PROTECTION</i>	
DRILL RIG TYPE:	
DRILLERS NAME:	
SAMPLING METHODS:	
HAMMER WT:	DROP:
STARTED TIME:	DATE:
COMPLETED TIME:	DATE:
BORING DEPTH (ft.)	<i>15'</i>
CASING DEPTH (ft.)	<i>15'</i>
WATER DEPTH (ft.)	<i>5.5'</i>
TIME:	
DATE:	
BACKFILLED TIME:	DATE: BY:
SURFACE ELEV.:	DATUM:
CONDITIONS: <i>5 bags of 20/30</i>	
<i>1/2 bag of 30/60</i>	

SAMPLE DEPTH	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						<i>low</i>				1	
						<i>low</i>				2	
						<i>low</i>				3	
						<i>low</i>				4	
					X					5	
					X					6	
					X					7	
					X					8	
					X					9	
					X					10	

Gray fine grained sand to tan.

Tan fine grained sand.

Moist tan fine grained sand

Light brown saturated fine grained sand.

Light gray saturated fine grained sand.

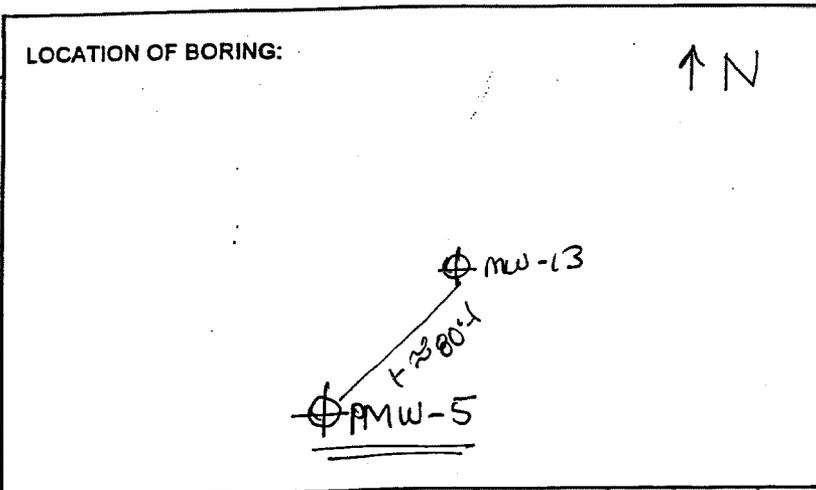
Some stone

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY



FIELD LOG OF BORING

SHEET 1 OF 1



PROJECT: FTF 7849	BORING NO. PMW-5
JOB NO. CTD-061	TOTAL DEPTH: 14
PROJ. MGR:	LOGGED BY: SAS
DRILLING CONTRACTOR: Groundwater Protection	EDITED BY:
DRILL RIG TYPE:	
DRILLERS NAME:	
SAMPLING METHODS:	
HAMMER WT:	DROP:
STARTED TIME:	DATE:
COMPLETED TIME:	DATE:
BORING DEPTH (ft.) 14	
CASING DEPTH (ft.) 14	
WATER DEPTH (ft.) to 4.5'	
TIME:	
DATE:	

SAMPLE DE	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE
						none				1	
						none				2	
						none				3	
						none				4	
					X	no odor				5	
					X					6	
					X					7	
					X					8	
					X					9	
					X					10	

BACKFILLED TIME: DATE: BY:

SURFACE ELEV.: DATUM:

CONDITIONS: 10' screen 5 bags 20/30
1/2 bag 30/60 S.

Dark grey Fine grained sand.

Light grey Fine Grained Sand to tab.

Tan red brown mix Fine grained sand

Gray moist Fine Grained sand.

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

continued gray moist Fine Grained



Brown & Root Environmental

APRIL, 1994

FIELD LOG OF BORING

SHEET 1 OF 3

LOCATION OF BORING: ↑ N

PMW-6D
15'
MW-13

PROJECT: FITF 7B49		BORING NO. PMW-6D	
JOB NO. CT0061		TOTAL DEPTH: 35'	
PROJ. MGR:		LOGGED BY: SAS	
DRILLING CONTRACTOR: Groundwater Protection		EDITED BY:	
DRILL RIG TYPE:			
DRILLERS NAME:			
SAMPLING METHODS:			
HAMMER WT:		DROP:	
STARTED TIME:		DATE:	
COMPLETED TIME:		DATE:	
BORING DEPTH (ft.)			
CASING DEPTH (ft.)			
WATER DEPTH (ft.)			
TIME:			
DATE:			
BACKFILLED TIME:		DATE:	BY:
SURFACE ELEV.:		DATUM:	
CONDITIONS:			

SAMPLE DEPTH (Blows)	SAMPLER TYPE	BLOWS/6-IN.	INCHES DRIVEN	INCHES RECOVERED	MOISTURE	ODOR	UNFILTERED OVA (PPM)	FILTERED OVA (PPM)	CORRECTED OVA (PPM)	DEPTH IN FEET	USCS CODE	SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY
	Post hole				dry	none				1		dark brown fine grained sand, no odor, dry
	↓				↓	↓				2		
	Post hole				moist	strong Petro				3		
3	SS				↓	↓				4		lt. grey fine grained sand w/ black staining strong petroleum odor moist
4				6"	wet	strong				5		
5				8"						6		lt. grey fine grained sand w/ black staining, strong petroleum odor, wet
6				12"						7		
7				12"						8		
8				12"						9		
9										10		

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

DEPTH	TYPE	BLOWS	DRIVEN	REC'D	MOISTURE	ODOR	UNFILTER	FILTERED	CORRECT	DEPTH	USCS CODE	PROJECT:	NO.	BORING NO.	
	SS	WN	1		wet	slight				31	screen				
		4								32					
		2								33					
		2								34					
		4								35					
										6					
										7					
										8					
										9					
										0					
										1					
										2					
										3					
										4					
										5					
										6					
										7					
										8					
										9					
										0					

PROJECT: NO. BORING NO.

lt. grey, wet Fg sand

dark grey, wet, Fg sand, petroleum odor

clayey silt

END OF BORING

5/2/05

20/05

screen

SOIL/SEDIMENT DESCRIPTION, GRAIN SIZE, COLOR, ANGULARITY, DENSITY/CONSISTANCY

APPENDIX G
MOBILE LABORATORY ANALYTICAL RESULTS

PRELIMINARY DATA REPORT

Tetra Tech NUS, Inc.
7018 A.C. Skinner Parkway, Suite 250
Jacksonville, Florida 32256

Fire Fighter Training Facility, Jacksonville NAS
CLIENT PROJECT # 7849

TEG PROJECT # 3-98249-G1

BTEX ANALYSIS OF SOIL (EPA METHOD 8020)

DATA REPORTED IN MILLIGRAMS PER KILOGRAM (PPM)

SAMPLE ID	DATE COLLECTED	DATE ANALYZED	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZ (mg/kg)	XYLENES (mg/kg)	TOT. BTEX (mg/kg)	Surrogate Recovery (%)	Data Qualifiers	PQL
METHOD BLANK	—	7/6/98	ND	ND	ND	ND	ND	100.4		0.005
SB-1	7/6/98	7/6/98	ND	ND	ND	ND	ND	105.7		0.005
SB-2	7/6/98	7/6/98	ND	ND	ND	ND	ND	95.8		0.005
SB-3	7/6/98	7/6/98	ND	ND	ND	ND	ND	98.1		0.005
SB-4	7/6/98	7/6/98	0.05	0.03	0.07	0.30	0.45	83.2	D	0.01
SB-5	7/6/98	7/6/98	ND	ND	ND	ND	ND	98.6		0.005
SB-6	7/6/98	7/6/98	ND	ND	ND	0.167	0.167	95.0		0.005
SB-7	7/6/98	7/6/98	ND	0.038	ND	0.323	0.360	91.1		0.005
SB-8	7/6/98	7/6/98	0.58	0.30	0.79	3.29	4.95	96.7	D	0.05
SB-9	7/6/98	7/6/98	ND	ND	ND	ND	ND	95.1		0.005
SB-10	7/6/98	7/6/98	ND	ND	ND	ND	ND	94.5		0.005
METHOD BLANK	—	7/7/98	ND	ND	ND	ND	ND	97.1		0.005
SB-11	7/7/98	7/7/98	0.28	0.16	0.18	0.93	1.55	98.0	D	0.01
SB-12	7/7/98	7/7/98	0.019	0.006	0.008	0.027	0.060	85.0		0.005
SB-13	7/7/98	7/7/98	0.120	0.108	0.122	0.374	0.724	103.4		0.005
SB-14	7/7/98	7/7/98	ND	0.012	ND	0.014	0.026	80.9		0.005
SB-15	7/7/98	7/7/98	0.142	0.097	0.202	0.733	1.174	113.1		0.005
	7/7/98	7/7/98	ND	ND	ND	ND	ND			0.005
	7/7/98	7/7/98	ND	ND	ND	ND	ND			0.005
	7/7/98	7/7/98	ND	ND	ND	ND	ND			0.005
	7/7/98	7/7/98	ND	ND	ND	ND	ND			0.005
Duplicate	7/7/98	7/7/98	ND	ND	ND	ND	ND			0.005

"ND" INDICATES ANALYTE NOT DETECTED AT OR ABOVE LISTED PRACTICAL QUANTITATION LIMITS (PQL'S)

ANALYSIS PERFORMED IN TEG'S CERTIFIED MOBILE LABORATORY

ANALYSIS PERFORMED BY: Theresa Sorrells

DATA REVIEWED BY:

DATA QUALIFIERS

M = MATRIX INTERFERENCE

D = SURROGATE SPIKE DILUTED OUT

D = ALL SAMPLE VALUES OBTAINED BY DILUTION, PQL IS ADJUSTED ACCORDINGLY

d = INDIVIDUAL VALUE OBTAINED BY DILUTION

PRELIMINARY DATA REPORT

Tetra Tech NUS, Inc.
7018 A.C. Skinner Parkway, Suite 250
Jacksonville, Florida 32256

Fire Fighter Training Facility, Jacksonville NAS
CLIENT PROJECT # 7849

TEG PROJECT # 3-98249-G1

TPH-DRO ANALYSIS OF SOIL (EPA METHOD 3550/8015 Mod.)

DATA REPORTED IN MILLIGRAMS PER KILOGRAM (PPM)

SAMPLE ID	DATE COLLECTED	DATE ANALYZED	TPH-DRO (mg/kg)	Surrogate Recovery (%)	Data Qualifiers	PQL
METHOD BLANK	---	7/6/98	ND	101.2		10
SB-1	7/6/98	7/6/98	12	112.8		10
SB-2	7/6/98	7/6/98	ND	100.1		10
SB-3	7/6/98	7/6/98	ND	97.4		10
SB-4	7/6/98	7/6/98	1747	110.0		10
SB-5	7/6/98	7/6/98	ND	94.4		10
SB-6	7/6/98	7/6/98	ND	105.8		10
SB-7	7/6/98	7/6/98	ND	107.9		10
SB-8	7/6/98	7/6/98	38800	DO	D	200
SB-9	7/6/98	7/6/98	ND	113.8		10
SB-10	7/6/98	7/6/98	ND	86.8		10
METHOD BLANK	---	7/7/98	ND	92.6		10
SB-11	7/7/98	7/7/98	1998	106.9		10
SB-12	7/7/98	7/7/98	837	100.6		10
SB-13	7/7/98	7/7/98	411	87.7		10
SB-14	7/7/98	7/7/98	ND	81.1		10
SB-15	7/7/98	7/7/98	2515	113.8		10
SB-16	7/7/98	7/7/98	4852	92.1		10
SB-17	7/7/98	7/7/98	7426	109.3	E	10
	7/7/98	7/7/98	ND			10
	7/7/98	7/7/98	ND			10
SB-2 Duplicate	7/6/98	7/6/98	ND	103.6		10

"ND" INDICATES ANALYTE NOT DETECTED AT OR ABOVE LISTED PRACTICAL QUANTITATION LIMITS (PQL'S)

ANALYSIS PERFORMED IN TEG'S CERTIFIED MOBILE LABORATORY

ANALYSIS PERFORMED BY: Theresa Sorrells

DATA REVIEWED BY:

DATA QUALIFIERS

MI = MATRIX INTERFERENCE

DO = SURROGATE SPIKE DILUTED OUT

D = ALL SAMPLE VALUES OBTAINED BY DILUTION, PQL IS ADJUSTED ACCORDINGLY

INDIVIDUAL VALUE OBTAINED BY DILUTION

E = ESTIMATED CONCENTRATION(S)

PRELIMINARY DATA REPORT

Tetra Tech NUS, Inc.
7018 A.C. Skinner Parkway, Suite 250
Jacksonville, Florida 32256

Fire Fighter Training Facility, Jacksonville NAS
CLIENT PROJECT #7849

TEG PROJECT # 3-98249-G1

BTEX ANALYSIS OF WATER (EPA METHOD 8020)

DATA REPORTED IN MICROGRAMS PER LITER (PPB)

SAMPLE ID	DATE COLLECTED	DATE ANALYZED	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZ (ug/L)	XYLENES (ug/L)	TOT. BTEX (ug/L)	Surrogate Recovery (%)	Data Qualifiers	PQL
METHOD BLANK	—	7/6/98	ND	ND	ND	ND	ND	100.4		2.0
SB-1	7/6/98	7/6/98	5.2	ND	7.6	5.7	18.5	97.5		2.0
SB-2	7/6/98	7/6/98	ND	2.0	ND	4.7	6.7	100.3		2.0
SB-3	7/6/98	7/6/98	38.8	2.2	31.2	72.3	144.6	95.4		2.0
SB-4	7/6/98	7/6/98	20.5	ND	13.6	41.3	75.3	100.0		2.0
SB-5	7/6/98	7/6/98	ND	ND	ND	ND	ND	96.4		2.0
SB-6	7/6/98	7/6/98	29.1	2.3	22.1	44.3	97.8	105.1		2.0
SB-7	7/6/98	7/6/98	10.2	4.2	50.4	254.3	319.1	101.2		2.0
SB-8	7/6/98	7/6/98	28	ND	25	159	211	97.5	D	10
SB-9	7/6/98	7/6/98	ND	2.6	ND	ND	2.6	100.5		2.0
SB-10	7/6/98	7/6/98	ND	3.6	ND	3.9	7.6	98.7		2.0
METHOD BLANK	—	7/7/98	ND	ND	ND	ND	ND	97.1		2.0
SB-11	7/7/98	7/7/98	74	14	105	180	373	82.6	D	10
SB-12	7/7/98	7/7/98	12	16	12	66	105	88.6	D	10
SB-13	7/7/98	7/7/98	54.7	18.4	48.3	75.0	196.4	86.5		2.0
SB-14	7/7/98	7/7/98	4.5	7.0	3.1	10.6	25.2	100.0		2.0
SB-15	7/7/98	7/7/98	64	72	126	643	905	81.5	D	10
SB-16	7/7/98	7/7/98	122	40	179	426	767	84.8	D	10
	7/7/98	7/7/98	ND	ND	ND	ND	ND			2.0
	7/7/98	7/7/98	ND	ND	ND	ND	ND			2.0
	7/7/98	7/7/98	ND	ND	ND	ND	ND			2.0
Duplicate	7/7/98	7/7/98	ND	ND	ND	ND	ND			2.0

"ND" INDICATES ANALYTE NOT DETECTED AT OR ABOVE LISTED PRACTICAL QUANTITATION LIMITS (PQL'S)

ANALYSIS PERFORMED IN TEG'S CERTIFIED MOBILE LABORATORY

ANALYSIS PERFORMED BY: Theresa Sorrells

DATA REVIEWED BY:

DATA QUALIFIERS

M = MATRIX INTERFERENCE

S = SURROGATE SPIKE DILUTED OUT

D = ALL SAMPLE VALUES OBTAINED BY DILUTION, PQL IS ADJUSTED ACCORDINGLY

d = INDIVIDUAL VALUE OBTAINED BY DILUTION

PRELIMINARY DATA REPORT

Tetra Tech NUS, Inc.
7018 A.C. Skinner Parkway, Suite 250
Jacksonville, Florida 32256

Fire Fighter Training Facility, Jacksonville NAS
CLIENT PROJECT # 7849

TEG PROJECT # 3-98249-G1

TPH-DRO ANALYSIS OF WATER (EPA METHOD 3510/8015 Mod.)

DATA REPORTED IN MILLIGRAMS PER LITER (PPM)

SAMPLE ID	DATE COLLECTED	DATE ANALYZED	TPH-DRO (mg/L)	Surrogate Recovery (%)	Data Qualifiers	PQL
METHOD BLANK	—	7/6/98	ND	101.2		0.50
SB-1	7/6/98	7/6/98	ND	92.8		0.50
SB-2	7/6/98	7/6/98	ND	80.2		0.50
SB-3	7/6/98	7/6/98	1.70	84.3		0.50
SB-4	7/6/98	7/6/98	2.24	101.5		0.50
SB-5	7/6/98	7/6/98	ND	99.0		0.50
SB-6	7/6/98	7/6/98	1.65	69.4		0.50
SB-7	7/6/98	7/6/98	1.72	87.3		0.50
SB-8	7/6/98	7/6/98	3.02	73.6		0.50
SB-9	7/6/98	7/6/98	ND	77.7		0.50
SB-10	7/6/98	7/6/98	ND	90.4		0.50
METHOD BLANK	—	7/7/98	ND	85.6		0.50
SB-11	7/7/98	7/7/98	18.67	101.8		0.50
SB-12	7/7/98	7/7/98	42.79	108.7		0.50
SB-13	7/7/98	7/7/98	9.92	88.2		0.50
SB-14	7/7/98	7/7/98	ND	87.6		0.50
SB-15	7/7/98	7/7/98	146.01	97.2		0.50
SB-16	7/7/98	7/7/98	129.22	87.8		0.50
SB-17	7/7/98	7/7/98	0.64	89.9		0.50
	7/7/98	7/7/98	ND			0.50
	7/7/98	7/7/98	ND			0.50
SB-2 Duplicate	7/6/98	7/6/98	ND	83.4		0.50

"ND" INDICATES ANALYTE NOT DETECTED AT OR ABOVE LISTED PRACTICAL QUANTITATION LIMITS (PQL'S)

ANALYSIS PERFORMED IN TEG'S CERTIFIED MOBILE LABORATORY

ANALYSIS PERFORMED BY: Theresa Sorrells

DATA REVIEWED BY:

DATA QUALIFIERS

● = MATRIX INTERFERENCE

○ = SURROGATE SPIKE DILUTED OUT

D = ALL SAMPLE VALUES OBTAINED BY DILUTION, PQL IS ADJUSTED ACCORDINGLY

d = INDIVIDUAL VALUE OBTAINED BY DILUTION

APPENDIX H
CONFIRMATORY ANALYTICAL SOIL DATA

Technical Report for

Tetra-Tech,NUS

FFTF

7849

Accutest Job Number: F2891

Report to:

Tetra-Tech,NUS
7018 A.C. Skinner Parkway
Suite 250
Jacksonville, FL 32256

ATTN: Stacey Stanely

Total number of pages in report: 20



Harry Behzadi, Ph.D.
Laboratory Director

Results relate only to the items tested.

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.



Sample Summary

Tetra-Tech,NUS

Date: 09/28/98

FFTF

Job No: F2891

Project No: 7849

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F2891-1	09/08/98	00:00 SS	09/09/98	SO	Soil	FFTF7849/SB-14L/090898
F2891-2	09/08/98	00:00 SS	09/09/98	SO	Soil	FFTF7849/SB-15M/090898
F2891-3	09/08/98	00:00 SS	09/09/98	SO	Soil	FFTF7849/SB-17H/090898



Report of Analysis

Client Sample ID: FFTF7849/SB-14L/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-1	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 79.9
Method: FLORIDA-PRO	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01831.D	1	09/17/98	NF	09/15/98	OP513	GOP87
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-14L/090898	
Lab Sample ID: F2891-1	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: SW846 8310	Percent Solids: 79.9
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	09/21/98	AMA	09/14/98	M:OP789	M:GC662
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	41	ug/kg	
208-96-8	Acenaphthylene	ND	41	ug/kg	
120-12-7	Anthracene	ND	41	ug/kg	
56-55-3	Benzo (a) anthracene	ND	6.2	ug/kg	
50-32-8	Benzo (a) pyrene	ND	6.2	ug/kg	
205-99-2	Benzo (b) fluoranthene	ND	6.2	ug/kg	
191-24-2	Benzo (g,h,i) perylene	ND	6.2	ug/kg	
207-08-9	Benzo (k) fluoranthene	ND	6.2	ug/kg	
218-01-9	Chrysene	ND	6.2	ug/kg	
53-70-3	Dibenz(a,h)anthracene	ND	6.2	ug/kg	
206-44-0	Fluoranthene	ND	6.2	ug/kg	
86-73-7	Fluorene	ND	41	ug/kg	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	6.2	ug/kg	
90-12-0	1-Methylnaphthalene	ND	41	ug/kg	
91-57-6	2-Methylnaphthalene	ND	41	ug/kg	
91-20-3	Naphthalene	ND	41	ug/kg	
85-01-8	Phenanthrene	ND	41	ug/kg	
129-00-0	Pyrene	ND	6.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	53.5%		20-130%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID: FFTF7849/SB-14L/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-1	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 79.9
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	< 12	12	mg/kg	1	09/15/98	09/15/98 JK	SW846 6010A

RDL = Reported Detection Limit



Report of Analysis

Page 1 of 2

Client Sample ID: FFTF7849/SB-14L/090898		
Lab Sample ID: F2891-1	Date Sampled: 09/08/98	
Matrix: SO - Soil	Date Received: 09/09/98	
Method: SW846 8260B	Percent Solids: 79.9	
Project: FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K001675.D	1	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	2.5	ug/kg	
75-27-4	Bromodichloromethane	ND	2.5	ug/kg	
75-25-2	Bromoform	ND	2.5	ug/kg	
108-90-7	Chlorobenzene	ND	2.5	ug/kg	
75-00-3	Chloroethane	ND	2.5	ug/kg	
67-66-3	Chloroform	ND	2.5	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	6.2	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.5	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.5	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.5	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.5	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.5	ug/kg	
124-48-1	Dibromochloromethane	ND	2.5	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.2	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.5	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.5	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.5	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.5	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.5	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	ug/kg	
100-41-4	Ethylbenzene	ND	2.5	ug/kg	
74-83-9	Methyl bromide	ND	6.2	ug/kg	
74-87-3	Methyl chloride	ND	6.2	ug/kg	
75-09-2	Methylene chloride	ND	6.2	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.5	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.5	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.5	ug/kg	
108-88-3	Toluene	ND	2.5	ug/kg	
79-01-6	Trichloroethylene	ND	2.5	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.2	ug/kg	
75-01-4	Vinyl chloride	ND	6.2	ug/kg	
1330-20-7	Xylene (total)	ND	7.5	ug/kg	

ND = Not detected

RDL = Reported Detection Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-14L/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-1	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 79.9
Method: SW846 8260B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K001675.D	1	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	93%		80-120%
2037-26-5	Toluene-D8	99%		81-117%
460-00-4	4-Bromofluorobenzene	103%		74-121%
17060-07-0	1,2-Dichloroethane-D4	86%		80-120%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-15M/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-2	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 80.5
Method: FLORIDA-PRO	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01832.D	1	09/17/98	NF	09/15/98	OP513	GOP87
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	10	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-15M/090898	
Lab Sample ID: F2891-2	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: SW846 8310	Percent Solids: 80.5
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	09/21/98	AMA	09/14/98	M:OP789	M:GC662
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	41	ug/kg	
208-96-8	Acenaphthylene	ND	41	ug/kg	
120-12-7	Anthracene	ND	41	ug/kg	
56-55-3	Benzo (a) anthracene	ND	6.2	ug/kg	
50-32-8	Benzo (a) pyrene	ND	6.2	ug/kg	
205-99-2	Benzo (b) fluoranthene	ND	6.2	ug/kg	
191-24-2	Benzo (g,h,i) perylene	ND	6.2	ug/kg	
207-08-9	Benzo (k) fluoranthene	ND	6.2	ug/kg	
218-01-9	Chrysene	ND	6.2	ug/kg	
53-70-3	Dibenz(a,h)anthracene	ND	6.2	ug/kg	
206-44-0	Fluoranthene	ND	6.2	ug/kg	
86-73-7	Fluorene	ND	41	ug/kg	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	6.2	ug/kg	
90-12-0	1-Methylnaphthalene	ND	41	ug/kg	
91-57-6	2-Methylnaphthalene	ND	41	ug/kg	
91-20-3	Naphthalene	ND	41	ug/kg	
85-01-8	Phenanthrene	ND	41	ug/kg	
129-00-0	Pyrene	ND	6.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	67.8%		20-130%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-15M/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-2	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 80.5
Method: SW846 8260B	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K001676.D	1	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	2.5	ug/kg	
75-27-4	Bromodichloromethane	ND	2.5	ug/kg	
75-25-2	Bromoform	ND	2.5	ug/kg	
108-90-7	Chlorobenzene	ND	2.5	ug/kg	
75-00-3	Chloroethane	ND	2.5	ug/kg	
67-66-3	Chloroform	ND	2.5	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	6.3	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.5	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	2.5	ug/kg	
106-93-4	1,2-Dibromoethane	ND	2.5	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.5	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.5	ug/kg	
124-48-1	Dibromochloromethane	ND	2.5	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.3	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	2.5	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	ug/kg	
541-73-1	m-Dichlorobenzene	ND	2.5	ug/kg	
95-50-1	o-Dichlorobenzene	ND	2.5	ug/kg	
106-46-7	p-Dichlorobenzene	ND	2.5	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	2.5	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	ug/kg	
100-41-4	Ethylbenzene	ND	2.5	ug/kg	
74-83-9	Methyl bromide	ND	6.3	ug/kg	
74-87-3	Methyl chloride	ND	6.3	ug/kg	
75-09-2	Methylene chloride	ND	6.3	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.5	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.5	ug/kg	
127-18-4	Tetrachloroethylene	ND	2.5	ug/kg	
108-88-3	Toluene	ND	2.5	ug/kg	
79-01-6	Trichloroethylene	ND	2.5	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.3	ug/kg	
75-01-4	Vinyl chloride	ND	6.3	ug/kg	
1330-20-7	Xylene (total)	ND	7.6	ug/kg	

ND = Not detected

RDL = Reported Detection Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Report of Analysis

Page 2 of 2

Client Sample ID: FFTF7849/SB-15M/090898	
Lab Sample ID: F2891-2	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: SW846 8260B	Percent Solids: 80.5
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K001676.D	1	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
2037-26-5	Toluene-D8	96%		81-117%
460-00-4	4-Bromofluorobenzene	100%		74-121%
17060-07-0	1,2-Dichloroethane-D4	97%		80-120%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-15M/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-2	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 79.5
Project: FFTF	

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed By	Method
Solids, Percent	79.5		%	1	09/14/98 JK	EPA 160.3 M
Total Organic Carbon	1610	1200	mg/kg	1	09/14/98 ANJ	CORP ENG 81 M

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: FFTF7849/SB-17H/090898	
Lab Sample ID: F2891-3	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: FLORIDA-PRO	Percent Solids: 81.4
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01847.D	150	09/17/98	NF	09/15/98	OP513	GOP87
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	4970	1600	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	0% ^a		40-140%

(a) Outside control limits due to dilution.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-17H/090898	Date Sampled: 09/08/98
Lab Sample ID: F2891-3	Date Received: 09/09/98
Matrix: SO - Soil	Percent Solids: 81.4
Method: SW846 8310	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	09/21/98	AMA	09/14/98	M:OP789	M:GC662
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	2310	40	ug/kg	
208-96-8	Acenaphthylene	ND	40	ug/kg	
120-12-7	Anthracene	ND	40	ug/kg	
56-55-3	Benzo (a) anthracene	ND	6.1	ug/kg	
50-32-8	Benzo (a) pyrene	ND	6.1	ug/kg	
205-99-2	Benzo (b) fluoranthene	ND	6.1	ug/kg	
191-24-2	Benzo (g,h,i) perylene	ND	6.1	ug/kg	
207-08-9	Benzo (k) fluoranthene	ND	6.1	ug/kg	
218-01-9	Chrysene	ND	6.1	ug/kg	
53-70-3	Dibenz(a,h)anthracene	ND	6.1	ug/kg	
206-44-0	Fluoranthene	1690	6.1	ug/kg	
86-73-7	Fluorene	243	40	ug/kg	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	6.1	ug/kg	
90-12-0	1-Methylnaphthalene	3840	40	ug/kg	
91-57-6	2-Methylnaphthalene	4810	40	ug/kg	
91-20-3	Naphthalene	3280	40	ug/kg	
85-01-8	Phenanthrene	1800	40	ug/kg	
129-00-0	Pyrene	453	6.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	207% ^a		20-130%

(a) Outside control limits due to matrix interference.confirmed by DUP.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FFTF7849/SB-17H/090898	
Lab Sample ID: F2891-3	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
	Percent Solids: 81.4
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	< 12	12	mg/kg	1	09/15/98	09/15/98 JK	SW846 6010A

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: FFTF7849/SB-17H/090898	
Lab Sample ID: F2891-3	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: SW846 8260B	Percent Solids: 81.4
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	K001677.D	100	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	250	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
108-90-7	Chlorobenzene	ND	250	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	250	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	630	ug/kg	
56-23-5	Carbon tetrachloride	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	250	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	250	ug/kg	
106-93-4	1,2-Dibromoethane	ND	250	ug/kg	
107-06-2	1,2-Dichloroethane	ND	250	ug/kg	
78-87-5	1,2-Dichloropropane	ND	250	ug/kg	
124-48-1	Dibromochloromethane	ND	250	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	630	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	250	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	250	ug/kg	
541-73-1	m-Dichlorobenzene	ND	250	ug/kg	
95-50-1	o-Dichlorobenzene	ND	250	ug/kg	
106-46-7	p-Dichlorobenzene	ND	250	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	250	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	250	ug/kg	
100-41-4	Ethylbenzene	352	250	ug/kg	↓
74-83-9	Methyl bromide	ND	630	ug/kg	
74-87-3	Methyl chloride	ND	630	ug/kg	
75-09-2	Methylene chloride	ND	630	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	250	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	250	ug/kg	
127-18-4	Tetrachloroethylene	ND	250	ug/kg	
108-88-3	Toluene	ND	250	ug/kg	
79-01-6	Trichloroethylene	ND	250	ug/kg	
75-69-4	Trichlorofluoromethane	ND	630	ug/kg	
75-01-4	Vinyl chloride	ND	630	ug/kg	
1330-20-7	Xylene (total)	3430	760	ug/kg	↓

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 2 of 2

Client Sample ID: FFTF7849/SB-17H/090898	
Lab Sample ID: F2891-3	Date Sampled: 09/08/98
Matrix: SO - Soil	Date Received: 09/09/98
Method: SW846 8260B	Percent Solids: 81.4
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	K001677.D	100	09/11/98	RAW	n/a	n/a	VK17
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-120%
2037-26-5	Toluene-D8	99%		81-117%
460-00-4	4-Bromofluorobenzene	99%		74-121%
17060-07-0	1,2-Dichloroethane-D4	98%		80-120%

(a) Dilution required due to compounds above calibration range.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Down & Root Environmental

REPORT TO ADDRESS:

7018 A.C. Skinner Pkwy
Suite 250
Jax, FL 32246

TELEPHONE: 904-281-0400 FAX: 904-281-0070

SITE MANAGER: Steve Stanley
PROJECT NAME: FFTF SOIL SAMPLES
BRE PROJECT NO.: 7849 CODE: _____
P.O. NO.: _____

SHIPPED TO:

Page 1 of 4

ACCUTEST LAB, ORLANDO
(LABORATORY NAME, CITY)

CHAIN OF CUSTODY RECORD

LABORATORY ANALYSIS

SAMPLED BY (PRINT): S. Stanley A. Wilcox

SAMPLER SIGNATURE: [Signature]

SAMPLE TYPE

COMP. GRAB

MATRIX

PRES. TYPE	none	none	N/C	none	none	N/C
PARAMETERS	0021 B	Lead	0310	50352	FLRU	TOC

STANDARD TAT RUSH
 24 HR. 48 HR. 72 HR. 7 DAYS

RESULTS DUE DATE: _____

COMMENTS:

LAB NO.	DATE	TIME	SAMPLE IDENTIFICATION	COMP.	GRAB	MATRIX
090898	1545		FFTF 7849/SB-14L/090898		✓	S
090898	1630		FFTF 7849/SB-15M/090898		✓	S
090898	1600		FFTF 7849/SB-17H/090898		✓	S

PARAMETERS	0021 B	Lead	0310	50352	FLRU	TOC	NUMBER OF CONTAINERS
3	1	1	1	1	1	1	7 (7 bottles)
4	1	1	1	1	1	1	9
4	1	1	1	1	1	1	8 (8 bottles)

TOTAL NUMBER OF CONTAINERS 11 3 3 3 3 1 24

EMPTY BOTTLES RELINQUISHED BY (SIGNATURE)	SEAL INTACT?	DATE:
① <u>[Signature]</u>	YES NO N/A	6-29-98
RELINQUISHED BY (SIGNATURE)	SEAL INTACT?	DATE:
③ <u>[Signature]</u>	YES NO N/A	9/8/98
RELINQUISHED BY (SIGNATURE)	SEAL INTACT?	DATE:
⑤	YES NO N/A	

TIME:	DATE:
15:00	9/8/98
TIME:	DATE:
18:15	
TIME:	DATE:

EMPTY BOTTLES RECEIVED BY (SIGNATURE)	SEAL INTACT?	DATE:
②	YES NO N/A	
RECEIVED BY (SIGNATURE)	SEAL INTACT?	DATE:
④	YES NO N/A	
RECEIVED BY (SIGNATURE)	SEAL INTACT?	DATE:
⑥	YES NO N/A	

TIME:	DATE:
TIME:	DATE:
TIME:	DATE:

SPECIAL INSTRUCTIONS:

LABORATORY REMARKS: KR# 0226

SAMPLE CONTAINERS PRECLEANED BY:
 BRE LABORATORY MANUFACTURER

METHOD OF SHIPMENT: FedEx 83922

BILL OF LADING NO.: _____

WHITE-FULLY EXECUTED COPY
YELLOW-RECEIVING LABORATORY COPY
PINK-SAMPLERS' COPY/QA COPY
GOLDENROD-SITE MANAGERS' COPY

SAMPLING TEAM: A. Wilcox, S. Stanley

RECEIVED FOR LABORATORY BY (SIGNATURE): [Signature]
DATE: 09-09-98 TIME: 11:15 AM

INR. No. 3507

APPENDIX I
GROUNDWATER CALULATIONS

MEAN HYDRAULIC CONDUCTIVITY SLUG TEST RESULTS :

① Hydraulic Conductivity Calculation :

where $K_{PMW-1} = 0.001283 \text{ ft/min}$

$K_{PMW-2} = 0.0003873 \text{ ft/min}$

$K_{PMW-4} = 0.000327 \text{ ft/min}$

$K_{mean} = 0.0006658 \text{ ft/min} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{\text{day}}$

$K_{mean} = 0.958752 \text{ ft/day}$

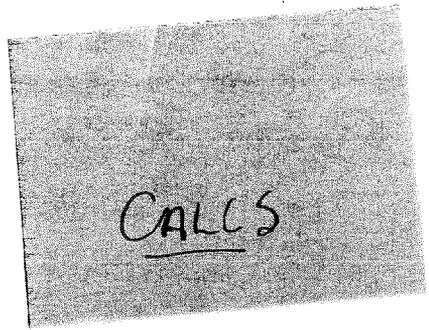
② Hydraulic Gradient Calculation :

(2.7.1)

$i = \frac{h_1 - h_2}{d}$ where $h_2 = \text{PMW-1 } 17.83'$
& $h_1 = \text{PMW-2 } 18.23'$
 $d = 115'$

water elevation @ 1 - water elevation @ 2
(d = distance between the 2)

$i = \frac{18.23 - 17.83}{115} = \underline{\underline{0.003 \text{ foot/foot}}}$



top of casing - Δ to water = relative elevations.

	<u>DATE</u>	<u>TOP PVC</u>	Δ to WATER	Relative Elevation =
MW-13	7/6/98	23.617	1.5 ft of product \therefore no level	NA
MW-14	7/6/98	23.407	8.62	14.787
PMW-1	9/22	20.177	2.35	17.827
PMW-2	9/22	20.847	2.58	18.267
PMW-3	9/22	20.127	1.57	18.557
PMW-4	9/22	20.527	2.12	18.407
PMW-5	9/23	20.747	2.74	18.007
PMW-6D	9/23	20.467	7.68	12.787

CALCULATE Darcy's Law : Groundwater Seepage Velocity:
USING

$$V = \left(\frac{K}{n} \right) \times i$$

n = assumed

i = gradient

K = hydraulic conductivity

$$V = \left(\frac{0.958752 \text{ ft/day}}{0.25} \right) \times 0.003 \text{ feet/foot}$$

$$V = \underline{\underline{0.0115 \text{ ft/day}}}$$

3/3

10/27/22

CALCULATE Transmissivity =

$$T = K b_c = (\text{hydraulic conduct}) \times \text{aquifer thickness}$$

where
aquifer thickness = 70'

$$T = 0.958752 \text{ ft/day} \times 70' =$$

$$70 \frac{\text{ft}^2}{\text{day}}$$

Mass of contaminant:

- using the concentration for TPH mg/kg
 arithmetic mean

$y = 125' \therefore \text{radius} = 62.5'$
 $x = 85' \therefore \text{radius} = 42.5'$

$$A = \pi(62.5)(42.5) = 8344.85 \text{ ft}^2$$

$$\text{Depth} = 6'$$

$$V_{\text{soil}} = (8344)(6) = 50069 \text{ ft}^3$$

Area of an ellipse =
 $\pi \times A_r \times B_r$
 where $A_r = \text{radius of } x \text{ axis}$
 $B_r = \text{radius of } y \text{ axis}$

$$M_{\text{TPH}} = (50069) \times \frac{1 \text{ yd}^3}{27 \text{ ft}^3} \times \frac{1.4 \text{ ton}}{1 \text{ yd}^3} \times 1016 \frac{\text{kg}}{\text{ton}} \times 5530 \frac{\text{mg}}{\text{kg}} \text{ TPH} \times 1 \times 10^{-6} \frac{\text{kg}}{\text{mg}} \times 2.204623 \frac{\text{lb}}{\text{kg}}$$

$$= 32,158 \text{ lbs of TPH}$$

avg TPH concentration =

- 12
- 1747
- 38800
- 1998
- 837
- 411
- 2515
- 4852
- 12710
- 3409
- 1143
- 3678
- 4958
- 350

$$14 \overline{) 77420} =$$

3.2.3 Product Line Pump Station

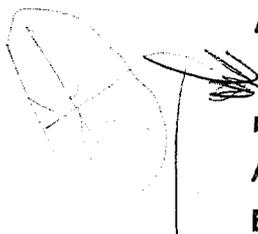
During the DPT investigation at the product line pump station, soils with an OVA response of greater than 50 ppm were encountered in soil boring PPS-SB-01 (2000 ppm). This data indicates that "excessively contaminated soil" is present in the vicinity of this soil boring. The "excessively contaminated soil" extends to a depth of approximately 13 feet in the immediate vicinity of boring PPS-SB-01. No other "excessively contaminated soil" was detected in the area of the pump station. Soil vapor screening results for the product line pump station are presented in Table 2-3. Soil vapor concentrations are depicted on Figure 3-3.

The results of the laboratory analysis confirm that petroleum related compounds are present in the vadose zone soil at the site. The highest concentrations of petroleum constituents were detected in the soil sample collected from PPS-SB-01. This sample had a TPH concentration of 2300 mg/kg and a naphthalene concentration of 2100 µg/kg. Concentrations above FDEP target levels were also reported for 1-methylnaphthalene and 2-methylnaphthalene. Laboratory analytical results for soil samples collected at the product line pump station are summarized on Table 3-1.

3.3 ESTIMATED MASS OF CONTAMINANTS IN SOIL

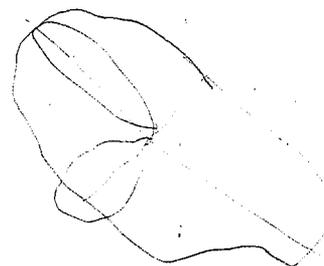
Net soil vapor readings in excess of 50 parts per million (ppm) were used to define "excessively contaminated soil" in accordance with Rule 62-770.200(2), FAC. For the oil/water separator and the product line dispensing facility the area of impacted soil was calculated by assuming a representative geometric shape (an ellipse), then calculating the area based on the equation:

where:



$$\text{Area} = \pi(rA)(rB)$$

- r = the radius of the axis
- A = the long axis of the ellipse
- B = the short axis of the ellipse



For the product line pump station the area of impacted soil was calculated by assuming the representative geometric shape is a circle and using the formula for the area of a circle.

The volume of the soil was calculated using the equation:

$$\text{Volume} = (\text{Area})(\text{Depth})$$

where:

Area = calculated area in square feet

Depth = average vertical extent of contaminated soil in feet

The mass of contaminants in vadose zone soil was calculated using the following equation:

$$\text{Mass} = \text{Volume ft}^3 \times \frac{1 \text{ yd}^3}{27 \text{ ft}^3} \times \frac{1.4 \text{ tons}}{1 \text{ yd}^3} \times 1016 \frac{\text{kg}}{\text{ton}} \times \frac{\text{mg}}{\text{kg}} \text{TRPH} \times (1.0 \times 10^{-6}) \frac{\text{kg}}{\text{mg}} \times 2.204623 \frac{\text{lb}}{\text{kg}}$$

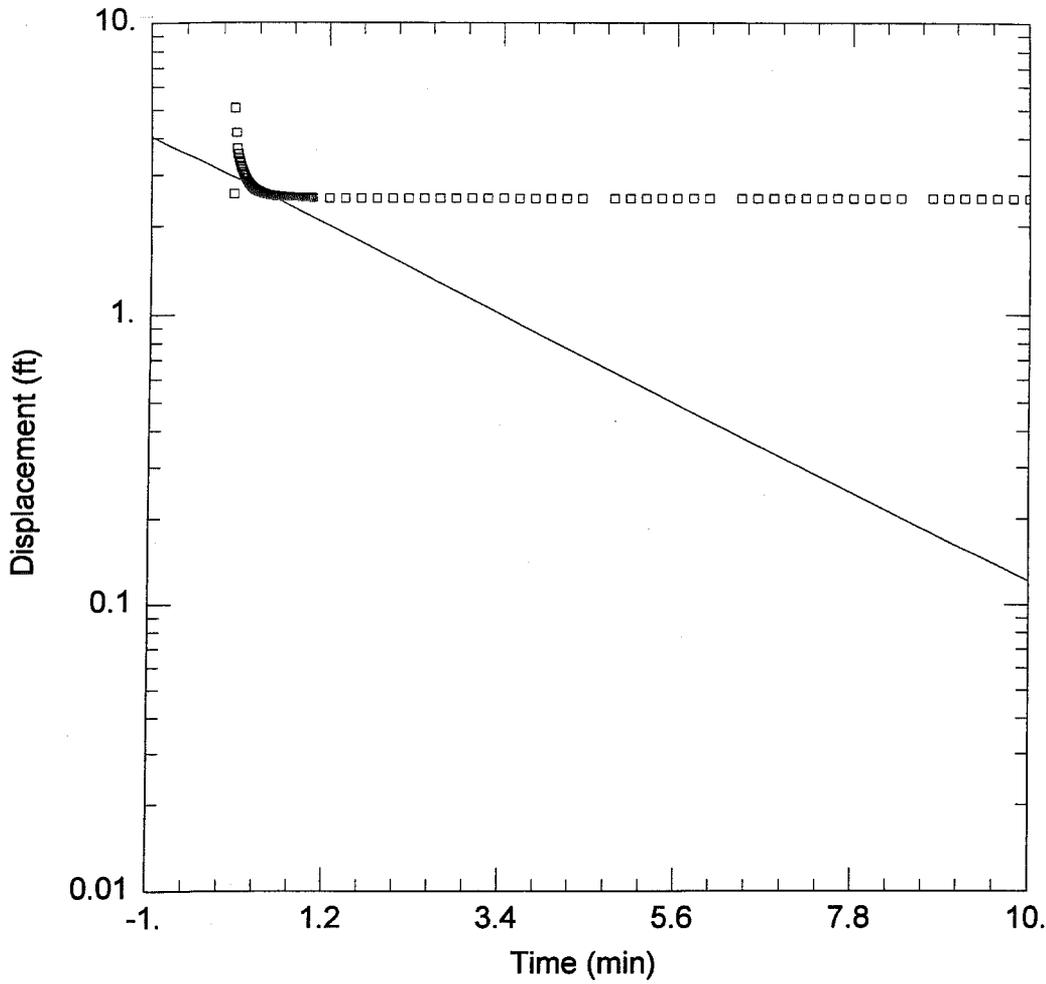
where:

TRPH = arithmetic mean of Total Recoverable Petroleum Hydrocarbon concentrations.

The estimated mass of contaminants for each site is:

Oil/Water Separator:	7,106 pounds
Product Line Dispensing Area:	9 pounds
Product Line Pump Station:	147 pounds

Soil volume and contaminant mass calculations for each site are provided in Appendix I. The estimated mass does not include contamination dissolved in soil pore water.



WELL TEST ANALYSIS

Data Set: A:\PMW-1.AQT
 Date: 10/19/98

Time: 14:07:53

PROJECT INFORMATION

Company: Tetra Tech NUS
 Client: Naval Air Station
 Project: N7849
 Test Location: Jacksonville
 Test Well: PMW-1
 Test Date: 10/13/98

AQUIFER DATA

Saturated Thickness: 70. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 2.58 ft
 Casing Radius: 0.083 ft
 Screen Length: 10. ft

Water Column Height: 10. ft
 Wellbore Radius: 0.333 ft
 Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined

$K = 0.001283 \text{ ft/min}$

Data Set: A:\PMW-1.AQT
Date: 10/19/98
Time: 14:08:16

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: Naval Air Station
Project: N7849
Location: Jacksonville
Test Date: 10/13/98
Test Well: PMW-1

AQUIFER DATA

Saturated Thickness: 70. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: PMW-1

X Location: 0. ft
Y Location: 0. ft

No. of observations: 121

Observation Data

<u>Time (min)</u>	<u>Displacement (ft)</u>	<u>Time (min)</u>	<u>Displacement (ft)</u>	<u>Time (min)</u>	<u>Displacement (ft)</u>
0.0083	5.072	0.3833	2.581	1.8	2.493
0.025	4.17	0.4	2.575	2.	2.496
0.0333	3.683	0.4166	2.569	2.2	2.493
0.0416	3.525	0.4333	2.562	2.4	2.493
0.05	3.531	0.45	2.559	2.6	2.493
0.0583	3.398	0.4666	2.553	2.8	2.493
0.0666	3.335	0.4833	2.55	3.	2.493
0.075	3.275	0.5	2.546	3.2	2.493
0.0833	3.208	0.5166	2.543	3.4	2.493
0.0916	3.157	0.5333	2.537	3.6	2.49
0.1	3.11	0.55	2.537	3.8	2.49
0.1083	3.066	0.5666	2.534	4.	2.49
0.1166	3.021	0.5833	2.534	4.2	2.49
0.125	2.987	0.6	2.531	4.4	2.49
0.1333	2.955	0.6166	2.527	4.8	2.49
0.1416	2.923	0.6333	2.527	5.	2.49
0.15	2.895	0.65	2.524	5.2	2.49
0.1583	2.869	0.6666	2.524	5.4	2.49

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1666	2.844	0.6833	2.521	5.6	2.49
0.175	2.822	0.7	2.518	5.8	2.49
0.1833	2.803	0.7166	2.518	6.	2.49
0.1916	2.784	0.7333	2.518	6.4	2.49
0.2	2.765	0.75	2.518	6.6	2.49
0.2083	2.749	0.7666	2.515	6.8	2.49
0.2166	2.736	0.7833	2.515	7.	2.49
0.225	2.721	0.8	2.515	7.2	2.49
0.2333	2.708	0.8166	2.512	7.4	2.49
0.2416	2.695	0.8333	2.512	7.6	2.49
0.25	2.686	0.85	2.512	7.8	2.49
0.2583	2.676	0.8666	2.512	8.	2.49
0.2666	2.667	0.8833	2.512	8.2	2.49
0.275	2.657	0.9	2.508	8.4	2.49
0.2833	2.648	0.9166	2.508	8.8	2.49
0.2916	2.641	0.9333	2.508	9.	2.49
0.3	2.635	0.95	2.508	9.2	2.49
0.3083	2.629	0.9666	2.508	9.4	2.49
0.3166	2.619	0.9833	2.505	9.6	2.49
0.325	2.616	1.	2.505	9.8	2.49
0.3333	2.61	1.2	2.499	10.	2.49
0.35	2.6	1.4	2.499		
0.3666	2.588	1.6	2.496		

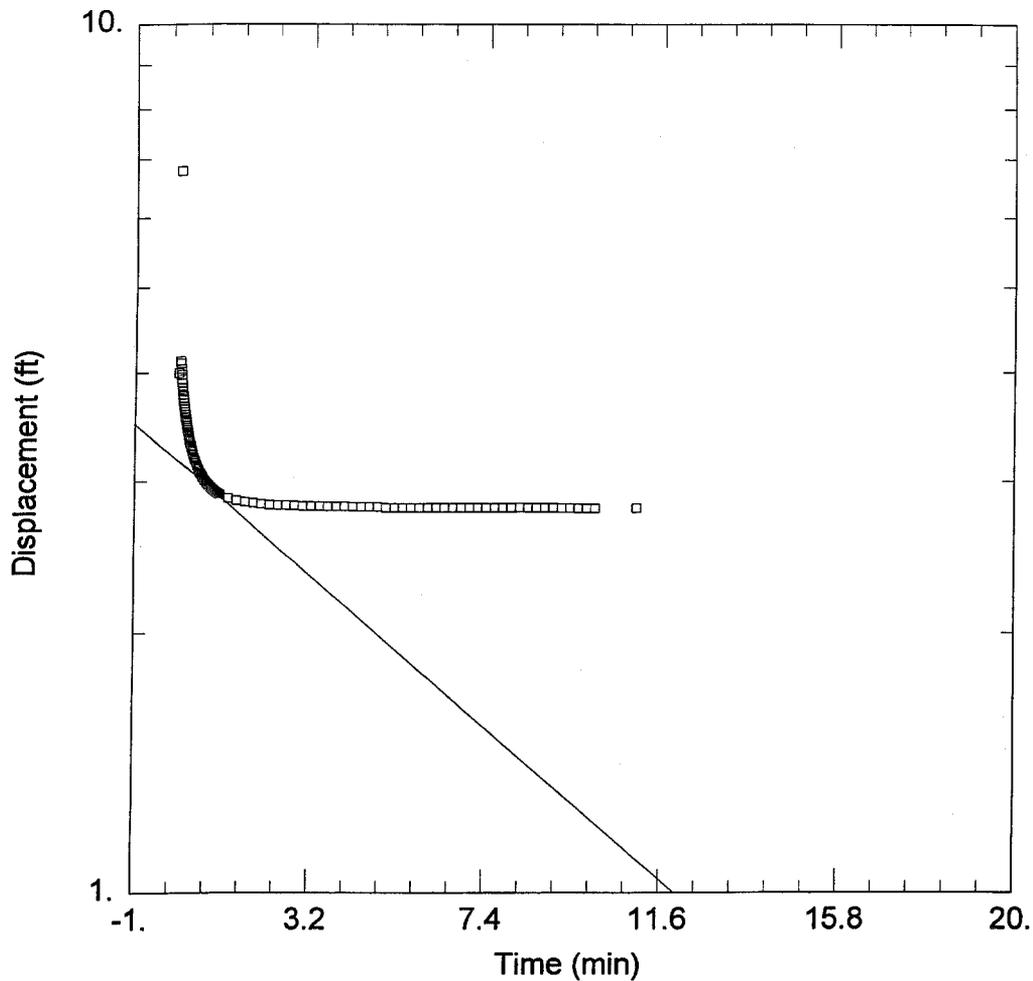
SOLUTION

Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.001283	ft/min
y0	2.944	ft



WELL TEST ANALYSIS

Data Set: A:\PMW-2.AQT
 Date: 10/19/98

Time: 14:12:06

PROJECT INFORMATION

Company: Tetra Tech NUS
 Client: Naval Air Station
 Project: N7849
 Test Location: Jacksonville
 Test Well: PMW-2
 Test Date: 10/13/98

AQUIFER DATA

Saturated Thickness: 70. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Initial Displacement: 3.995 ft
 Casing Radius: 0.083 ft
 Screen Length: 10. ft

Water Column Height: 10. ft
 Wellbore Radius: 0.333 ft
 Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: I Unconfined

$K = 0.0003873$ ft/min

Data Set: A:\PMW-2.AQT
 Date: 10/19/98
 Time: 14:13:31

PROJECT INFORMATION

Company: Tetra Tech NUS
 Client: Naval Air Station
 Project: N7849
 Location: Jacksonville
 Test Date: 10/13/98
 Test Well: PMW-2

AQUIFER DATA

Saturated Thickness: 70. ft
 Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: PMW-2

X Location: 0. ft
 Y Location: 0. ft

No. of observations: 124

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0166	6.785	0.4166	3.15	2.4	2.815
0.0333	4.125	0.4333	3.135	2.6	2.815
0.0416	4.1	0.45	3.122	2.8	2.812
0.05	4.037	0.4666	3.106	3.	2.808
0.0583	3.98	0.4833	3.093	3.2	2.808
0.0666	3.929	0.5	3.081	3.4	2.808
0.075	3.888	0.5166	3.068	3.6	2.805
0.0833	3.847	0.5333	3.059	3.8	2.805
0.0916	3.812	0.55	3.049	4.	2.805
0.1	3.777	0.5666	3.04	4.2	2.802
0.1083	3.745	0.5833	3.03	4.4	2.802
0.1166	3.717	0.6	3.021	4.6	2.802
0.125	3.688	0.6166	3.011	4.8	2.802
0.1333	3.657	0.6333	3.005	5.	2.796
0.1416	3.632	0.65	2.995	5.2	2.796
0.15	3.609	0.6666	2.989	5.4	2.796
0.1583	3.584	0.6833	2.983	5.6	2.796
0.1666	3.559	0.7	2.976	5.8	2.796

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.175	3.537	0.7166	2.97	6.	2.796
0.1833	3.518	0.7333	2.964	6.2	2.796
0.1916	3.495	0.75	2.957	6.4	2.796
0.2	3.476	0.7666	2.951	6.6	2.796
0.2083	3.457	0.7833	2.945	6.8	2.796
0.2166	3.438	0.8	2.941	7.	2.796
0.225	3.423	0.8166	2.938	7.2	2.796
0.2333	3.407	0.8333	2.932	7.4	2.796
0.2416	3.391	0.85	2.929	7.6	2.796
0.25	3.375	0.8666	2.922	7.8	2.796
0.2583	3.356	0.8833	2.916	8.	2.796
0.2666	3.343	0.9	2.913	8.2	2.799
0.275	3.331	0.9166	2.91	8.4	2.796
0.2833	3.315	0.9333	2.907	8.6	2.796
0.2916	3.302	0.95	2.903	8.8	2.796
0.3	3.29	0.9666	2.9	9.	2.796
0.3083	3.277	0.9833	2.897	9.2	2.793
0.3166	3.264	1.	2.894	9.4	2.793
0.325	3.255	1.2	2.869	9.6	2.79
0.3333	3.242	1.4	2.85	9.8	2.79
0.35	3.223	1.6	2.84	10.	2.79
0.3666	3.201	1.8	2.831	11.	2.793
0.3833	3.182	2.	2.824		
0.4	3.166	2.2	2.818		

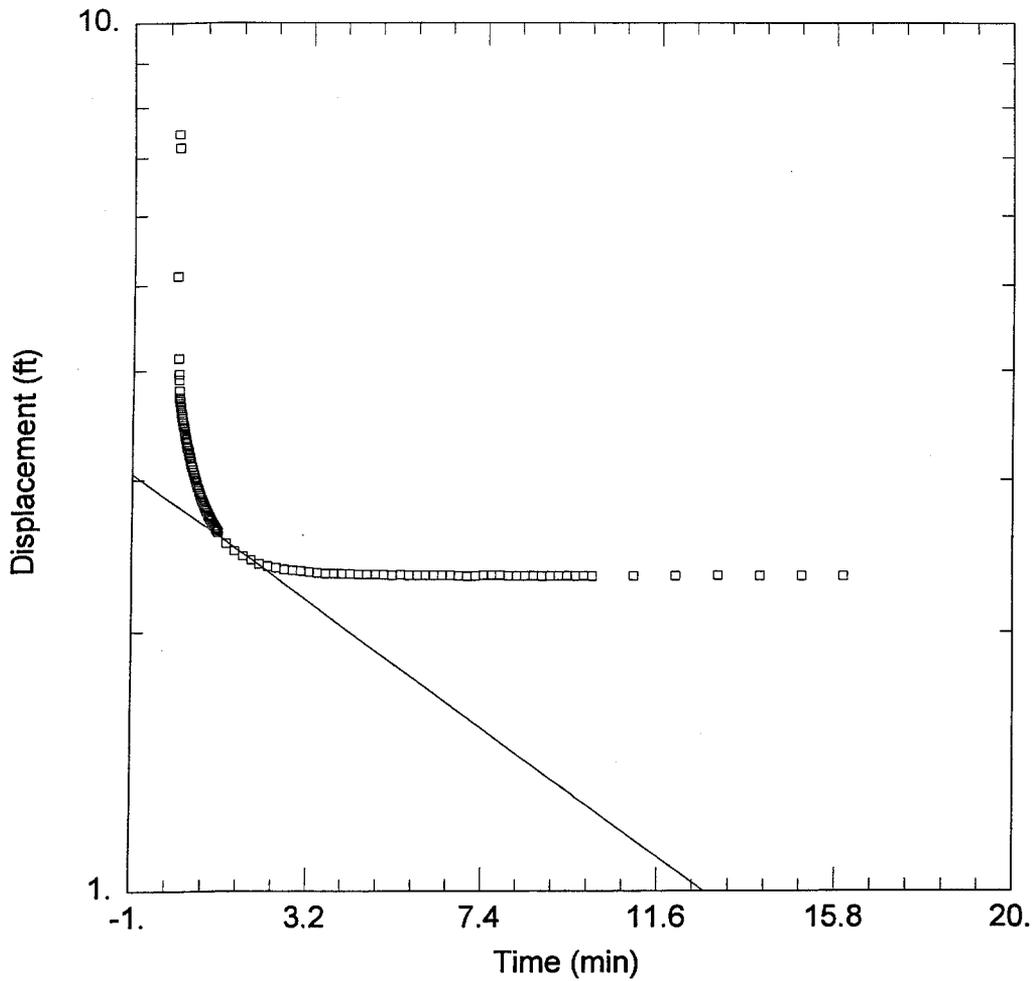
SOLUTION

Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003873	ft/min
y0	3.171	ft



WELL TEST ANALYSIS

Data Set:

Date: 10/19/98

Time: 14:16:20

PROJECT INFORMATION

Company: Tetra Tech NUS

Client: Naval Air Station

Project: N7849

Test Location: Jacksonville

Test Well: PMW-4

Test Date: 10/13/98

AQUIFER DATA

Saturated Thickness: 70. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 5.127 ft

Water Column Height: 10. ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.333 ft

Screen Length: 10. ft

Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined

K = 0.000327 ft/min

Data Set:

Date: 10/19/98

Time: 14:16:31

PROJECT INFORMATION

Company: Tetra Tech NUS

Client: Naval Air Station

Project: N7849

Location: Jacksonville

Test Date: 10/13/98

Test Well: PMW-4

AQUIFER DATA

Saturated Thickness: 70. ft

Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: PMW-4

Location: 0. ft

Y Location: 0. ft

No. of observations: 129

Observation Data

<u>Time (min)</u>	<u>Displacement (ft)</u>	<u>Time (min)</u>	<u>Displacement (ft)</u>	<u>Time (min)</u>	<u>Displacement (ft)</u>
0.025	7.457	0.4333	3.042	2.8	2.355
0.0333	7.191	0.45	3.02	3.	2.352
0.0416	4.132	0.4666	3.001	3.2	2.346
0.05	3.967	0.4833	2.982	3.4	2.339
0.0583	3.907	0.5	2.963	3.6	2.336
0.0666	3.793	0.5166	2.944	3.8	2.336
0.075	3.726	0.5333	2.928	4.	2.333
0.0833	3.695	0.55	2.913	4.2	2.333
0.0916	3.673	0.5666	2.894	4.4	2.33
0.1	3.65	0.5833	2.881	4.6	2.33
0.1083	3.631	0.6	2.865	4.8	2.33
0.1166	3.609	0.6166	2.849	5.	2.327
0.125	3.587	0.6333	2.837	5.2	2.324
0.1333	3.568	0.65	2.821	5.4	2.327
0.1416	3.546	0.6666	2.808	5.6	2.324
0.15	3.527	0.6833	2.795	5.8	2.324
0.1583	3.508	0.7	2.783	6.	2.324
0.1666	3.489	0.7166	2.77	6.2	2.324

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.175	3.47	0.7333	2.761	6.4	2.324
0.1833	3.451	0.75	2.748	6.6	2.324
0.1916	3.435	0.7666	2.735	6.8	2.32
0.2	3.416	0.7833	2.726	7.	2.317
0.2083	3.4	0.8	2.716	7.2	2.32
0.2166	3.384	0.8166	2.707	7.4	2.324
0.225	3.365	0.8333	2.694	7.6	2.324
0.2333	3.35	0.85	2.688	7.8	2.324
0.2416	3.334	0.8666	2.678	8.	2.32
0.25	3.318	0.8833	2.669	8.2	2.32
0.2583	3.305	0.9	2.659	8.4	2.32
0.2666	3.289	0.9166	2.653	8.6	2.32
0.275	3.274	0.9333	2.643	8.8	2.317
0.2833	3.261	0.95	2.634	9.	2.32
0.2916	3.248	0.9666	2.628	9.2	2.32
0.3	3.232	0.9833	2.618	9.4	2.32
0.3083	3.22	1.	2.612	9.6	2.317
0.3166	3.207	1.2	2.536	9.8	2.32
0.325	3.191	1.4	2.485	10.	2.317
0.3333	3.182	1.6	2.45	11.	2.32
0.35	3.153	1.8	2.422	12.	2.32
0.3666	3.131	2.	2.396	13.	2.324
0.3833	3.106	2.2	2.381	14.	2.32
0.4	3.084	2.4	2.371	15.	2.32
0.4166	3.061	2.6	2.362	16.	2.32

SOLUTION

Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.000327	ft/min
y0	2.811	ft

APPENDIX J
GROUNDWATER LABORATORY ANALYTICAL RESULTS

Technical Report for

Tetra-Tech, NUS

FFTF

7849

Accutest Job Number: F3425

Report to:

Tetra-Tech, NUS
7018 A.C. Skinner Parkway
Suite 250
Jacksonville, FL 32256

ATTN: Stacey Stanley

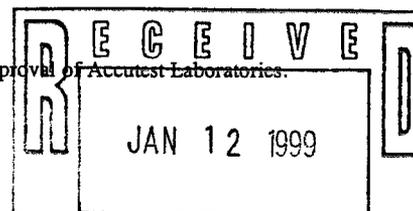
Total number of pages in report: 17



Harry Behzadi, Ph.D.
Laboratory Director

Results relate only to the items tested.

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.





Sample Summary

Tetra-Tech, NUS

Date: 01/05/99

Job No: F3425

FFTF

Project No: 7849

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F3425-1	12/23/98	11:10 SS	12/24/98	AQ	Ground Water	7849/MW-14/122398
F3425-2	12/23/98	10:55 SS	12/24/98	AQ	Ground Water	7849/MW-1/122398
F3425-3	12/23/98	00:00 SS	12/24/98	AQ	Ground Water	TRIP BLANK



Report of Analysis

Client Sample ID: 7849/MW-14/122398
Lab Sample ID: F3425-1
Matrix: AQ - Ground Water
Method: EPA 504.1
Project: FFTF

Date Sampled: 12/23/98
Date Received: 12/24/98
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN02268.D	1	01/04/99	SKW	n/a	n/a	GMN100
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849/MW-14/122398 Lab Sample ID: F3425-1 Matrix: AQ - Ground Water Method: SW846 8021B Project: FFTF	Date Sampled: 12/23/98 Date Received: 12/24/98 Percent Solids: n/a
---	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF008029.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	28.4	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	25.3	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.98	1.0	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	22.0	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Page 2 of 2

Client Sample ID: 7849/MW-14/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-1	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF008029.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	106%		75-125%
75-29-6	2-Chloropropane	108%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	108%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	97%		75-125%
462-06-6	Fluorobenzene	110%		75-125%
98-08-8	aaa-Trifluorotoluene	117%		75-125%

(a) Confirmed by reanalysis on dissimilar column.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



ACCUTEST

Report of Analysis

Client Sample ID: 7849/MW-14/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-1	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P02830.D	10	12/29/98	NF	12/28/98	OP630	GOP135
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	20.8	5.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849/MW-14/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-1	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	0.0049	0.0030	mg/l	1	12/28/98	12/29/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: 7849/MW-14/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-1	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	12/30/98	AMA	12/30/98	M:OP934	M:GC809
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	7.84	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	30.3	1.0	ug/l	
91-57-6	2-Methylnaphthalene	33.6	1.0	ug/l	
91-20-3	Naphthalene	52.2	1.0	ug/l	
85-01-8	Phenanthrene	2.86	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	300% ^a		20-160%

(a) Outside control limits due to matrix interference.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849/MW-1/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-2	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN02269.D	1	01/04/99	SKW	n/a	n/a	GMN100
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID:	7849/MW-1/122398	Date Sampled:	12/23/98
Lab Sample ID:	F3425-2	Date Received:	12/24/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF008030.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	9.6	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	28.2	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	14.2	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	20.9	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	53.2	3.0	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID:	7849/MW-1/122398	Date Sampled:	12/23/98
Lab Sample ID:	F3425-2	Date Received:	12/24/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF008030.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	108%		75-125%
75-29-6	2-Chloropropane	109%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	108%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	95%		75-125%
462-06-6	Fluorobenzene	110%		75-125%
98-08-8	aaa-Trifluorotoluene	114%		75-125%

(a) Confirmed by reanalysis on dissimilar column.

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849/MW-1/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-2	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P02831.D	10	12/29/98	NF	12/28/98	OP630	GOP135
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	20.4	5.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: 7849/MW-1/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-2	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	0.0030	0.0030	mg/l	1	12/28/98	12/29/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: 7849/MW-1/122398	Date Sampled: 12/23/98
Lab Sample ID: F3425-2	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	12/30/98	AMA	12/30/98	M:OP934	M:GC809
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	4.08	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	21.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	25.9	1.0	ug/l	
91-20-3	Naphthalene	46.5	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	172% ^a		20-160%

(a) Outside control limits due to matrix interference.

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: TRIP BLANK Lab Sample ID: F3425-3 Matrix: AQ - Ground Water Method: SW846 8021B Project: FFTF	Date Sampled: 12/23/98 Date Received: 12/24/98 Percent Solids: n/a
--	---

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF008028.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: TRIP BLANK	Date Sampled: 12/23/98
Lab Sample ID: F3425-3	Date Received: 12/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF008028.D	1	12/28/98	JG	n/a	n/a	GEF194
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	108%		75-125%
75-29-6	2-Chloropropane	105%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	103%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	91%		75-125%
462-06-6	Fluorobenzene	108%		75-125%
98-08-8	aaa-Trifluorotoluene	108%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #:

ACCUTEST QUOTE #:

CLIENT INFORMATION			FACILITY INFORMATION						ANALYTICAL INFORMATION						MATRIX CODES			
NAME: ZTNU5 ADDRESS: 7018 A.C. Skinner Pkwy Ste 250 Jax FL 32256 CITY, STATE ZIP SEND REPORT TO: Stacey Stanley PHONE #: 904 281-0400			PROJECT NAME: FETF WWS JAX LOCATION: Jacksonville, FL PROJECT NO.: 7849 FAX #: 904-281-0070						FLPRD 83/0 8021B 504.1 Lead						DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OI - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID			
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION			MATRIX	# OF BOTTLES	PRESERVATION											LAB USE ONLY
		DATE	TIME	SAMPLED BY:			HCl	NaOH	HNO3	H2SO4	NONE							
FS425-1	7849/MW-14/122398	12/23/98	1110	SS, JM	W	8	✓	✓	✓			1	1	2	3	1		
-2	7849/MW-1/122398	12/23/98	1055	SS, JM	W	10	✓	✓	✓			2	2	2	3	1		
-3	Trip Blank					2								X				
DATA TURNAROUND INFORMATION <input type="checkbox"/> STANDARD <input type="checkbox"/> 48 HOUR RUSH <input type="checkbox"/> 24 HOUR EMERGENCY <input checked="" type="checkbox"/> OTHER 1 WEEK APPROVED BY: _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED			DATA DELIVERABLE INFORMATION <input type="checkbox"/> STANDARD <input type="checkbox"/> COMMERCIAL "B" <input type="checkbox"/> DISK DELIVERABLE <input type="checkbox"/> STATE FORMS <input type="checkbox"/> OTHER (SPECIFY) _____						COMMENTS/REMARKS KRHOSTS									
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																		
RELINQUISHED BY: APP/Wilson		DATE TIME: 9/14/98 1524		RECEIVED BY: MS		RELINQUISHED BY: 2.		DATE TIME:		RECEIVED BY: 2.								
RELINQUISHED BY: 3. MS Stanley		DATE TIME: 12/23/98		RECEIVED BY: APP/Wilson		RELINQUISHED BY: 4.		DATE TIME:		RECEIVED BY: 4.								
RELINQUISHED BY: 5.		DATE TIME:		RECEIVED BY: 5.		SEAL #		PRESERVE WHERE APPLICABLE <input type="checkbox"/>		ON ICE <input type="checkbox"/>		TEMPERATURE _____		C				

Technical Report for**Tetra-Tech,NUS****FFTF****7849****Accutest Job Number: F2965****Report to:**

**Tetra-Tech,NUS
7018 A.C. Skinner Parkway
Suite 250
Jacksonville, FL 32256**

ATTN: Stacey Stanley

Total number of pages in report: 65
**Harry Behzadi, Ph.D.
Laboratory Director****Results relate only to the items tested.****This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.**



Sample Summary

Tetra-Tech, NUS

Date: 10/15/98

Job No: F2965

FFTF

Project No: 7849

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
F2965-1	09/22/98	13:00 SS	09/24/98	AQ	Field Blank Water	EQBK/FFTF7849/092298
F2965-2	09/22/98	15:45 SS	09/24/98	AQ	Field Blank Water	FDBK/FFTF7849/092298
F2965-3	09/22/98	13:18 SS	09/24/98	AQ	Ground Water	PMW-4/FFTF7849/092298
F2965-4	09/22/98	16:30 SS	09/24/98	AQ	Ground Water	PMW-3/FFTF7849/092298
F2965-5	09/22/98	18:00 SS	09/24/98	AQ	Ground Water	PMW-2/FFTF7849/092298
F2965-6	09/22/98	19:20 SS	09/24/98	AQ	Ground Water	PMW-1/FFTF7849/092298
F2965-7	09/23/98	10:05 SS	09/24/98	AQ	Ground Water	PMW-5/FFTF7849/092398
F2965-8	09/23/98	11:50 SS	09/24/98	AQ	Ground Water	PMW-6D/FFTF7849/092398
F2965-9	09/23/98	00:00 SS	09/24/98	AQ	Ground Water	DUP-01/FFTF7849/092398
F2965-10	09/22/98	00:00 SS	09/24/98	AQ	Trip Blank Water	TRIP BLANK



Report of Analysis

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01992.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	0.50	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	99%		40-140%	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75.6%		20-160%

ND = Not detected
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 E = Indicates value exceeds calibration range

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01494.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007234.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007234.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	97%		75-125%
75-29-6	2-Chloropropane	99%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	105%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	93%		75-125%
462-06-6	Fluorobenzene	108%		75-125%
98-08-8	aaa-Trifluorotoluene	103%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID: EQBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-1	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/06/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: FDBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-2	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01993.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	103%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



ACCUTEST.

Report of Analysis

Client Sample ID:	PMW-4/FFTF7849/092298	Date Sampled:	09/22/98
Lab Sample ID:	F2965-3	Date Received:	09/24/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 504.1		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01496.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FDBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-2	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01495.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FDBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-2	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007235.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FDBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-2	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007235.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	97%		75-125%
75-29-6	2-Chloropropane	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	95%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	85%		75-125%
462-06-6	Fluorobenzene	101%		75-125%
98-08-8	aaa-Trifluorotoluene	98%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FDBK/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-2	Date Received: 09/24/98
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/06/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-3	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01994.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	0.50	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	88%		40-140%	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298 Lab Sample ID: F2965-3 Matrix: AQ - Ground Water Method: SW846 8310 Project: FFTF	Date Sampled: 09/22/98 Date Received: 09/24/98 Percent Solids: n/a
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	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97.3%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-3	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: DAI	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV3406.D	1	09/28/98	ANJ	n/a	n/a	N:GUV138
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
74-82-8	Methane	ND	50	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



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Report of Analysis

Client Sample ID:	PMW-4/FFTF7849/092298	Date Sampled:	09/22/98
Lab Sample ID:	F2965-3	Date Received:	09/24/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 504.1		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01496.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298
Lab Sample ID: F2965-3
Matrix: AQ - Ground Water
Method: SW846 8021B
Project: FFTF

Date Sampled: 09/22/98
Date Received: 09/24/98
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007236.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-3	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007236.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	94%		75-125%
75-29-6	2-Chloropropane	90%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	96%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	85%		75-125%
462-06-6	Fluorobenzene	100%		75-125%
98-08-8	aaa-Trifluorotoluene	98%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID: PMW-4/FFTF7849/092298

Lab Sample ID: F2965-3

Matrix: AQ - Ground Water

Project: FFTF

Date Sampled: 09/22/98

Date Received: 09/24/98

Percent Solids: n/a

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate ^a	<0.10	0.10	mg/l	1	09/29/98 JK	SM18 4500NO3E/NO2B
Nitrogen, Nitrate + Nitrite	<0.10	0.10	mg/l	1	09/29/98 JK	SM18 4500NO3E
Nitrogen, Nitrite	0.028	0.010	mg/l	1	09/24/98 EP	SM18 4500NO2B
Sulfate	<10	10	mg/l	1	09/25/98 JK	EPA 375.4

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-4/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-3	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



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Report of Analysis

Client Sample ID:	PMW-3/FFTF7849/092298	Date Sampled:	09/22/98
Lab Sample ID:	F2965-4	Date Received:	09/24/98
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO		
Project:	FFTF		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01996.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	0.50	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	80%		40-140%	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.1	ug/l	
208-96-8	Acenaphthylene	ND	1.1	ug/l	
120-12-7	Anthracene	ND	1.1	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.16	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.16	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.16	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.16	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.16	ug/l	
218-01-9	Chrysene	ND	0.16	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.16	ug/l	
206-44-0	Fluoranthene	ND	1.1	ug/l	
86-73-7	Fluorene	ND	1.1	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.16	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.1	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.1	ug/l	
91-20-3	Naphthalene	ND	1.1	ug/l	
85-01-8	Phenanthrene	ND	1.1	ug/l	
129-00-0	Pyrene	ND	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	73.5%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: DAI	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV3407.D	1	09/28/98	ANJ	n/a	n/a	N:GUV138
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
74-82-8	Methane	89.6	50	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01497.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007260.D	1	09/29/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007260.D	1	09/29/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	95%		75-125%
75-29-6	2-Chloropropane	101%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	104%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	92%		75-125%
462-06-6	Fluorobenzene	111%		75-125%
98-08-8	aaa-Trifluorotoluene	105%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-4	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate ^a	0.48	0.11	mg/l	1	09/29/98 JK	SM18 4500NO3E/NO2B
Nitrogen, Nitrate + Nitrite	0.48	0.10	mg/l	1	09/29/98 JK	SM18 4500NO3E
Nitrogen, Nitrite	<0.010	0.010	mg/l	1	09/24/98 EP	SM18 4500NO2B
Sulfate	<10	10	mg/l	1	09/25/98 JK	EPA 375.4

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-3/FFTF7849/092298

Lab Sample ID: F2965-4

Matrix: AQ - Ground Water

Project: FFTF

Date Sampled: 09/22/98

Date Received: 09/24/98

Percent Solids: n/a

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01997.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	ND	0.50	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	100%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	105.5%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: DAI	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV3408.D	1	09/28/98	ANJ	n/a	n/a	N:GUV138
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
74-82-8	Methane	ND	50	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01498.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007238.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007238.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	99%		75-125 %
75-29-6	2-Chloropropane	93%		75-125 %
625-98-9	1-Chloro-3-fluorobenzene	98%		75-125 %
625-98-9	1-Chloro-3-fluorobenzene	87%		75-125 %
462-06-6	Fluorobenzene	103%		75-125 %
98-08-8	aaa-Trifluorotoluene	100%		75-125 %

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Page 1 of 1

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

General Chemistry

Analyte	Result	RDL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate ^a	0.20	0.11	mg/l	1	09/29/98 JK	SM18 4500NO3E/NO2B
Nitrogen, Nitrate + Nitrite	0.23	0.10	mg/l	1	09/29/98 JK	SM18 4500NO3E
Nitrogen, Nitrite	0.029	0.010	mg/l	1	09/24/98 EP	SM18 4500NO2B
Sulfate	22.2	10	mg/l	1	09/25/98 JK	EPA 375.4

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-2/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-5	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01998.D	10	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	16.4	5.0	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.15	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.15	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.15	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.15	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.15	ug/l	
218-01-9	Chrysene	ND	0.15	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.15	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.15	ug/l	
90-12-0	1-Methylnaphthalene	12.4	1.0	ug/l	
91-57-6	2-Methylnaphthalene	13.3	1.0	ug/l	
91-20-3	Naphthalene	33.5	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	133%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01499.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	EF007261.D	1	09/29/98	JG	n/a	n/a	GEF175

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	4.1	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	13.6	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	9.2	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	12.3	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	55.8	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	EF007261.D	1	09/29/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	95%		75-125%
75-29-6	2-Chloropropane	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	106%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	94%		75-125%
462-06-6	Fluorobenzene	107%		75-125%
98-08-8	aaa-Trifluorotoluene	112%		75-125%

(a) Confirmed by GC/MS

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-1/FFTF7849/092298	Date Sampled: 09/22/98
Lab Sample ID: F2965-6	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	0.0032	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P01999.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	0.477	0.50	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	96%		40-140%	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.1	ug/l	
208-96-8	Acenaphthylene	ND	1.1	ug/l	
120-12-7	Anthracene	ND	1.1	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.16	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.16	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.16	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.16	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.16	ug/l	
218-01-9	Chrysene	ND	0.16	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.16	ug/l	
206-44-0	Fluoranthene	ND	1.1	ug/l	
86-73-7	Fluorene	ND	1.1	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.16	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.1	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.1	ug/l	
91-20-3	Naphthalene	ND	1.1	ug/l	
85-01-8	Phenanthrene	ND	1.1	ug/l	
129-00-0	Pyrene	ND	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92.1%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01500.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007240.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007240.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	96%		75-125%
75-29-6	2-Chloropropane	94%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	94%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	84%		75-125%
462-06-6	Fluorobenzene	103%		75-125%
98-08-8	aaa-Trifluorotoluene	99%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



ACCUTEST.

Report of Analysis

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Client Sample ID: PMW-5/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-7	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: PMW-6D/FFTF7849/092398	
Lab Sample ID: F2965-8	Date Sampled: 09/23/98
Matrix: AQ - Ground Water	Date Received: 09/24/98
Method: FLORIDA-PRO	Percent Solids: n/a
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P02000.D	5	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	5.80	2.5	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	90%		40-140%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-6D/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-8	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01501.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-6D/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-8	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007241.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

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Client Sample ID: PMW-6D/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-8	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007241.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	96%		75-125%
75-29-6	2-Chloropropane	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	102%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	90%		75-125%
462-06-6	Fluorobenzene	105%		75-125%
98-08-8	aaa-Trifluorotoluene	114%		75-125%

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: PMW-6D/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-8	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	0.0037	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: DUP-01/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-9	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: FLORIDA-PRO	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P02001.D	1	10/01/98	NF	09/25/98	OP526	GOP93
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
	TPH (C8-C40)	0.505	0.50	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	96%		40-140%	

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: DUP-01/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-9	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8310	
Project: FFTF	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1		1	10/11/98	AMA	09/29/98	M:OP821	M:GC682
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
83-32-9	Acenaphthene	ND	1.0	ug/l	
208-96-8	Acenaphthylene	ND	1.0	ug/l	
120-12-7	Anthracene	ND	1.0	ug/l	
56-55-3	Benzo (a) anthracene	ND	0.16	ug/l	
50-32-8	Benzo (a) pyrene	ND	0.16	ug/l	
205-99-2	Benzo (b) fluoranthene	ND	0.16	ug/l	
191-24-2	Benzo (g,h,i) perylene	ND	0.16	ug/l	
207-08-9	Benzo (k) fluoranthene	ND	0.16	ug/l	
218-01-9	Chrysene	ND	0.16	ug/l	
53-70-3	Dibenz(a,h)anthracene	ND	0.16	ug/l	
206-44-0	Fluoranthene	ND	1.0	ug/l	
86-73-7	Fluorene	ND	1.0	ug/l	
193-39-5	Indeno (1,2,3-cd) pyrene	ND	0.16	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	1.0	ug/l	
85-01-8	Phenanthrene	ND	1.0	ug/l	
129-00-0	Pyrene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84.7%		20-160%

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: DUP-01/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-9	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: EPA 504.1	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	MN01504.D	1	09/30/98	SKW	n/a	n/a	GMN70
Run #2							

CAS No.	Compound	Result	RDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: DUP-01/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-9	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007242.D	1	09/28/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	97%		75-125%
75-29-6	2-Chloropropane	93%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	97%		75-125%
625-98-9	1-Chloro-3-fluorobenzene	86%		75-125%
462-06-6	Fluorobenzene	102%		75-125%
98-08-8	aaa-Trifluorotoluene	99%		75-125%

ND = Not detected
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N = Indicates presumptive evidence of a compound



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Report of Analysis

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Client Sample ID: DUP-01/FFTF7849/092398	Date Sampled: 09/23/98
Lab Sample ID: F2965-9	Date Received: 09/24/98
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: FFTF	

Metals Analysis

Analyte	Result	RDL	Units	DF	Prep	Analyzed By	Method
Lead	<0.0030	0.0030	mg/l	1	09/29/98	10/08/98 JK	EPA 200.7

RDL = Reported Detection Limit



Report of Analysis

Client Sample ID: TRIP BLANK	Date Sampled: 09/22/98
Lab Sample ID: F2965-10	Date Received: 09/24/98
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8021B	
Project: FFTF	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007253.D	1	09/29/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RDL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected
 RDL = Reported Detection Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

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Client Sample ID: TRIP BLANK		
Lab Sample ID: F2965-10		Date Sampled: 09/22/98
Matrix: AQ - Trip Blank Water		Date Received: 09/24/98
Method: SW846 8021B		Percent Solids: n/a
Project: FFTF		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EF007253.D	1	09/29/98	JG	n/a	n/a	GEF175
Run #2							

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
74-97-5	Bromochloromethane	100%		75-125 %
75-29-6	2-Chloropropane	91%		75-125 %
625-98-9	1-Chloro-3-fluorobenzene	100%		75-125 %
625-98-9	1-Chloro-3-fluorobenzene	87%		75-125 %
462-06-6	Fluorobenzene	105%		75-125 %
98-08-8	aaa-Trifluorotoluene	102%		75-125 %

ND = Not detected
RDL = Reported Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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- B ENVIRONMENTAL DATA RESOURCE GEOCHECK REPORT
- C SOIL BORING LOGS
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- E DISPOSAL MANIFEST AND PREBURN ANALYTICAL DATA
- F WELL COMPLETION LOGS
- G MOBILE LABORATORY ANALYTICAL RESULTS
- H CONFIRMATORY ANALYTICAL SOIL DATA
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