

N60201.AR.000888
NS MAYPORT
5090.3a

SITE ASSESSMENT REPORT FOR SITE 351-1 NS MAYPORT FL
9/1/2007
TETRA TECH NUS

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62467-94-D-0888



Rev. 1
09/05/07

Site Assessment Report for Site 351-1

Naval Station Mayport
Mayport, Florida

Contract Task Order 0386

September 2007



Southeast

2155 Eagle Drive

North Charleston, South Carolina 29406

**SITE ASSESSMENT REPORT
FOR
SITE 351-1**

**NAVAL STATION MAYPORT
MAYPORT, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

**Submitted to:
Naval Facilities Engineering Command
Southeast
2155 Eagle Drive
North Charleston, South Carolina 29406**

**Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220**

**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0386**

SEPTEMBER 2007

PREPARED UNDER THE SUPERVISION OF:



**MARK A. PETERSON, P.G.
TASK ORDER MANAGER
TETRA TECH NUS, INC.
JACKSONVILLE, FLORIDA**

APPROVED FOR SUBMITTAL BY:

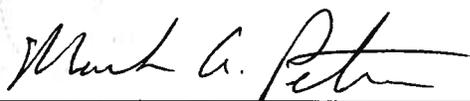


**DEBRA M. HUMBERT
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA**

PROFESSIONAL CERTIFICATION

Site Assessment Report
for
Site 351-1
Naval Station Mayport, Florida

This Site Assessment Report was prepared under the direct supervision of the undersigned geologist using geologic and hydrogeologic principles standard to the profession at the time the report was prepared in general conformance with the Requirements of Chapter 62-770, Florida Administrative Code. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of additional information on the assessment described in this report. This report was developed specifically for the referenced site and should not be construed to apply to any other site.



September 5, 2007
Mark A. Peterson, P.G.
Florida License Number PG-0001852

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
CERTIFICATION PAGE	iii
ACRONYMS/ABBREVIATIONS	vii
EXECUTIVE SUMMARY	ES-1
1.0 INTRODUCTION.....	1-1
1.1 PURPOSE AND SCOPE	1-1
1.2 FACILITY AND SITE LOCATION	1-1
1.3 REGIONAL GEOLOGY AND HYDROGEOLOGY	1-5
1.4 POTABLE WATER WELL SURVEY.....	1-5
1.5 TOPOGRAPHY AND DRAINAGE	1-5
1.6 LAND USE IN SITE VICINITY	1-6
1.7 SITE DESCRIPTION	1-6
1.8 SITE OPERATIONS AND INVESTIGATIVE HISTORY	1-9
1.9 PURPOSE OF CURRENT INVESTIGATION.....	1-11
2.0 SUBSURFACE INVESTIGATION METHODS.....	2-1
2.1 QUALITY ASSURANCE	2-1
2.2 ASSESSMENT STRATEGY	2-1
2.3 DETERMINATION OF GROUNDWATER GRADIENT	2-1
2.4 SOIL QUALITY ASSESSMENT	2-1
2.4.1 Field Screening Procedures	2-1
2.4.2 Soil Sampling Strategy for Fixed-Base Laboratory Analysis	2-3
2.4.2.1 Fixed-Base Laboratory.....	2-3
2.5 GROUNDWATER ASSESSMENT METHODS	2-3
2.5.1 DPT Grab Samples.....	2-3
2.5.2 Well Installation	2-4
2.5.2.1 Drilling Method	2-4
2.5.2.2 Construction and Development	2-6
2.5.2.3 Groundwater Sampling	2-6
3.0 RESULTS OF INVESTIGATION	3-1
3.1 SITE GEOLOGY AND HYDROGEOLOGY	3-1
3.1.1 Lithology.....	3-1
3.1.2 Groundwater Flow Direction	3-1
3.1.3 Aquifer Classification and Characteristics	3-2
3.2 SOIL SCREENING RESULTS.....	3-5
3.3 SOIL SAMPLE ANALYTICAL RESULTS	3-6
3.3.1 Mobile Laboratory	3-6
3.3.2 Fixed-Base Laboratory.....	3-6
3.4 GROUNDWATER ANALYTICAL RESULTS	3-9
3.4.1 Mobile Laboratory	3-9
3.4.2 Fixed-Base Laboratory.....	3-9
4.0 INTERIM REMOVAL ACTION	4-1
4.1 SOIL DELINEATION.....	4-1
4.2 SOIL EXCAVATION AND DISPOSAL.....	4-1
5.0 DISCUSSION.....	5-1
6.0 SUMMARY.....	6-1
7.0 RECOMMENDATIONS	7-1
REFERENCES.....	R-1

APPENDICES

A	SAR SUMMARY SHEET	A-1
B	J2 ENGINEERING, INC. REPORT “REPLACEMENT OF EXISTING FUEL LINES & DAY TANKS BUILDINGS 1388/351”	B-1
C	SOIL BORING LOGS AND LITHOLOGIC DESCRIPTIONS.....	C-1
D	CONSTRUCTION DIAGRAM.....	D-1
E	GROUNDWATER FIELD SAMPLING DATA SHEETS.....	E-1
F	MOBILE LABORATORY ANALYTICAL RESULTS.....	F-1
G	FIXED-BASE LABORATORY ANALYTICAL RESULTS.....	G-1
H	EXCAVATION PHOTOGRAPHS	H-1
I	SOIL DISPOSAL MANIFEST	I-1

TABLES

<u>NUMBER</u>		<u>PAGE</u>
1-1	Potable Water Well Survey Results	1-6
3-1	Water Table Elevation Data	3-2
3-2	Soil Vapor Results.....	3-5
3-3	Fixed-Base Laboratory Soil Analytical Results	3-7
3-4	Mobile Laboratory Groundwater Analytical Results.....	3-10
3-5	Fixed-Base Laboratory Groundwater Analytical Results	3-12
7-1	Monitoring Milestone Objectives	7-1

FIGURES

<u>NUMBER</u>		<u>PAGE</u>
1-1	Site Vicinity Map.....	1-2
1-2	Site Location Map	1-3
1-3	Site Plan	1-4
1-4	Potable Water Well Locations	1-7
1-5	USGS Topographic Map	1-8
2-1	Soil Sample Locations.....	2-2
2-2	Monitoring Well Location Map.....	2-5
2-3	Typical Monitoring Well Design.....	2-7
3-1	Groundwater Elevation Contour Map, January 20, 2006	3-3
3-2	Groundwater Elevation Contour Map, February 13, 2006.....	3-4
3-3	Fixed-Base Laboratory Soil Analytical Results	3-8
3-4	Mobile Laboratory Groundwater Analytical Results.....	3-11
3-5	Fixed-Base Groundwater Analytical Results	3-13
4-1	Soil Excavation Area and Soil Analytical Results	4-3

ACRONYMS

AFVR	Aggressive Fluid Vapor Recovery
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
bls	Below Land Surface
°C	Degrees Celsius
CLEAN	Comprehensive Long-term Environmental Action Navy
COC	Constituent of Concern
CTO	Contract Task Order
DPT	Direct-Push Technology
ENCO	Environmental Conservation Laboratories, Inc.
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	Flame-Ionization Detector
ft	Feet (or Foot)
ft/day	Feet (or Foot) per Day
ft/ft	Feet (or Foot) per Foot
GAG	Gasoline Analytical Group
GCTL	Groundwater Cleanup Target Level
ID	Inside Diameter
IRA	Interim Removal Action
KAG	Kerosene Analytical Group
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mgd	Million Gallons per Day
MONA	Monitoring Only by Natural Attenuation
msl	Mean Sea Level
MTBE	Methyl Tertiary-Butyl Ether
NADC	Natural Attenuation Default Concentration
NAVFAC SE	Naval Facilities Engineering Command Southeast
NAVSTA	Naval Station
Navy	United States Navy
NM	Not Measured
OVA	Organic Vapor Analyzer
PAH	Polynuclear Aromatic Hydrocarbon
ppm	Parts per Million
PVC	Polyvinyl Chloride
SA	Site Assessment

ACRONYMS (Continued)

SAR	Site Assessment Report
SCH	Schedule
SCTL	Soil Cleanup Target Level
SOP	Standard Operating Procedure
TOC	Top-of-Casing
TRPH	Total Recoverable Petroleum Hydrocarbons
TiNUS	Tetra Tech NUS, Inc.
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed a Site Assessment (SA) at Site 351-1, Naval Station (NAVSTA) Mayport, Mayport, Florida in accordance with the requirements of Chapter 62-770, Florida Administrative Code (FAC). In addition on to the SA Report (SAR), an Interim Removal Action (IRA) was completed which involved the removal of petroleum-impacted soil identified during the SA. This SAR and the IRA will be submitted to the Florida Department of Environmental Protection (FDEP) for approval. A SAR summary sheet is included as Appendix A.

To complete this SA and IRA, TtNUS:

- Reviewed available United States Navy (Navy) documents to:
 - Identify potential sources and receptors for petroleum hydrocarbons in the vicinity.
 - Identify private potable wells within a 0.25-mile radius of the site and public water supply wells within a 0.5-mile radius.
 - Locate nearby surface water bodies.
 - Evaluate surface hydrology and drainage.
- Performed a soil vapor survey in the unsaturated zone to delineate areas of excessively contaminated soil, if present.
- Advanced a total of 12 soil borings on site by means of hand augering or Direct-Push Technology (DPT) and collected soil and groundwater samples from the borings for analysis by a mobile laboratory.
- Collected confirmatory soil samples at the former sump to be analyzed for Gasoline Analytical Group (GAG)/Kerosene Analytical Group (KAG) constituents. Based on the results of the GAG/KAG analysis results, constituents of concern (COCs) were determined and used for delineating the area of impacted soil.
- Collected soil samples for COC delineating former sump area.
- Removed petroleum impacted soil from former sump location for disposal at a State licensed facility.
- Installed one shallow monitoring well and one temporary monitoring well. Groundwater samples collected from permanent and temporary wells were analyzed for GAG/KAG constituents.

- Referenced and obtained appropriate aquifer data from the United States Geological Survey (USGS) to calculate aquifer characteristics at NAVSTA Mayport.

The investigation was centered on the western side of a walkway area between Buildings 351 and 1388 where a fuel release from the same heating oil pipe that ruptured in 1999, ruptured again during the period of time between October 30, 2003, and March 15, 2004, filling a sump with fuel oil. Several inches of free product were observed inside the sump cavity during quarterly monitoring on March 15, 2004. No free product was observed overflowing out of the sump and no evidence of stained soil surrounding the sump was observed. During October 2004, the sump was removed and a new fuel line was installed. Some petroleum-impacted soil was removed for disposal, but not all was taken at this time. Prior to the new release, Site 351-1 was in a monitored natural attenuation status to address remnant petroleum-impacted groundwater. The new release necessitated a site investigation to evaluate current conditions at the site.

Contaminated soil in excess of the Soil Cleanup Target Levels (SCTLs) as defined by Chapter 62-770, FAC, were present as verified by laboratory analytical results at the area of the former sump. The COC in the soil was total recoverable petroleum hydrocarbons (TRPH) which impacted an area approximately 5 feet (ft) x 6 ft and extends to the water table which is approximately 5.0 ft below land surface (bls) (approximately 6 cubic yards). On January 7, 2007, approximately 6 cubic yards of petroleum-impacted soils were removed for disposal at a State licensed facility. This source removal action remediated all known petroleum soil impacts at this site leaving only groundwater as the media of concern with observed exceedances of FDEP Chapter 62-777, FAC, Groundwater Cleanup Target Levels (GCTLs).

The vertical extent of groundwater impacts were verified through mobile laboratory results from a DPT groundwater sample point located near the former sump and analyzed by a mobile laboratory. No groundwater exceedances were recorded for the vertical sample location. The horizontal extent of impacts to groundwater has been defined through mobile laboratory analysis and verified through similar samples collected from monitoring wells submitted to a fixed base laboratory for analysis. Groundwater constituents near to the former sump location that exceeded the GCTLs include benzene [1.4 micrograms per liter ($\mu\text{g/L}$)], naphthalene (14.2 $\mu\text{g/L}$), and xylenes (32.17 $\mu\text{g/L}$). The area of impact from the fuel line release originates approximately 3 ft south of monitoring well MW05 and is confirmed in MW05 (source area) and in MW06 (down gradient) located along the wall of Building 1388.

Based on the lack of free phase petroleum and groundwater concentrations that are within the Natural Attenuation Default Criteria threshold values, it is recommended that quarterly monitoring as volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and TRPH constituents resume under a new plan at this site in accordance with the Work Plan included in Section 7.0 of this document.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

TtNUS performed a SA at Site 351-1, NAVSTA Mayport, for the Navy Naval Facilities Engineering Command Southeast (NAVFAC SE) under Contract Task Order (CTO) 0386 of the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888. The data collected during the investigation was used to prepare a SAR. Information from the field investigation has been assimilated into this SAR to provide a characterization of site conditions from which to base future courses of action. A SAR Summary Sheet is included as Appendix A.

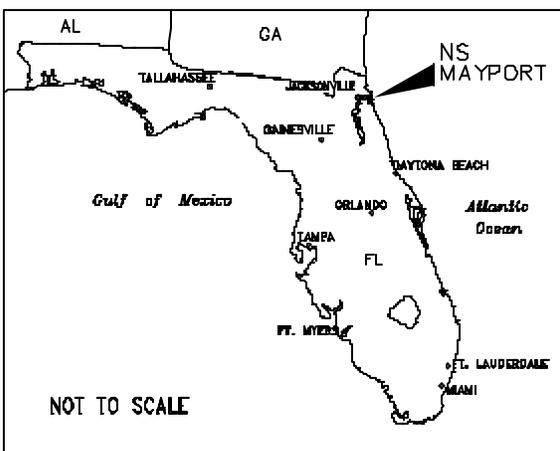
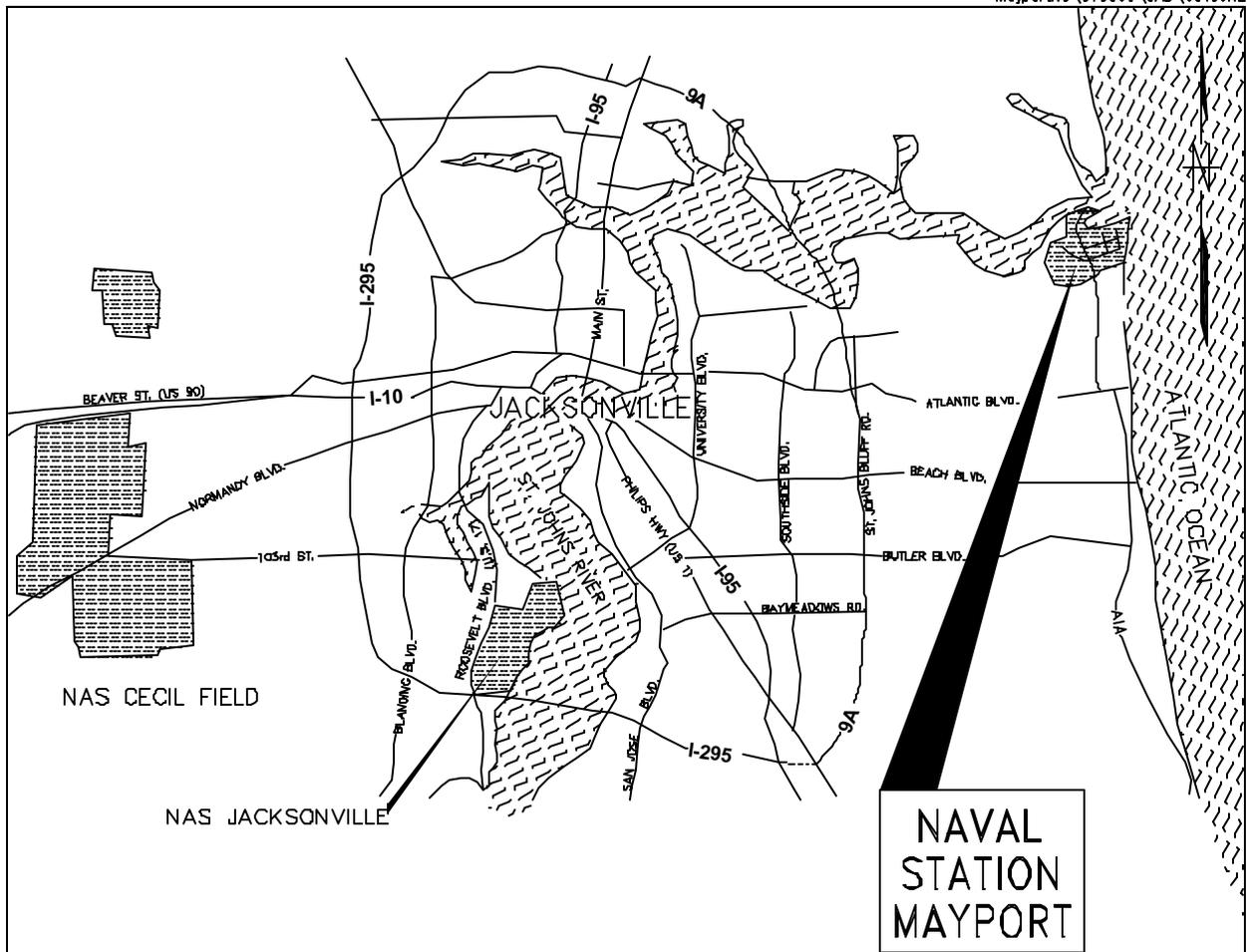
The purpose of the SA recently completed was to evaluate the extent of petroleum hydrocarbons in subsurface soils and groundwater at Site 351-1. A second release occurred in the same location as a prior release in 1999. The most recent release took place between October 30, 2003, and March 15, 2004, when an unknown volume of fuel was released. Field observations indicate that the release was limited in extent as there was no evidence of product outside of the sump and a limited quantity of fuel within the sump. A summary of site investigative history is provided below in Section 1.8.

1.2 FACILITY AND SITE LOCATION

NAVSTA Mayport is located within the corporate limits of the City of Jacksonville, Duval County, Florida, approximately 12 miles northeast of downtown Jacksonville and adjacent to the town of Mayport. A Site Vicinity Map showing NAVSTA Mayport's location in northeastern Florida is provided as Figure 1-1. The station complex is located on the northern end of a peninsula bounded by the Atlantic Ocean to the east and the St. Johns River to the north and west. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport, which is located to the west between the station and the St. Johns River.

Site 351-1 is located near the northeastern tip of the peninsula where the station is situated as shown on Figure 1-2. Building 351 is one of the primary buildings comprising the Training Support Detachment. The source area for the current investigation is located between Building 351 and Building 1388. As shown on the site plan on Figure 1-3, Building 1388 is approximately 35 ft northwest of Building 351.

MayportNS\CTO386\CAD\00103R1



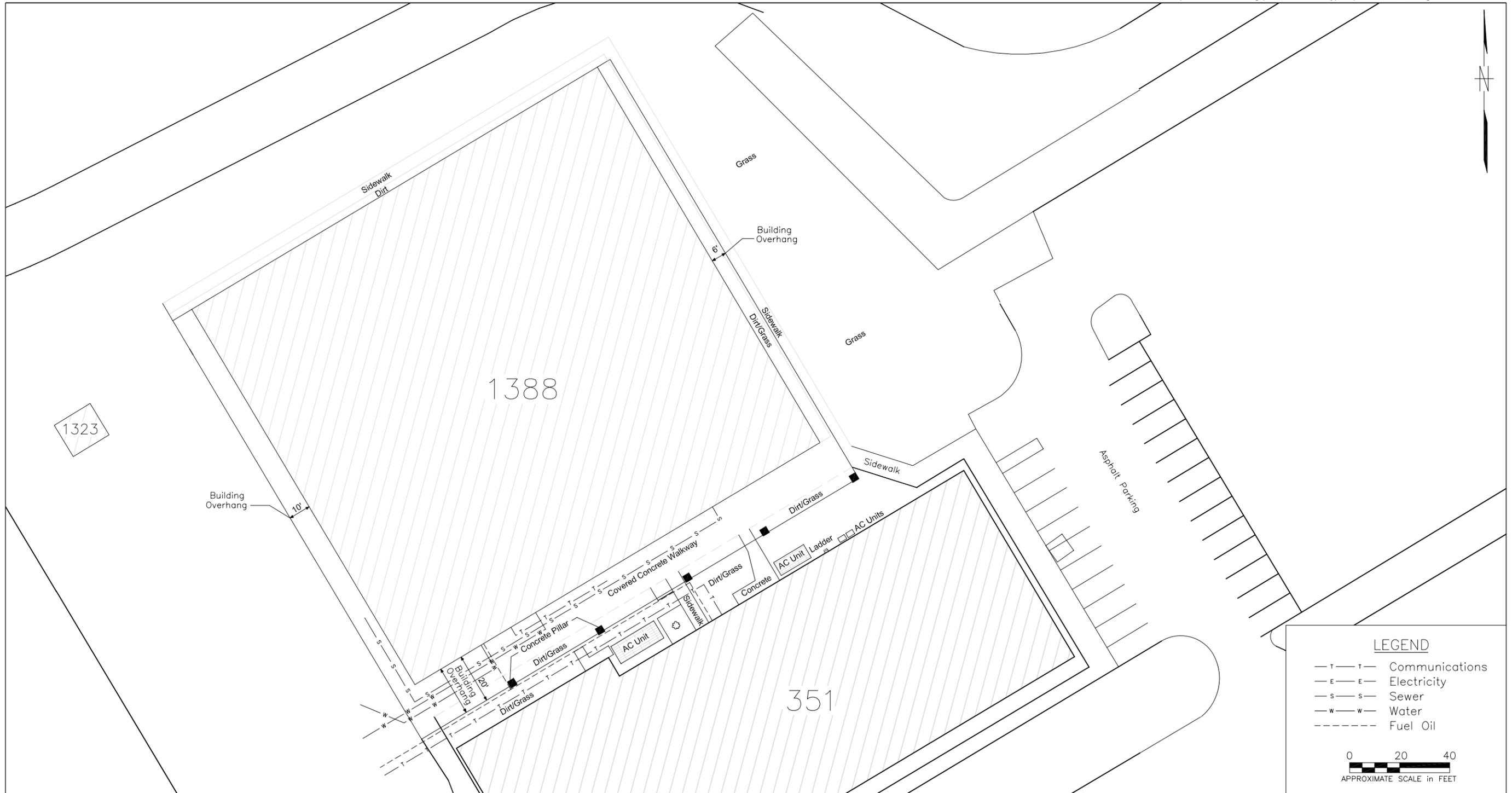
DRAWN BY LLK	DATE 8/31/05
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



SITE VICINITY MAP
SITE 351-1
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 00103	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1-1	REV. 0

FORM CADD NGL SDIV_AV.DWG - REV 0 - 1/20/98



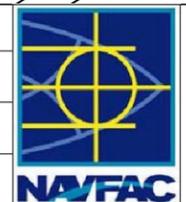
LEGEND

- T — T — Communications
- E — E — Electricity
- S — S — Sewer
- W — W — Water
- Fuel Oil

0 20 40
APPROXIMATE SCALE in FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK 8/31/05
 CHECKED BY DATE
 COST/SCHED-AREA
 SCALE AS NOTED



SITE PLAN
 SITE 351
 SITE ASSESSMENT REPORT
 NAVAL STATION MAYPORT
 MAYPORT, FLORIDA

CONTRACT NO. 00103	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1-3	REV. 0

1.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

Northeastern Florida is underlain by two main aquifer systems: the surficial aquifer system and the Floridan aquifer system. The surficial aquifer system in the vicinity of NAVSTA Mayport includes sediments of the Upper Hawthorn Group, upper Miocene and Pliocene deposits, and Pleistocene and Holocene deposits [United States Department of Agriculture (USDA), 1978]. These undifferentiated surficial deposits extend from land surface to the top of the Hawthorn Group about 50 ft bls (USGS, 1992).

The surficial aquifer system consists of fine-grained sands near the surface interspersed with thin (less than 1 ft) clay lenses and generally grades to a mixture of sand and coarse shell fragments from 30 to 50 ft bls. The base of the surficial aquifer system is its contact with the underlying intermediate confining unit, which is a sequence of marine clays and discontinuous limestone stringers (Spechler, 1994).

The Floridan aquifer system is the principal source of groundwater for public drinking water in most of northeast Florida. In the area of investigation, the system is comprised of (from youngest to oldest) the Ocala Formation, the Avon Park Formation, and the Oldsmar Limestone. The Hawthorn Group, a confining unit between the surficial aquifer system and Floridan aquifer system, unconformably overlies the Floridan aquifer (USDA, 1978).

1.4 POTABLE WATER WELL SURVEY

The potable water supply information presented in this report was obtained from a Contamination Assessment Report prepared by the United States Army Corps of Engineers (USACE) for a nearby site (Site 1330) in 1992 (USACE, 1992). Potable well information is summarized on Table 1-1, and the locations of the potable wells are depicted on Figure 1-4.

Potable water is supplied to NAVSTA Mayport by three on-base supply wells. Two of the active wells (Well Numbers 1 and 2) are within 1 mile of the site as shown on Figure 1-4. One of the three wells is 12 inches in diameter, and the other two are 16-inch diameter wells. All three wells draw water from the Floridan aquifer from depths of approximately 1000 ft bls. Well capacities range between 2.1 and 2.9 million gallons per day (mgd) with a combined total pumping capacity of 10.0 mgd. The water is treated by the base water treatment plant prior to distribution.

1.5 TOPOGRAPHY AND DRAINAGE

NAVSTA Mayport is located in the Southeastern Coastal Plain physiographic province. The topography is mostly low, gentle to flat, and composed of a series of ancient marine terraces. NAVSTA Mayport is

located within the Silver Bluff Terrace. The average land surface elevation at NAVSTA Mayport is between 8 and 10 ft above mean sea level (msl) (USGS, 1992).

Table 1-1 Potable Water Well Survey Results Site Assessment Report, Site 351-1 Naval Station Mayport Mayport, Florida				
Well ID	Distance from Site (miles)	Diameter (inches)	Depth of Well (ft bls)	Use
1	>0.5	12	1,000	In use
2	>0.5	16	1,000	In use
3	>0.5	16	1,000	In use

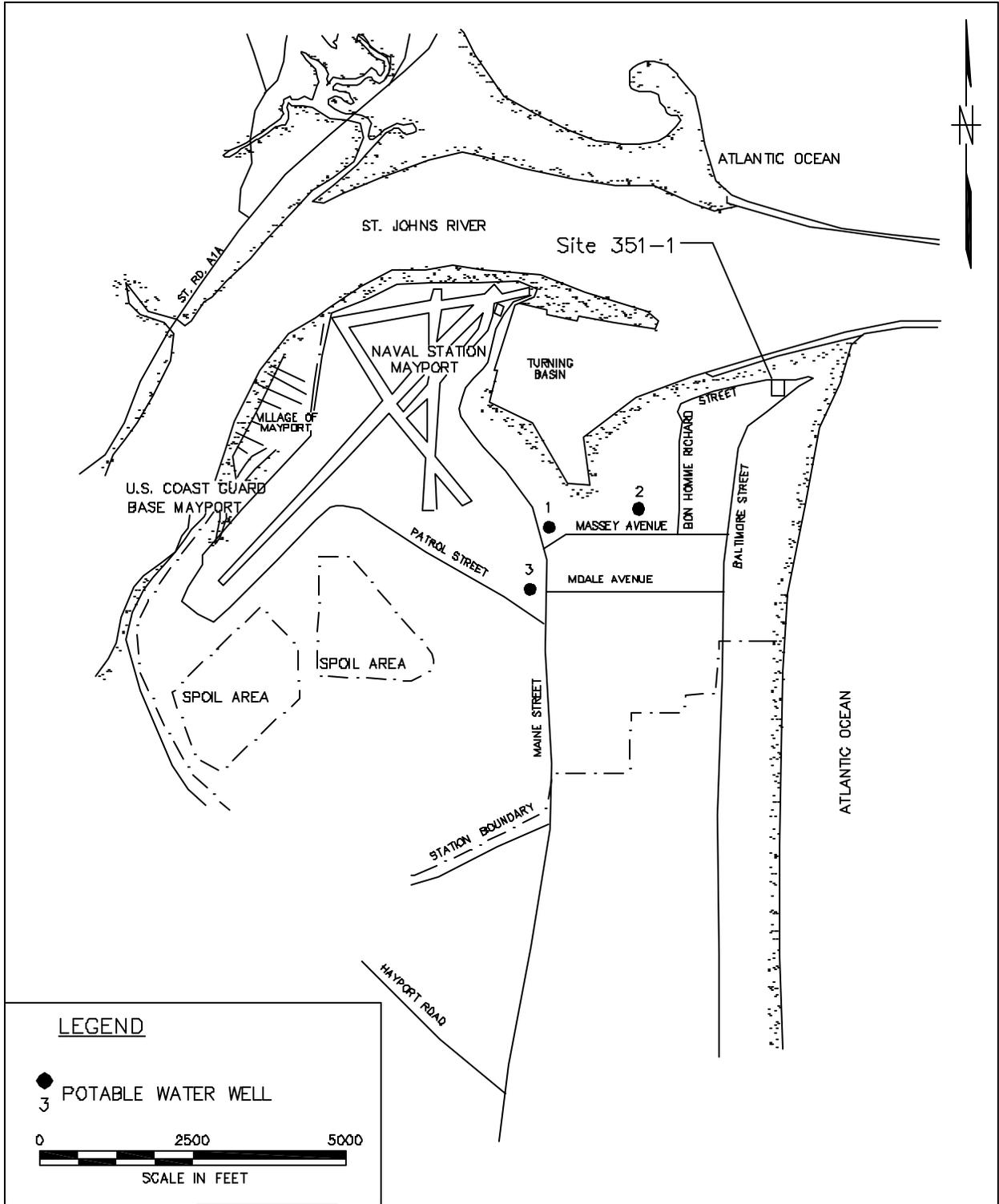
Site 351-1 is a relatively flat parcel located at the northeastern tip of NAVSTA Mayport on a parcel of land separating the St. Johns River from the Mayport turning basin as shown on Figure 1-2. A portion of the USGS Mayport, Florida 7.5-minute quadrangle has been reproduced as Figure 1-5 to show the site location relative to its topographic surroundings.

1.6 LAND USE IN SITE VICINITY

Building 351 is located within the northeastern section of the NAVSTA Mayport. Building 351 is one of the primary buildings used for the Training Support Detachment. Buildings within the area are used for fleet training and area primarily classrooms. Building 351 is joined by a walkway by Building 1388 (beyond Building 1388 is a recreational area) to the north, Baltimore Road (beyond Baltimore Street is a parking lot) to the south, a parking lot and the Atlantic Ocean to the east, and classrooms and fleet training structures that simulate Naval emergency situations (such as fire and ship sinking) to the west. The average land surface elevation is between 8 to 10 feet above msl. No industrial and residential buildings are in the vicinity.

1.7 SITE DESCRIPTION

A site plan depicting Site 351-1 and its surroundings is provided as Figure 1-3. The floor plan of Building 351 comprises approximately 20,000 square ft and is oriented with its long dimension northeast to southwest. Building 1388 is situated approximately 35ft northwest of Building 351, is roughly square in plan view, and covers approximately 32,000 square feet. Building 1388 has a 20-ft wide overhang on the side facing Building 351 (southeastern side) with a covered concrete walkway underneath. The subject site is located near the western end of the walkway. Approximately 7 ft south of the concrete walkway is the location of the former sump, the source area for past and current Insert Figures 1-4 and 1-5



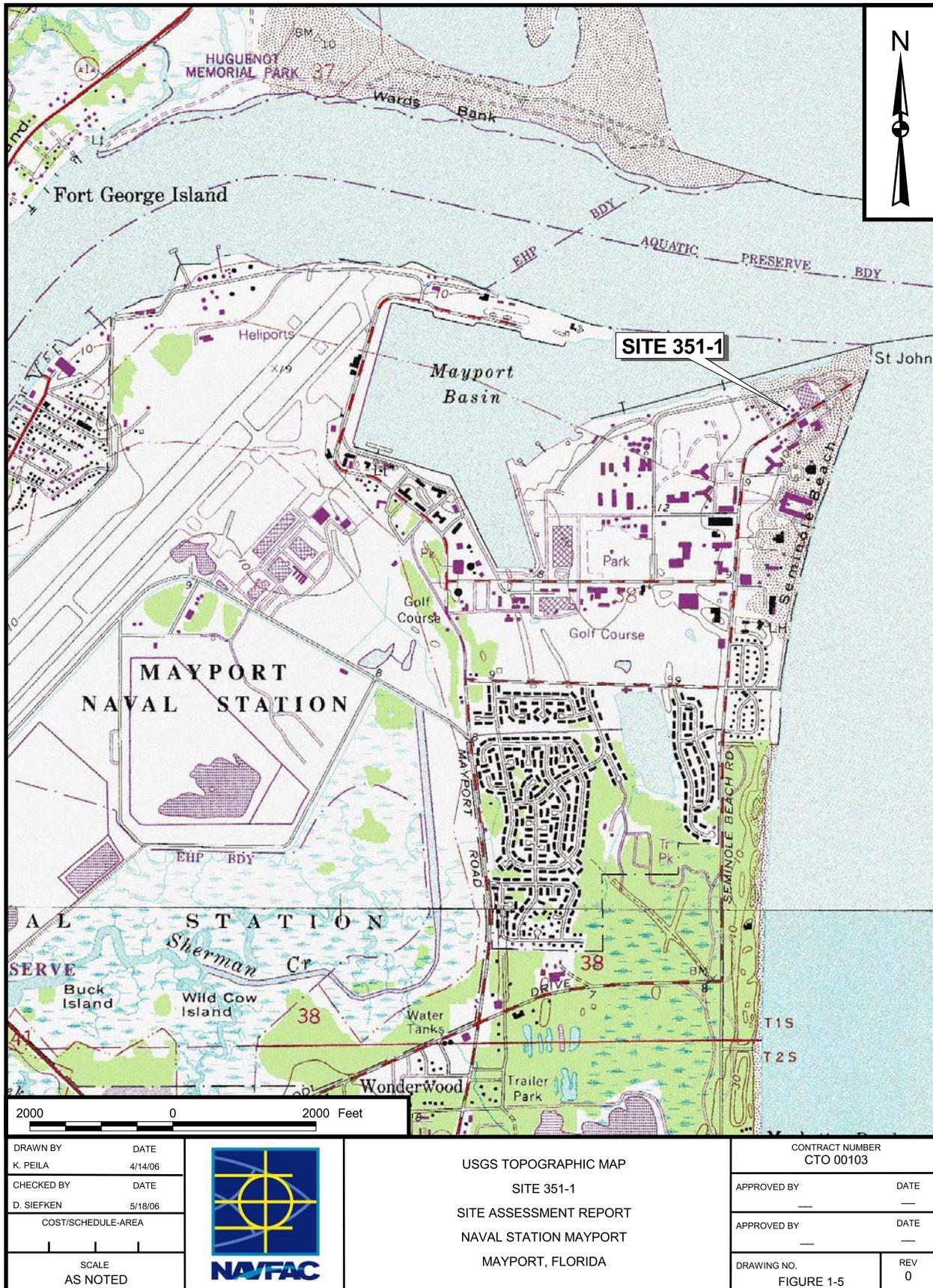
DRAWN BY LLK	DATE 8/31/05
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



POTABLE WATER WELL LOCATIONS
SITE 351-1
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO. 00386	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1-4	REV. 1

FORM CADD NO. SDIV_AV.DWG - REV 0 - 1/20/98



P:\GIS\MAYPORT_NSI\APR\4195_230_283QUAD.APR USGS TOPOGRAPHIC MAP_351-1 6/6/06 MKB (KOP)

assessment activities. The source area is congested with planters, support columns to hold the covered walkway, and large commercial air conditioners. Utilities such as communication, sewer, water, power and a fuel oil line are present in this grassy area or beneath the concrete walkway. The majority of the site is covered by this concrete walkway. Buildings 351 and 1388 are both classrooms used for fleet training.

1.8 SITE OPERATIONS AND INVESTIGATIVE HISTORY

On July 2, 1999, a diesel fuel release was reported at Building 351. The source of the discharge was reported to be a ruptured 1.5-inch diameter distribution pipe containing diesel fuel located underground (approximately 2.5 ft bls). The amount of diesel fuel released was not known. Approximately 7 tons of soil from the impacted area was removed and transported off-site for treatment, after which four temporary monitoring wells were installed in the excavation area to evaluate groundwater quality. Approximately 2 ft of liquid phase hydrocarbons was measured in the shallow aquifer beneath the excavation area using an oil/water interface probe. This discovery resulted in recovery of approximately 1,200 gallons of a free product/water mixture that was removed from the site between July and August 1999.

TtNUS initiated a site assessment at Building 351 in May 2000 in accordance with Chapter 62-770, FAC. The assessment included a soil vapor survey, soil and groundwater sampling using direct push technology, and installation of four permanent monitoring wells for groundwater sampling and analysis. No excessively contaminated soil was identified. Petroleum constituents were identified in a groundwater sample at concentrations exceeding the FDEP GCTLs. The direction of groundwater flow was estimated to be northerly at a very shallow gradient.

In a letter to Ms. Beverly Washington of NAVFAC SE dated March 5, 2001, Mr. Jim Cason of the FDEP requested that a SAR Addendum be prepared. Based on input from FDEP and Navy comments during a NAVSTA Mayport Partnering Team meeting, TtNUS installed an additional monitoring well immediately adjacent to a sump where the original release had occurred. The well had to be installed by hand auger methods due to access restrictions. The well (MW-05) was completed as a 1-inch diameter microwell on January 3, 2001, and sampled the next day for GAG and KAG constituents. Six petroleum constituents were identified at concentrations exceeding GCTLs. Total xylenes were reported at concentrations exceeding Natural Attenuation Default Concentration (NADC) criteria. On March 26, 2001, a TtNUS representative reported product in well MW-05 during routine depth-to-groundwater measurements. Product was not observed in the other monitoring wells on site.

On June 6, 2002, the NAVSTA Mayport Partnering Team proposed that an interim remedial measure be conducted using Aggressive Fluid Vapor Recovery (AFVR), an innovative high vacuum extraction

technology. This method was recommended because of heavy foot traffic and proximity of buildings in the area of concern. In order to implement this measure, a 4-inch diameter recovery well (RW-01) was installed near MW-05 and adjacent to the sump where free product had previously been observed. Three AFVR events were conducted between July and September 2002.

On October 28, 2002, groundwater samples were collected from the five site monitoring wells to evaluate the effectiveness of the AFVR events. Benzo(a)anthracene and TRPH were reported at concentrations exceeding GCTLs in samples collected from the source well, MW-05. No other GCTL exceedances were reported.

A report detailing results of the three AFVR events was prepared and submitted to the FDEP on March 27, 2003. Based on the results, it was recommended that a Monitoring Only Natural Attenuation (MONA) Plan be implemented.

The MONA was approved by the FDEP on May 9, 2003. The approved MONA stipulated that three wells [MW-05 (source area), RW-01 (recovery well), and MW-04 (immediately downgradient of source)] be sampled quarterly for gasoline and kerosene analytical group constituents until concentrations decreased below GCTLs for all targeted constituents.

However, during the second quarterly sampling event (March 15, 2004), groundwater samples were only collected from downgradient well MW-04 because free product was discovered anew in RW-01, MW-05, and the sump near these two wells. No stained soil was observed surrounding the sump area; therefore, it was surmised that the newly released free product did not crest above the confines of sump, keeping the impacted area within the 12-inch diameter spherical polyvinyl chloride (PVC) sump. It was reported that the possible cause for fuel in the sump was the December 16, 2003, release from a nearby ruptured fuel line located approximately 70 ft to the east (Johnson Controls Hill, 2003) which is being investigated separately. Product thickness in the two wells was measured at 14 inches. The new release occurred between October 30, 2003, and March 15, 2004, but the exact date and volume of the released fuel is not known. The NAVSTA Mayport Partnering Team determined that the monitoring would continue through the fourth quarter to monitor any new groundwater impacts with additional efforts directed at free product removal. The third quarter sampling event was postponed until after the NAVSTA Mayport Environmental Department retained a contractor to remove free product from MW-05 and RW-01. After the second release, monitoring wells MW-01, MW-02, and MW-03 were added to the quarterly sampling program, and wells MW-05 and RW-01 were removed from the list due to the potential presence of free product.

On July 8, 2004, 3000 gallons of liquid (mostly water with some free product) were removed from monitoring well MW-05 via vacuum truck by Moran Environmental Recovery, Inc. under direction of the NAVSTA Mayport Environmental Department. The removed liquids were disposed at the Oily Waste

Treatment Plant located at NAVSTA Mayport. The next sampling event took place approximately one month after removal of free product was completed. During this third quarter event, approximately 2 inches of free product were observed in RW-01, MW-05, and the sump. No GCTL exceedances were reported in samples collected from MW-01, MW-02, MW-03, or MW-04. No free product was observed during the fourth quarter sampling and groundwater concentrations of wells MW-01, MW-02, MW-03, and MW-04 were again below GCTLs. The fourth quarter sampling event ended the monitoring of the site.

During October 2004, J2 Engineering Inc. of Jonesville, Florida removed the existing product line, sumps, and day tanks associated with Buildings 351-1 (site of 1999 release) and 1388 and replaced all with new materials. A total of 11 soil samples were collected for laboratory analysis of GAG/KAG constituents from various locations approximately 6 inches below the once active fuel line and sumps. Two areas of contaminated soil exceeding the SCTLs were identified: the sump between Building 351-1 and 1388 (the site of this investigation) and the release from a day tank located in Building 351, now called area 351-2 where an ongoing separate environmental assessment by TtNUS is being conducted. The focus of this investigation is TRPH, the COC which exceeded the GCTLs for sump #03. One drum containing petroleum-impacted soil was disposed of by Perma-Fix during the removal/installation of the fuel lines from Building 351-1. A copy of the report detailing work completed by J2 Engineering is provided as Appendix B.

1.9 PURPOSE OF CURRENT INVESTIGATION

The objective of the SA was to assess the extent and magnitude of soil and/or groundwater contamination at Site 351-1 resulting from past and/or current fuel usage at the site. The data collected during the investigation was used to prepare this SAR as required by Chapter 62-770.600, FAC. This SAR provides a characterization of site conditions from which to base future courses of action. A SAR summary sheet is provided as Appendix A.

2.0 SUBSURFACE INVESTIGATION METHODS

2.1 QUALITY ASSURANCE

The site investigation was conducted in general accordance with the FDEP-approved Standard Operating Procedures (SOPs) (DEP-001/92).

2.2 ASSESSMENT STRATEGY

Soil and groundwater quality was assessed at the site in two phases: a screening phase (Phase I) in which soil and groundwater grab samples were collected by DPT and manual drive point methods and analyzed by an on-site mobile laboratory. The second phase (Phase II) included additional soil samples and the installation of one permanent monitoring well and one temporary monitoring well at optimum locations based upon Phase I results. Due to the presence of the existing monitoring wells from previous investigations, only two new wells were needed to be installed. Groundwater samples were collected for analysis from the newly installed wells and existing site wells. During Phase II collected soil and groundwater samples were analyzed for GAG/KAG per Chapter 62-770, FAC, by a fixed-base laboratory.

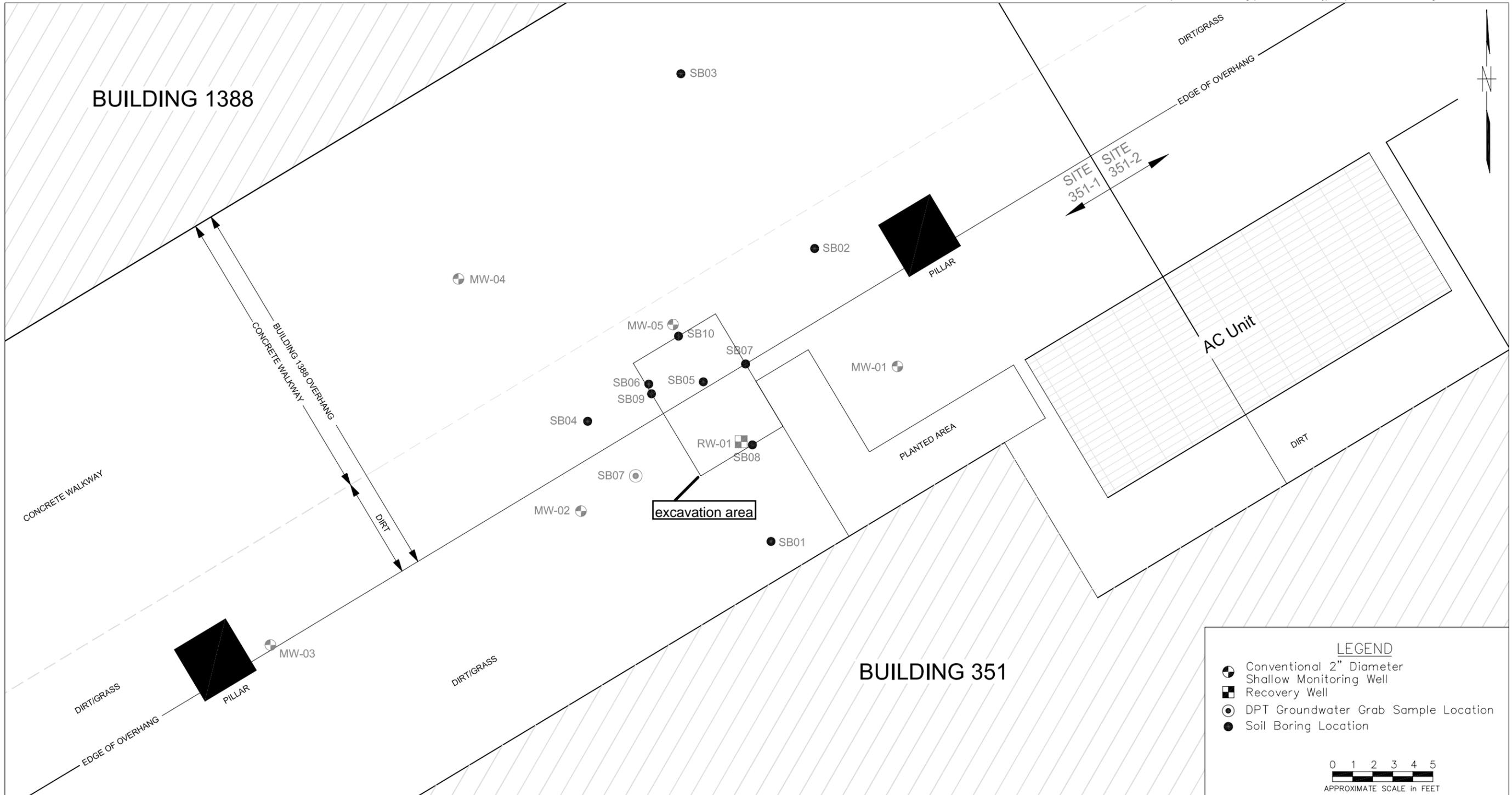
2.3 DETERMINATION OF GROUNDWATER GRADIENT

Previous assessments at Site 351-1 have historically determined that groundwater flow direction in the shallow aquifer beneath the site is to the north and northeast toward the St. Johns River. Determination of groundwater elevations in the surficial aquifer during previous assessments was accomplished conventionally by surveying top-of-casing (TOC) elevations of permanent monitoring wells relative to a temporary benchmark, measuring depth-to-water from the TOC of the wells, and subtracting depth-to-water measurements from surveyed TOC elevations.

2.4 SOIL QUALITY ASSESSMENT

2.4.1 Field Screening Procedures

Locations of 10 soil borings completed at Site 351-1 are shown on Figure 2-1. During Phase I of the assessment, borings were advanced 3.0 ft bls using a stainless steel, 3-inch inside diameter (ID) hand auger assembly. If groundwater was to be screened from the sample location, the boring was completed to the water table (approximately 5 ft bls). Soil samples collected from borings SB-1 through SB-6 were collected from each location at depths of 1 ft and 3 ft bls while soil borings collected from SB-7 through SB-10 were screened at depths of 0.5 ft, 1.5 ft, and 3 ft bls for organic vapors using an Organic Vapor Analyzer (OVA) equipped with a Flame Ionization Detector (FID). Soil vapor analyses were performed in



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK 8/19/05
 CHECKED BY DATE
 COST/SCHED-AREA
 SCALE AS NOTED



SOIL SAMPLE LOCATIONS
 SITE 351
 SITE ASSESSMENT REPORT
 NAVAL STATION MAYPORT
 MAYPORT, FLORIDA

CONTRACT NO. 5863	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2-1	REV. 0

accordance with the headspace screening method described in Chapter 62-770.200(19), FAC. Typically the soil samples from each soil boring with the greatest OVA reading is submitted for mobile laboratory analysis. If no reading greater than background is measured, historical documentation and field observations are used to determine sample collection for mobile laboratory analysis. Soil constituents analyzed by the mobile laboratory were screened for benzene, toluene, ethylbenzene and total xylenes (BTEX); naphthalene; 1-methylnaphthalene; 2-methylnaphthalene; and methyl tertiary-butyl ether (MTBE). Results of the soil vapor screening survey and mobile laboratory sample results conducted at Site 351-1 are discussed in Section 3.2.

2.4.2 Soil Sampling Strategy for Fixed-Base Laboratory Analysis

2.4.2.1 Fixed-Base Laboratory

During phase II of the soil assessment, two soil samples were submitted to Environmental Conservation Laboratories, Inc. (ENCO) of Jacksonville, Florida (fixed-base laboratory) for analysis of VOCs, PAHs, and TRPH (GAG/KAG) per Chapter 62-770, FAC. Soil samples are typically selected based on OVA and mobile laboratory screening results. Since OVA and mobile laboratory screening results failed to identify a potential source, samples were selected based on historical information documenting the location of the former sump and the results of these fixed-base analysis. Based on soil samples analysis collected during the 2004 sump removal, only TRPH exceedances were recorded making it difficult to field screen for the soil impacts. The presence of only TRPH was verified from the analysis of one (SB-05) of two soil samples collected that exceeded the SCTL for TRPH. Based on these findings, additional soil samples (SB-07, SB-08, SB-09, and SB-10) were collected for the chemical of concern and analyzed for TRPH only.

2.5 GROUNDWATER ASSESSMENT METHODS

2.5.1 DPT Grab Samples

The primary purpose of the DPT investigation (August 10 to 12, 2005) was to collect groundwater grab samples from the upper 4 ft of the saturated zone and, in conjunction with quick turnaround mobile laboratory analyses, estimate the lateral and vertical extent of contamination in the shallow surficial aquifer. Grab samples were collected by DPT (GeoProbe[®]) from the approximate depth interval 4ft to 8 ft bls at the four soil boring locations. The samples were collected from the DPT using a detachable drive tip attached to a 48-inch, retractable stainless steel well screen encased in the lead drive casing. After the water sampler was advanced into the designated zone, the casing was withdrawn 48 inches to allow groundwater into the retractable screen. For groundwater recovery, tubing was inserted into a peristaltic pump. Several screen volumes were then pumped from the probe in order to reduce turbidity.

Once the turbidity was reduced to a near static level, groundwater samples were collected. Groundwater samples were also collected from five existing permanent monitoring wells on site MW01 through MW05, and one recovery well RW-01. Once collected, the groundwater and soil samples were immediately delivered to the on-site mobile laboratory for analysis of BTEX, MTBE, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

2.5.2 Well Installation

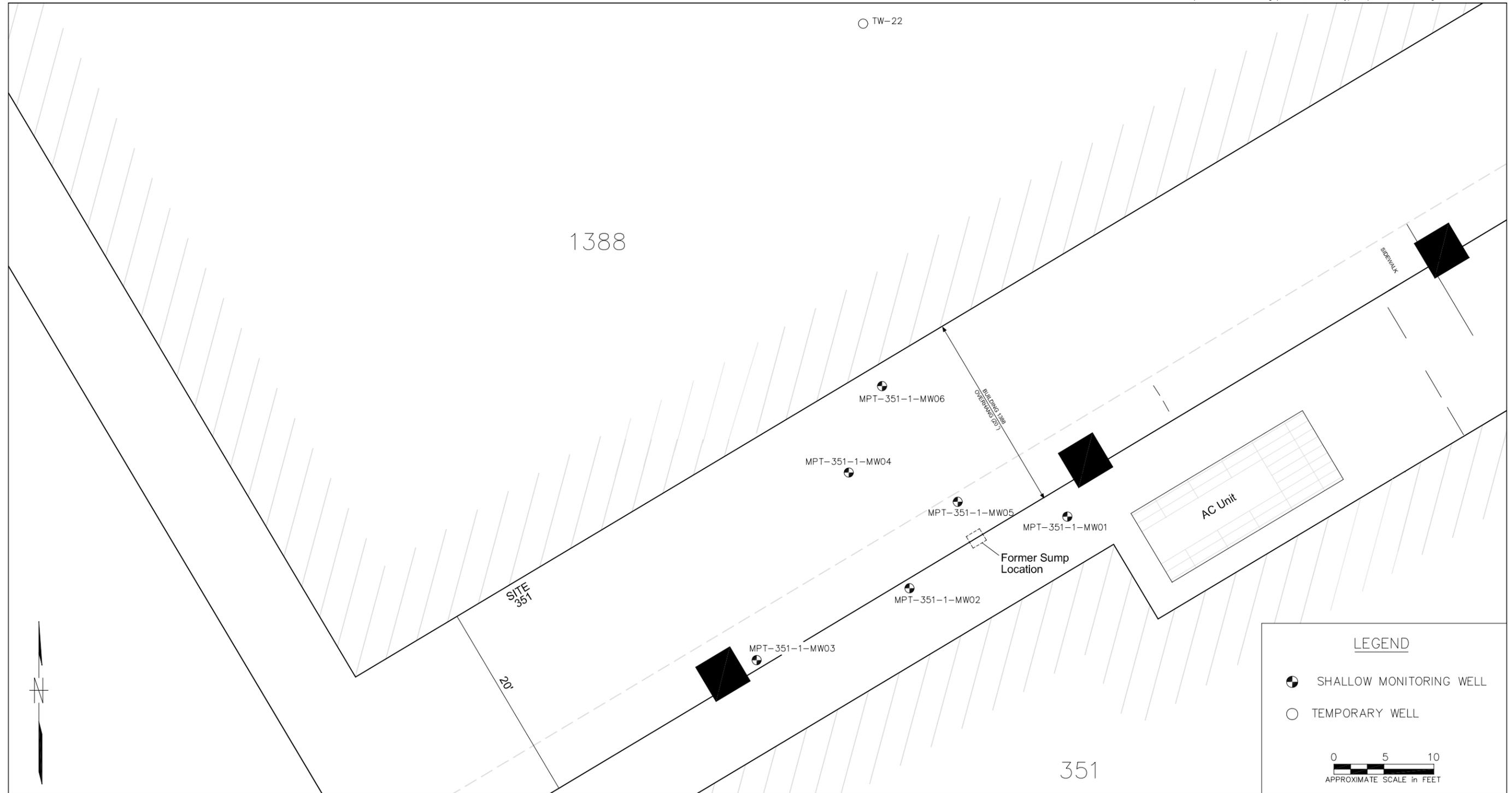
On December 29, 2005, a TtNUS representative installed temporary well (TW-22) using a hand auger and drive point sampling device located approximately 30 ft inside the southern wall and 85 ft inside the western wall of Building 1388. Temporary well TW-22 was installed, sampled, and removed on the same day by a TtNUS geologist. The purpose of the temporary well was to evaluate the down gradient migration of the petroleum plume. One permanent monitoring well [MPT-351-1-MW06 (MW06)] was later installed at the site on January 16, 2006, by Partridge Well Drilling, Inc. of Jacksonville, Florida under TtNUS supervision. Well MW-06 is a shallow monitoring well completed with an 8-ft screened section intersecting the water table and is located in the most down gradient position without entering Building 1388. Monitoring well and temporary well locations are shown on Figure 2-2. Well locations were selected based upon analytical results generated during Phase I. Positions of the two new monitoring wells and six existing wells relative to the former sump are as follows: RW-1 and MW-05 are the source area wells; MW-01, MW-02, and MW-03 upgradient; MW-04, MW-06, and TW-22 down gradient.

2.5.2.1 Drilling Method

Monitoring well MW-06 was completed by installing 1-inch diameter Schedule (SCH) 40 PVC screen and riser into the borehole created by a field cleaned stainless steel 3-inch ID hand auger. The total depth of the well is 10.5 ft bls. This well was completed as a typical monitoring well as described in Section 2.5.2.2.

Temporary monitoring well TW-22 was also installed using a field cleaned, stainless steel 3-inch ID auger bucket. Once at a depth of 7 ft bls, the auger was quickly removed and a temporary well was installed via a hand driven stainless steel groundwater sampling drive point. Unlike monitoring well MW06, this well was not completed as a monitoring well, but was removed once sampled due to site access restrictions.

Soil boring logs containing descriptions of cuttings generated during auguring of the permanent well are provided in Appendix C.



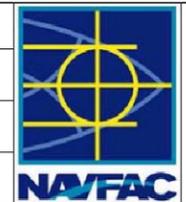
LEGEND

- SHALLOW MONITORING WELL
- TEMPORARY WELL

0 5 10
APPROXIMATE SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK
DATE 8/25/05
CHECKED BY
DATE
COST/SCHED-AREA
SCALE AS NOTED



MONITORING WELL LOCATION MAP
SITE 351-1
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO.	00103
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 2-2
REV.	0

2.5.2.2 Construction and Development

Monitoring well MW-06 was completed by installing 1-inch diameter SCH 40 PVC screen and riser into the borehole created by a field cleaned, stainless steel, 3-inch inner diameter hand auger. The 1-inch diameter microwell consists of 0.010-inch slotted pipe (well screen) and the section from land surface to 3 ft bls is solid riser. Standard silica sand (20/30) was used for U-Pack micro wells filling annular space surrounding the well screen. The total depth of the well is 10.5 ft bls with a Type I and II Portland cement grout seal from 1 to 2 ft bls with the (20/30) filter pack below the seal

Temporary monitoring well TW-22 was installed using a field cleaned, stainless steel, 3-inch ID auger bucket. Once at the point of refusal to proceed downward, 7 ft bls, the auger was quickly removed and a temporary well 1-inch in diameter drive point device was installed. Once sampled, the drive point was removed and back filled with natural formation.

Soil boring logs containing descriptions of cuttings generated during auguring are provided in Appendix C.

A schematic diagram showing details of well construction is provided as Figure 2-3. Construction diagrams for the individual wells are provided in Appendix D.

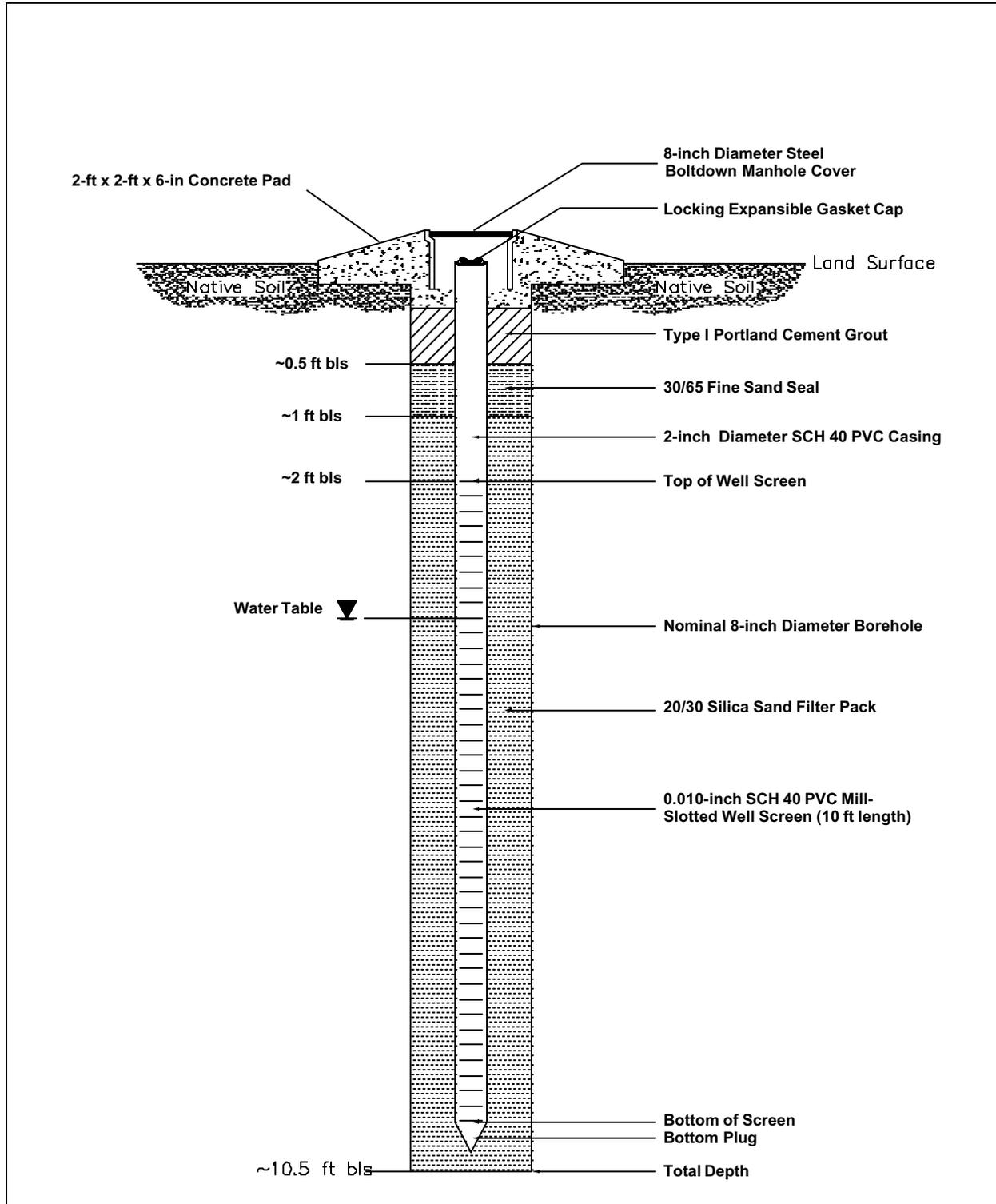
Permanent well MW-06 was developed a minimum 24 hours after completion by a TtNUS representative using a peristaltic pump. This well was developed until the water was virtually clear. All development water was containerized for disposal in 55-gallon steel drums.

2.5.2.3 Groundwater Sampling

Groundwater samples were collected from the two newly-installed monitoring wells (TW-22 and MW-06) and from the five existing wells. Temporary monitoring well TW-22 was sampled on December 29, 2005, and permanent monitoring wells (MW01 through MW-06) were sampled on January 18 and 19, and February 9, 2006. All wells were sampled for GAG/KAG constituents per Chapter 62-770, FAC. Sampling activities were documented in a site-specific field logbook

Groundwater sampling was conducted in general accordance with SOPs adopted by FDEP in 2002. A minimum one well volume was pumped from each shallow well (partially submerged screen), and a minimum one volume of the pump, associated tubing, and flow cell was pumped from the deep well (fully submerged screen) using a peristaltic pump and the low flow quiescent purging method. After purging of these initial quantities, purging was continued and field parameters pH, specific conductance, dissolved oxygen, temperature, and oxidation/reduction potential were measured periodically (minimum 3-minute

MayportNS\CTO346\CAD\00103W02



DRAWN BY LLK	DATE 10/17/02	E:\CAD\ELDCS\SOUTH\IV.TIF TYPICAL MONITORING WELL DESIGN SITE ASSESSMENT REPORT SITE 351-1 MAYPORT NAVAL STATION MAYPORT, FLORIDA	CONTRACT NO. 00103	
CHECKED BY	DATE		APPROVED BY	DATE
COST/SCHED-AREA			APPROVED BY	DATE
SCALE NOT TO SCALE			DRAWING NO. FIGURE 2-3	REV. 1

intervals) using a YSI 556 instrument. Turbidity was measured using LaMotte 2020 turbidimeter. Purging was considered complete when three consecutive measurements were within the following limits:

- Temperature \pm 0.2 degrees Celsius ($^{\circ}$ C)
- pH \pm 0.2 Standard Units
- Specific conductivity \pm 5 percent of previous reading(s)
- Dissolved oxygen not greater than 20 percent of saturation at field measured temperature
- Turbidity less than or equal to 20 Nephelometric Units.

Groundwater sampling logs and low flow purge sheets compiled during purging and sampling of the six wells are provided in Appendix E.

After collection, samples were immediately placed on ice and delivered to ENCO in Jacksonville, Florida the following morning under proper chain-of-custody and preservation (4° C) protocol. Samples were analyzed for GAG/KAG constituents, which included VOCs using United States Environmental Protection Agency (USEPA) Method 8260, PAHs using USEPA Method 8270, ethylene dibromide using USEPA Method 504.1, lead using USEPA Method 200.7, and TRPH using Florida Petroleum Range Organics.

3.0 RESULTS OF INVESTIGATION

3.1 SITE GEOLOGY AND HYDROGEOLOGY

3.1.1 Lithology

The most resolute description of material underlying Site 351-1 was obtained during retrieval of 5-ft macrocore samples collected by DPT during advancement of deep boring SB-07V to 20 ft bls on August 12, 2006. This soil boring location was selected based on relative proximity to the source area. Soil samples collected strictly for the purpose of determining site lithology were collected from a 5 ft barrel of a macorcore. Collected soil described by TtNUS' on-site geologist. Soil borings logs containing these lithologic descriptions are provided in Appendix C.

Soils encountered in the upper 20 ft consisted primarily of fine and very fine sand and, secondarily, of shell hash. Little to no silt was encountered in the upper 20 ft.

3.1.2 Groundwater Flow Direction

Using the method described in Section 2.3, the direction of groundwater flow in the surficial aquifer underlying the site was determined to be northeasterly toward the St. Johns River. This determination of groundwater flow direction was made by measuring the depths of existing monitoring wells as control points. Surveyed TOC elevations of the permanent monitoring wells; depth-to-water measurements obtained on January 20, 2006, and February 13, 2006. Water table elevation values for these two sets of measurements are presented in Table 3-1.

Groundwater elevation contour maps (potentiometric map) generated from the January 20 and February 13, 2006, data are provided as Figures 3-1 and 3-2, respectively. A review of Figure 3-1 and 3-2 depicts the groundwater flow in similar directions, but not the same when comparing the two events. The January 20, 2006, flow is both north northeast and northwest, while the February 13, 2006, groundwater flow is to the north. Both groundwater flow directions are oriented toward the St. Johns River. The varying groundwater flow is caused by the tidal influences associated with the site being located at the delta of the St. Johns River where it empties into the Atlantic Ocean.

<p align="center">Table 3-1 Water Table Elevation Data</p> <p align="center">Site Assessment Report, Site 351-1 Naval Station Mayport Mayport, Florida</p>						
Well ID Number MPT-1241-	Total Well Depth (ft)	TOC Elevation (ft msl)	January 20, 2006		February 13, 2006	
			Depth to Water Below TOC (ft)	Water Table Elevation (ft msl)	Depth to Water Below TOC (ft)	Water Table Elevation (ft msl)
MW-1	13	7.75	5.35	2.40	5.43	2.32
MW-2	13	7.73	5.32	2.41	5.38	2.35
MW-3	13	7.59	5.14	2.45	5.29	2.30
MW-4	11	8.34	5.94	2.40	6.02	2.32
MW-5	7	8.17	5.82	2.35	5.84	2.33
MW-6	9.5	8.27	NM	NM	NM	NM
<p>Notes: NM = not measured</p>						

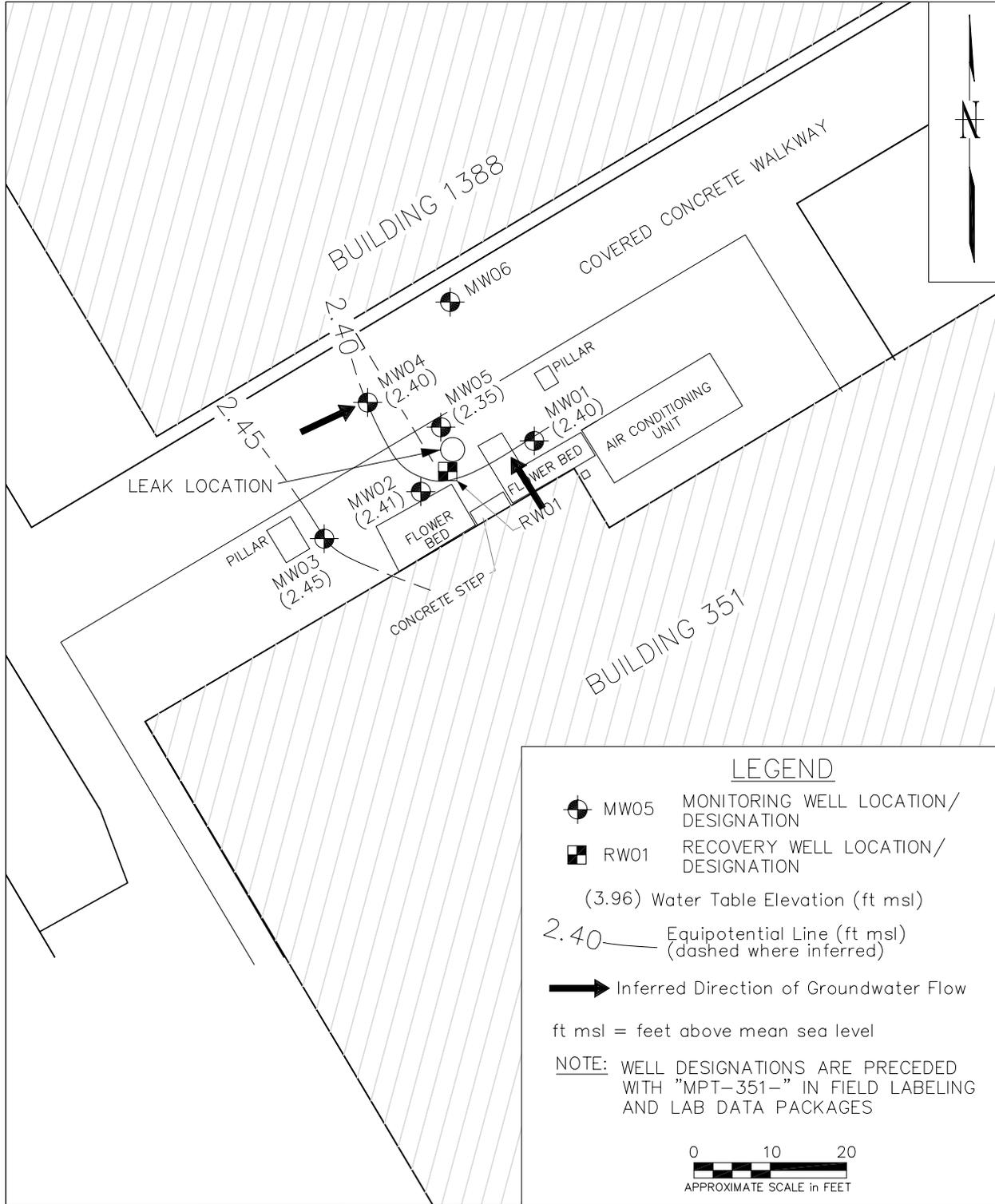
3.1.3 Aquifer Classification and Characteristics

The State of Florida classifies the surficial aquifer underlying the site as G-II. Previous USGS aquifer test data indicate that the average hydraulic conductivity of the surficial aquifer is approximately 4.34 ft per day (ft/day) (TtNUS, 2001).

The horizontal groundwater (hydraulic) gradient across the site was evaluated from water level data listed in Table 3-1 and shown on Figures 3-1 and 3-2. As these data and figures indicate, the hydraulic gradient at the site is subject to 180 degree reversal due to the site's position on a narrow peninsula roughly equidistant between two water bodies (St. Johns River and Mayport turning basin). The average horizontal hydraulic gradient beneath the site, calculated from potentiometric contours depicted on Figures 3-1 and 3-2, was determined to be 0.003 ft per ft (ft/ft).

Based on information provided by Driscoll (Driscoll, 1986) and on lithologic descriptions of material encountered during the current investigation, the effective porosity of surficial aquifer sediments was estimated to be 0.30.

Using Darcy's Law, the groundwater velocity at the site was calculated.



LEGEND

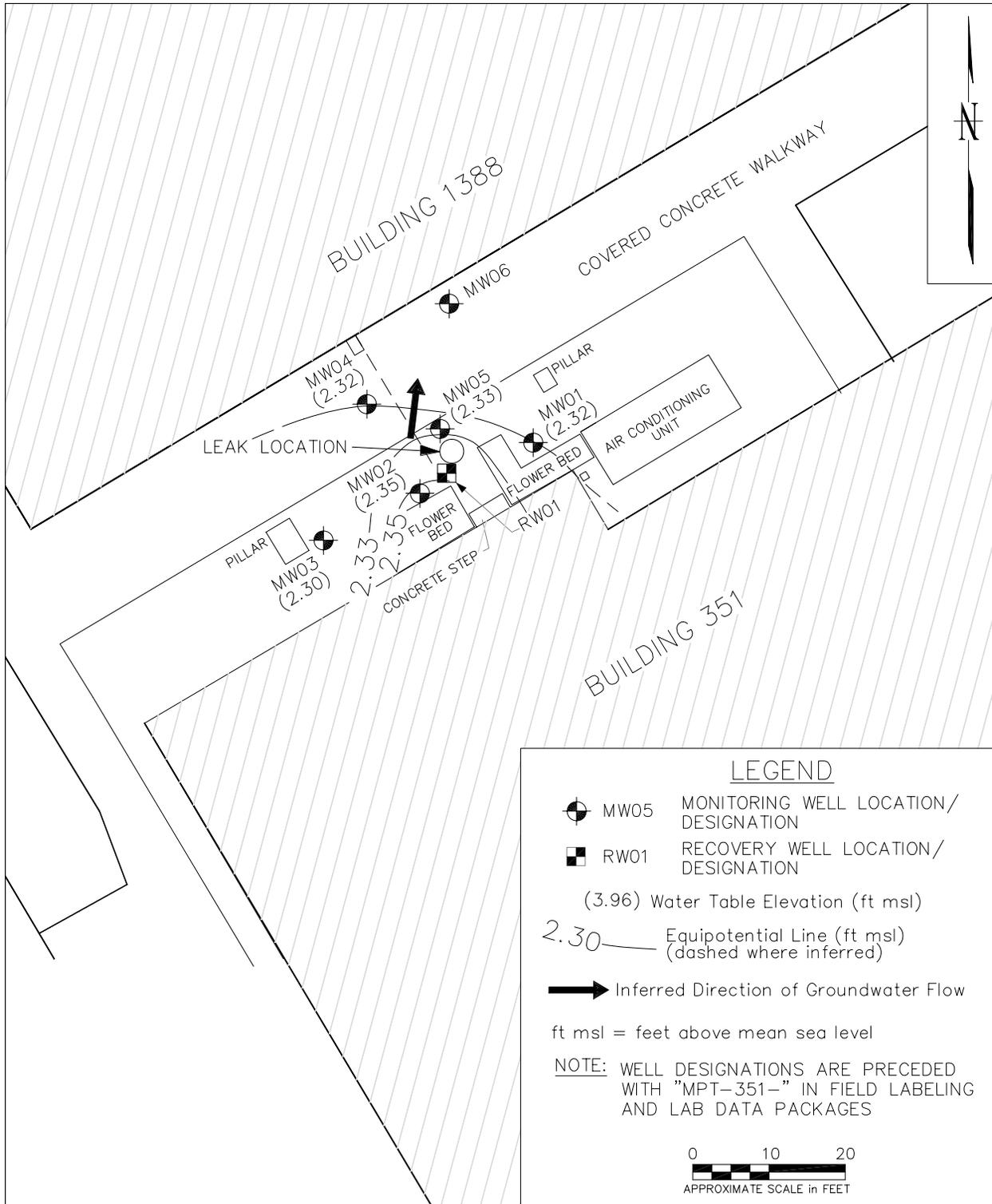
- MW05 MONITORING WELL LOCATION/ DESIGNATION
- RW01 RECOVERY WELL LOCATION/ DESIGNATION
- (3.96) Water Table Elevation (ft msl)
- 2.40 — Equipotential Line (ft msl) (dashed where inferred)
- Inferred Direction of Groundwater Flow

ft msl = feet above mean sea level

NOTE: WELL DESIGNATIONS ARE PRECEDED WITH "MPT-351-" IN FIELD LABELING AND LAB DATA PACKAGES

0 10 20
APPROXIMATE SCALE in FEET

DRAWN BY LLK	DATE 9/8/04	 NAVFAC	GROUNDWATER ELEVATION CONTOUR MAP JANUARY 20, 2006 SITE 351 FOURTH QUARTER MONITORING REPORT NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NO. 0103
CHECKED BY	DATE		APPROVED BY	DATE
COST/SCHED-AREA			APPROVED BY	DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-1	REV. 0



DRAWN BY LLK	DATE 9/8/04
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



GROUNDWATER ELEVATION CONTOUR MAP
FEBRUARY 13, 2006
SITE 351
FOURTH QUARTER
MONITORING REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO.	0103
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 3-2
REV.	0

Darcy's Law may be expressed as follows:

$$V = \frac{(K \times I)}{n}$$

where: V = average seepage velocity
K = hydraulic conductivity
n = effective porosity
I = average hydraulic gradient

Using a hydraulic conductivity of 4.34 ft/day, a hydraulic gradient of 0.003 ft/ft, an inferred effective porosity value of 0.30, and Darcy's law, the groundwater seepage velocity across the site was calculated at .0434 ft/day or 15.84 ft per year. However, the reversal in flow direction with tidal influences likely results in a lower net velocity.

3.2 SOIL SCREENING RESULTS

Soil vapor screening methods and sampling locations for headspace analyses are discussed in Section 2.4.1. Results of the soil vapor survey are listed on Table 3-2. A total of 10 samples were screened. No instrument readings were greater than background levels. These findings are typical of soil screening results for soils with impacted with TRPH.

**Table 3-2
Soil Vapor Results**

Site Assessment Report , Site 351-1
Naval Station Mayport
Mayport, Florida

Soil Boring Number	Date of Measurement	Sample Depth (ft bls)	Headspace Readings (ppm)		
			Total Organic Reading	Carbon Filtered Reading	Net Reading
SB-01	8/11/2005	1	0	0	0
		3	0	0	0
SB-02	8/11/2005	1	0	0	0
		3	0	0	0
SB-03	8/11/2005	1	0	0	0
		3	0	0	0
SB-04	8/12/2005	1	0	0	0
		3	0	0	0
SB-05	8/12/2005	1	0	0	0
		3	0	0	0
SB-06	8/12/2005	1	0	0	0
		3	0	0	0
SB-07	3/20/2005	0.5	0	0	0
		1.5	0	0	0
		3	0	0	0
SB-08	3/20/2005	0.5	0	0	0
		1.5	0	0	0
		3	0	0	0
SB-09	3/20/2005	0.5	0	0	0
		1.5	0	0	0
		3	0	0	0
SB-10	3/20/2005	0.5	0	0	0
		1.5	0	0	0
		3	0	0	0

Notes: ppm = parts per million

3.3 SOIL SAMPLE ANALYTICAL RESULTS

3.3.1 Mobile Laboratory

On August 12, 2005, two soil samples (SB04 and SB05) collected from 3 ft bls were analyzed by the mobile laboratory. Samples selected for analysis were determined from field screening results as described in Section 2.4.1. No targeted constituent was reported at a concentration exceeding instrument detection limits. Soil constituents screened included BTEX, MTBE, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. A copy of KB Laboratories' analytical report is provided in Appendix F.

3.3.2 Fixed-Base Laboratory

Soil samples SB04 and SB05 were collected on August 12, 2006, for analysis by a fixed-base laboratory at a depth of 3 ft bls from similar locations of samples analyzed by the mobile laboratory, which did not record any instrument detections. The samples locations were selected because they are near the known location of the former sump pit. The samples were analyzed for the GAG/KAG analysis (VOC, PAH, and TRPH) which includes additional analysis (PAH and TRPH) not analyzed by the mobile laboratory. Based on the sample results a TRPH value of 750 milligrams per kilogram (mg/kg) was recorded for sampled SB-05 which exceeds the residential and leachability SCTLs of 460 mg/kg and 340 mg/kg, respectively. No other constituent analyzed was greater than instrument background levels. Similar findings at this sump were recorded during the October 2004 fuel line and sump removal/installation project completed by J2 Engineering, Inc.

Additional soil samples SB07, SB08, SB09, and SB10 were collected and submitted to ENCO from locations that surrounded SB-05 in the four cardinal directions, delineating and pre-characterizing the impacted soil area for removal. The additional soil samples were collected on March 22, 2006, and analyzed for TRPH, the constituent of concern. TRPH was detected in all four samples although the concentrations were below the residential and leachability SCTL values. Based on the results of the four samples, the area of impacted soil was determined to be approximately 6 ft by 5 ft and assumed to continue to the groundwater table which is about 5.0 ft bls. Laboratory detected constituents are listed in Table 3-3, and a figure showing the exceedance is presented at Figure 3-3. The complete laboratory report submitted by ENCO is provided as Appendix G.

Table 3-3
Fixed-Base Laboratory Soil Analytical Results

Site Assessment Report, Site 351-1
Naval Station Mayport
Mayport, Florida

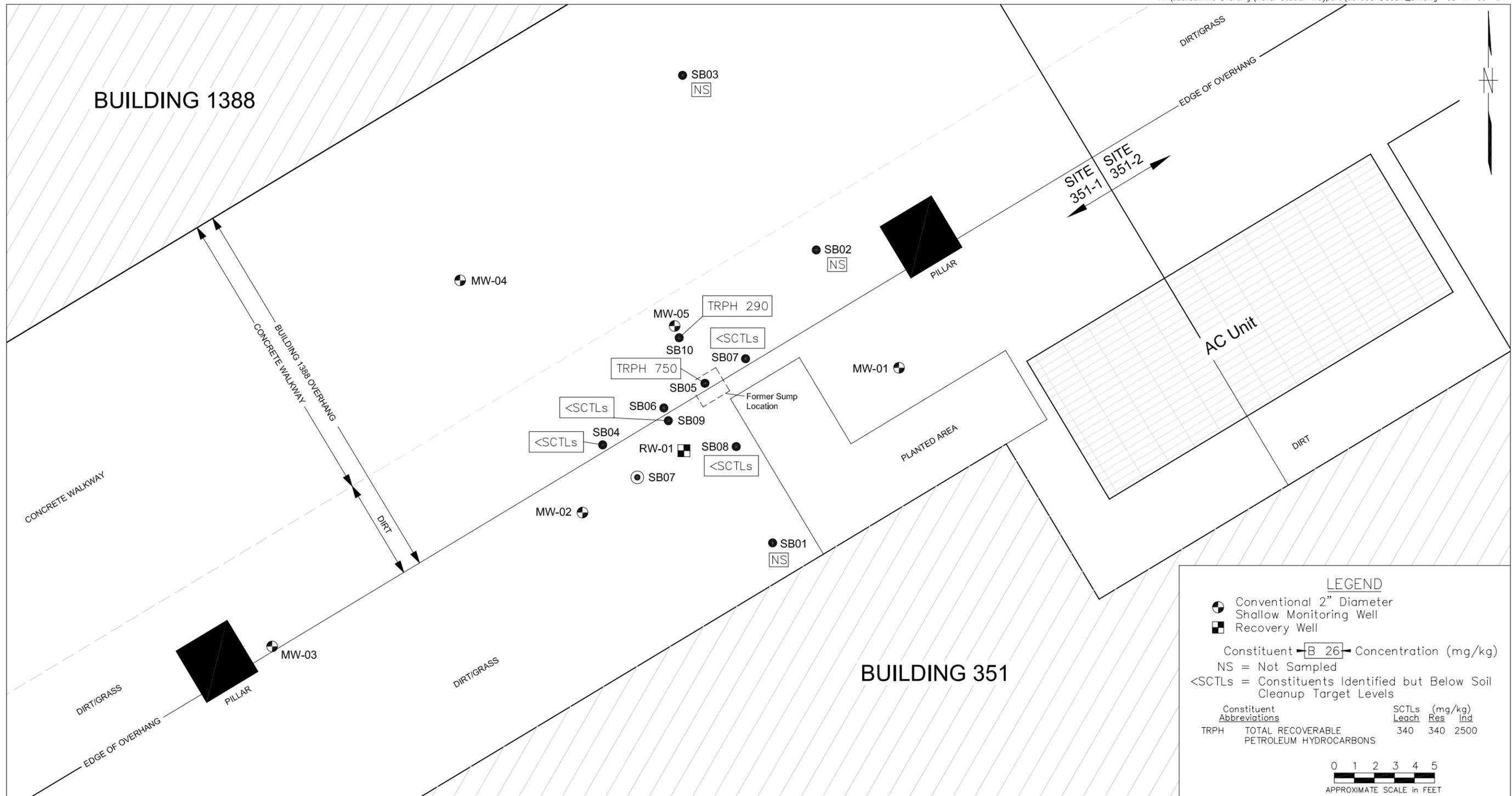
Compound	FDEP SCTLs			Sample ID and Sample Date					
				SB04-03	SB05-03	SB07-03	SB08-03	SB09-03	SB10-03
	Residential	Industrial	Leachability	08/12/05	08/12/05	03/22/06	03/22/06	03/22/06	03/22/06
Volatile Organic Compounds (USEPA Method 8260) (mg/kg)									
BENZENE	1.2	1.7	0.007	0.001 U	0.001 U	NM	NM	NM	NM
ETHYLBENZENE	1500	9200	0.6	0.001 U	0.001 U	NM	NM	NM	NM
M-XYLENE & P-XYLENE	130	700	0.2	0.002 U	0.002 U	NM	NM	NM	NM
METHYL TERT-BUTYL ETHER	4400	24000	0.09	0.001 U	0.001 U	NM	NM	NM	NM
O-XYLENE	130	700	0.2	0.001 U	0.001 U	NM	NM	NM	NM
TOLUENE	7500	60000	0.5	0.001 U	0.001 U	NM	NM	NM	NM
Semivolatile Organic Compounds (USEPA Method 8270 SIM) (mg/kg)									
1-METHYLNAPHTHALENE	200	1800	3.1	0.035 U	0.035 U	NM	NM	NM	NM
2-METHYLNAPHTHALENE	210	2100	8.5	0.035 U	0.035 U	NM	NM	NM	NM
BENZO(A)PYRENE	0.1	0.7	8	0.035 U	0.035 U	NM	NM	NM	NM
FLUORANTHENE	3200	59000	1200	0.035 U	0.035 U	NM	NM	NM	NM
FLUORENE	2600	33000	160	0.035 U	0.035 U	NM	NM	NM	NM
NAPHTHALENE	55	300	1.2	0.035 U	0.035 U	NM	NM	NM	NM
PHENANTHRENE	2200	36000	250	0.035 U	0.035 U	NM	NM	NM	NM
PYRENE	2400	45000	880	0.035 U	0.035 U	NM	NM	NM	NM
Petroleum Hydrocarbons (FL-PRO) (mg/kg)									
HYDROCARBONS (C8-C40)	460	2700	340	52	750	15.9	18.8	18.3	290

Notes:

Bold values are in excess of SCTLs, Chapter 62-770, FAC (April 13, 1999).

U = nondetected value

NM = not measured



LEGEND

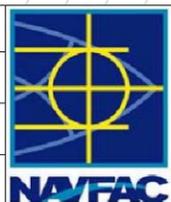
- Conventional 2" Diameter Shallow Monitoring Well
- Recovery Well
- Constituent **B 26** Concentration (mg/kg)
- NS = Not Sampled
- <SCTLs = Constituents Identified but Below Soil Cleanup Target Levels

Constituent Abbreviations	SCTLs (mg/kg)	Leach	Res	Ind
TRPH	TOTAL RECOVERABLE PETROLEUM HYDROCARBONS	340	340	2500

0 1 2 3 4 5
APPROXIMATE SCALE in FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK 8/19/05
 CHECKED BY
 DATE
 COST/SCHED-AREA
 SCALE AS NOTED



FIXED-BASE LABORATORY
 SOIL ANALYTICAL RESULTS
 SITE 351-1
 SITE ASSESSMENT REPORT
 NAVAL STATION MAYPORT
 MAYPORT, FLORIDA

CONTRACT NO.	5863
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 3-3
REV.	0

3.4 GROUNDWATER ANALYTICAL RESULTS

3.4.1 Mobile Laboratory

Prior to the installation of new wells the groundwater was collected from six existing wells and four DTP sample locations (as described in section 2.5.1) for analysis by the on-site mobile laboratory for BTEX, MTBE, and the three naphthalenes. Samples from the two source wells RW-01 and MW-05 recorded the only GCTL exceedances. The GCTL exceedances for monitoring well MW-05 include all analyzed constituents (BTEX, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene) analyzed by the mobile laboratory. The only other groundwater sample collected for screening which had an exceedance was obtained from recovery well RW01 which recorded an exceedance of 1-methylnaphthalene with a concentration of 28.1 µg/L. Monitoring well MW05 is the closest source well downgradient relative to the release from the fuel line. One vertical extent sample was collected from SB07V located adjacent to the former sump area. This is the closest point to the source area where the DPT rig could be positioned because the overhang of the walkway cover restricted the rig's use. The sample collected from this sample point was obtained from a screened interval of 16 ft to 20 ft bls. The intent was to push to an approximated depth of 40 ft bls but refusal was met at 20 ft bls depth due to very fine tightly packed sands. The 16 to 20 ft bls, vertical extent groundwater sample collected did identify groundwater petroleum constituents, but none exceeded the GCTL values.

A summary of detected concentrations is listed in Table 3-4 and illustrated on Figure 3-4. The analytical report submitted by KB Laboratories is included with the mobile laboratory soil analytical results in Appendix F.

3.4.2 Fixed-Base Laboratory

TtNUS personnel collected groundwater samples from the seven wells at Site 351-1 on the following dates: December 29, 2005; January 18 and 19, 2006; and February 9, 2006. All groundwater samples were collected from five previously installed wells (MW01–MW05), newly installed MW06, and a temporarily installed well TMW22. The seven groundwater samples were submitted to ENCO for analysis of GAG/KAG constituents of which two samples (MW01 and MW02) were non detect, three samples (MW03, MW04, and TMW22) had trace detections, and two samples MW05 (source area) and MW06 (down gradient) had one or more exceedances to the GCTLs. Three groundwater constituents that exceeded the GCTLs were benzene (1 µg/L), total xylenes (32.17 µg/L), and naphthalene (14.2 µg/L). One GCTL exceedance for groundwater analyzed from MW06 was benzene (1.14 µg/L). The groundwater GCTLs for constituents identified in the groundwater analysis are as follows: benzene, 1 µg/L; naphthalene, 14 µg/L; and total xylenes, 30 µg/L. Both wells (MW05 and MW06) are located down gradient of the former sump location with the furthest down gradient well sampled being TWM22.

TWM22 was positioned down gradient relative to the other wells and approximately located 30 ft inside the southern wall of the building. A summary of detected compounds is presented in Table 3-5 and a summary of exceedances is illustrated on Figure 3-5. Copies of the fixed-base laboratory reports are provided in Appendix H.

Table 3-4
Mobile Laboratory Groundwater Analytical Results

Site Assessment Report, Site 351-1
Naval Station Mayport
Mayport, Florida

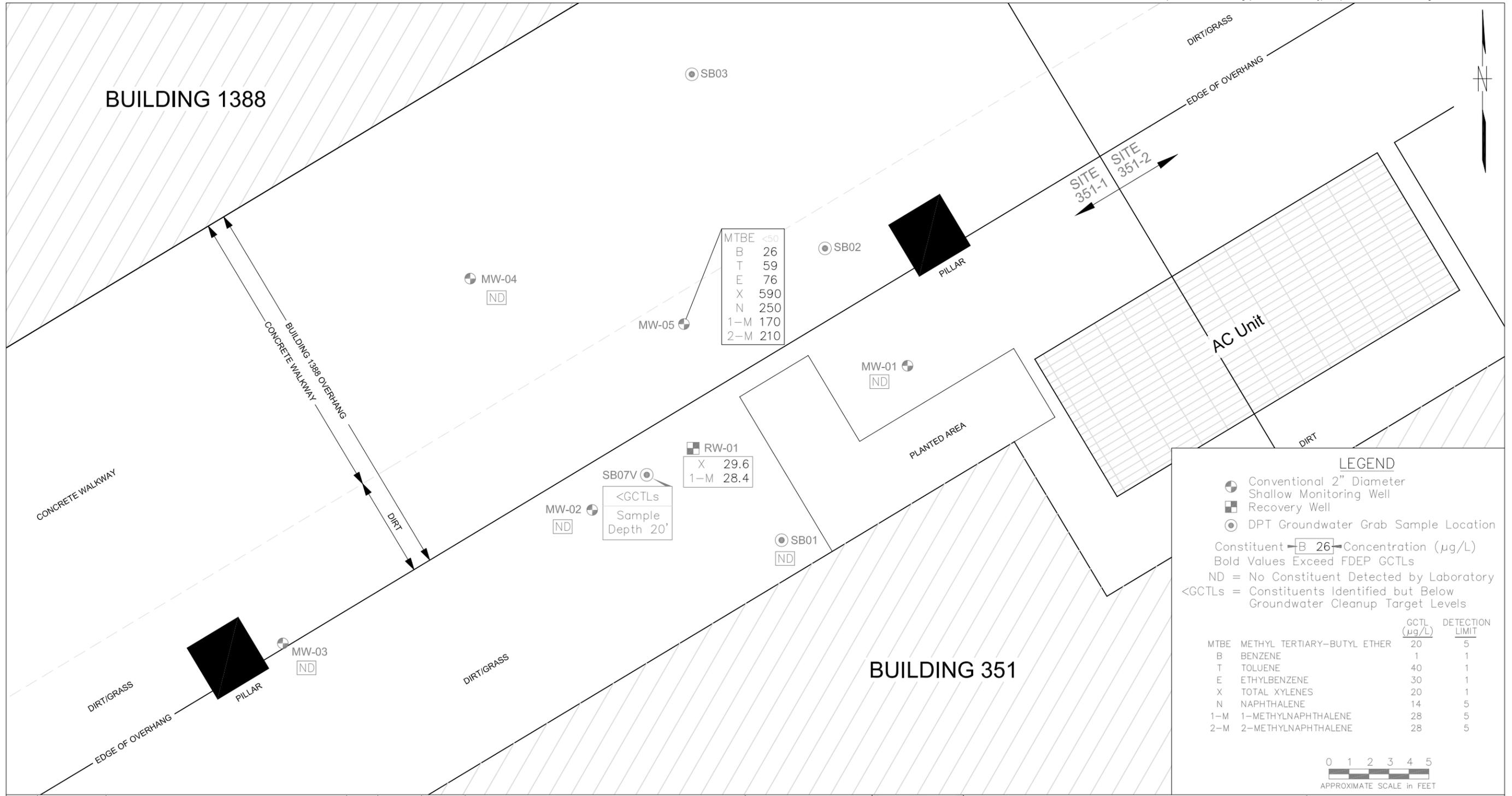
Compound	FDEP GCTL 1	Sample ID (MPT-351-) and Date				
		MW-01	MW-02	MW-03	MW-04	MW-05
		08/10/05	08/10/05	08/10/05	08/10/05	08/10/05
PAHs (USEPA Method 8260) (µg/L)						
1-METHYLNAPHTHALENE	28	5 U	5 U	5 U	5 U	170
2-METHYLNAPHTHALENE	28	5 U	5 U	5 U	5 U	210
BENZENE	1	1 U	1 U	1 U	1 U	26
ETHYLBENZENE	30	1 U	1 U	1 U	1 U	76
M+ P-XYLENES	20	1 U	1 U	1 U	1 U	360
METHYL TERT-BUTYL ETHER	20	5 U	5 U	5 U	5 U	50 U
NAPHTHALENE	14	5 U	5 U	5 U	5 U	250
O-XYLENE	20	1 U	1 U	1 U	1 U	230
TOLUENE	40	1 U	1 U	1 U	1 U	59
TOTAL XYLENES	20	1 U	1 U	1 U	1 U	580

Compound	FDEP GCTL 1	Sample ID (MPT-351-) and Date				
		S01	SB02	SB03	SB07	RW-01
		08/11/05	08/11/05	08/11/05	08/12/05	08/11/05
PAHs (USEPA Method 8260) (µg/L)						
1-METHYLNAPHTHALENE	28	5 U	5 U	5 U	7.4	28.4 J
2-METHYLNAPHTHALENE	28	5 U	5 U	5 U	9.2	5 U
BENZENE	1	1 U	1 U	1 U	1 U	1 U
ETHYLBENZENE	30	1 U	1 U	1 U	1 U	1 J
M+ P-XYLENES	20	1 U	1 U	1 U	2	1.8 J
METHYL TERT-BUTYL ETHER	20	5 U	5 U	5 U	5 U	5 U
NAPHTHALENE	14	5 U	5 U	5 U	5 U	5 J
O-XYLENE	20	1 U	1 U	1 U	2.1	10.8 J
TOLUENE	40	1 U	1 U	1 U	1 U	1 U
TOTAL XYLENES	20	1 U	1 U	1 U	4.1	12.6 J

Notes:

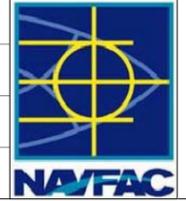
¹Chapter 62,770, FAC (April 30, 1999)
Exceedances are **bold**.

J = estimated value
U = below detection limit



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 8/19/05
 CHECKED BY DATE
 COST/SCHED-AREA
 SCALE AS NOTED



MOBILE LABORATORY
 GROUNDWATER ANALYTICAL RESULTS
 SITE 351-1
 SITE ASSESSMENT REPORT
 NAVAL STATION MAYPORT
 MAYPORT, FLORIDA

CONTRACT NO.	5863
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 3-4
REV.	0

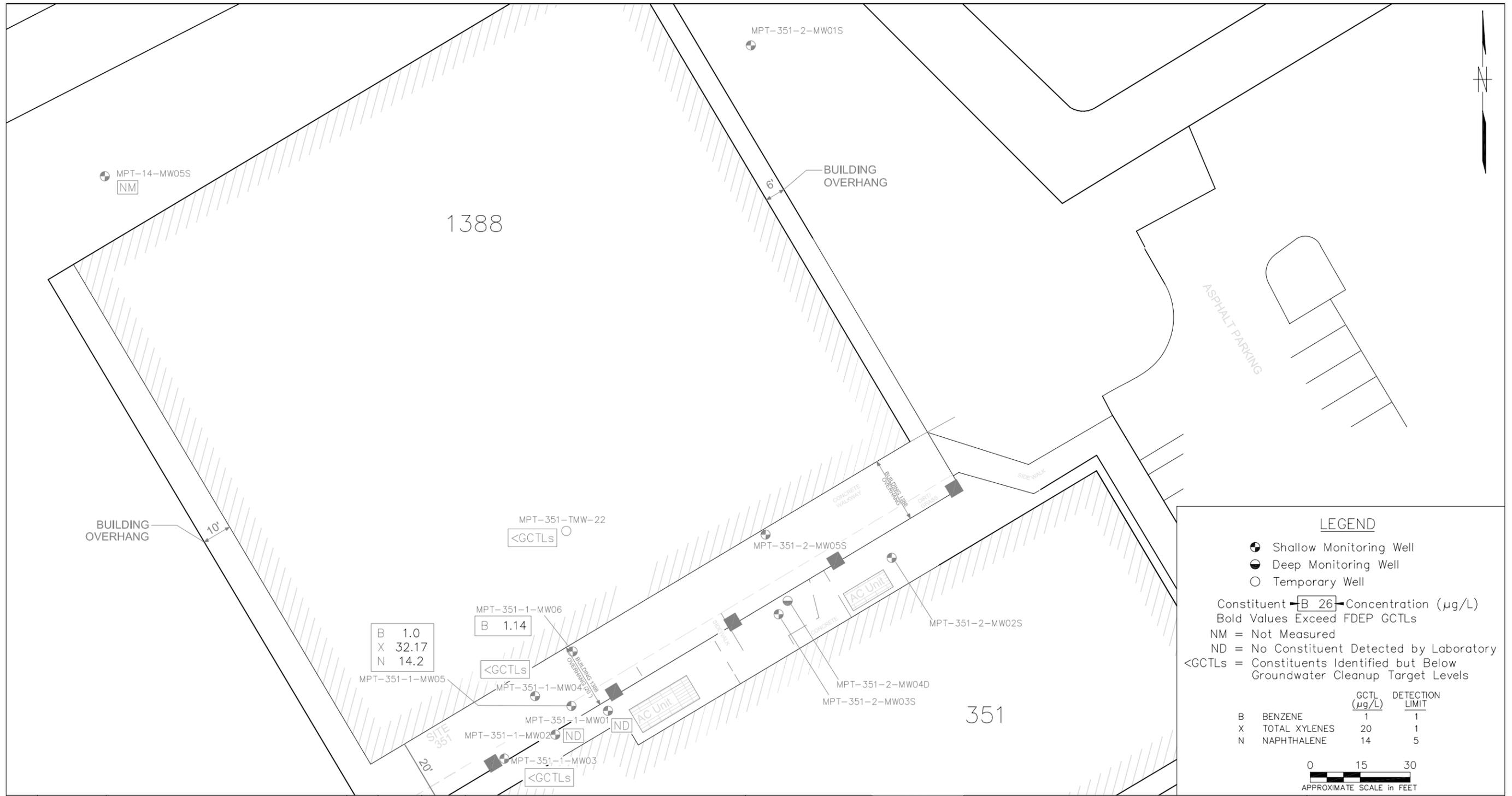
Table 3-5
Fixed-Base Laboratory Groundwater Analytical Results

Site Assessment Report, Site 351-1
Naval Station Mayport
Mayport, Florida

Compound	FDEP GCTL	Sample ID (MPT-351-) and Sample Date						
		MW01S	MW02S	MW03S	MW04S	MW05S	MW06S	TMW22
		01/18/06	01/18/06	01/18/06	01/19/06	01/19/06	02/09/06	12/29/05
Volatile Organic Compounds (USEPA Method 8260B) (µg/L)								
BENZENE	1	1 U	1 U	1 U	1 U	1	1.14	1 U
ETHYLBENZENE	30	1 U	1 U	1 U	1 U	8.1	0.38 J	1 U
M+P-XYLENES	20	2 U	2 U	2 U	2 U	31	0.3 U	2 U
O-XYLENE	20	1 U	1 U	1 U	1 U	1.17	0.2 U	1 U
TOLUENE	40	1 U	1 U	1 U	1 U	0.23 J	0.2 U	1 U
TOTAL XYLENES	20					32.17		1 U
Polynuclear Aromatic Hydrocarbons (µg/L)								
1-METHYLNAPHTHALENE	28	0.1 U	0.1 U	3.08	0.1 U	23.7	0.06 J	0.5 U
2-METHYLNAPHTHALENE	28	0.1 U	0.1 U	0.1 U	0.1 U	22.1	0.02 U	0.5 U
ACENAPHTHENE	20	0.1 U	0.1 U	0.36	0.1 U	1.29	0.23	0.1 U
ANTHRACENE	2100	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.02 U	0.1 U
FLUORANTHENE	280	0.1 U	0.1 U	0.1 U	0.1 U	0.08 J	0.19	0.1 U
FLUORENE	280	0.1 U	0.1 U	0.58	0.1 U	3.46	0.02 U	0.1 U
NAPHTHALENE	14	0.1 U	0.1 U	0.16	0.1 U	14.2	0.25	0.1 U
PHENANTHRENE	210	0.1 U	0.1 U	0.1 U	0.1 U	3.96	0.21	0.5 U
PYRENE	210	0.1 U	0.1 U	0.1 U	0.1 U	0.95	0.17	0.1 U
Petroleum Hydrocarbons (mg/L)								
TOTAL PETROLEUM HYDROCARBONS (TPH)								
TPH (C08-C40)	5	0.17 U	0.17 U	0.424	0.262	3.49	0.544	1.6

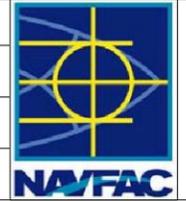
Notes:

mg/L = milligrams per liter



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK	DATE 8/25/05
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	



FIXED-BASED GROUNDWATER ANALYTICAL RESULTS
 SITE 351
 SITE ASSESSMENT REPORT
 NAVAL STATION MAYPORT
 MAYPORT, FLORIDA

CONTRACT NO. 00103	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-5	REV. 0

4.0 INTERIM REMOVAL ACTION

4.1 SOIL DELINEATION

Soil sample SB05 was collected on August 12, 2006, for analysis by a fixed-base laboratory at a depth of 3 ft bls from the location of the former sump pit. The sample were analyzed for the GAG/KAG analysis (VOC, PAH, and TRPH) Based on the sample results a TRPH value of 750 mg/kg was recorded for sample SB-05 which exceeds the residential and leachability SCTLs of 460 mg/kg and 340 mg/kg, respectively. No other constituent analyzed was greater than instrument background levels. Similar findings at this sump were recorded during the October 2004 fuel line and sump removal/installation project completed by J2 Engineering, Inc.

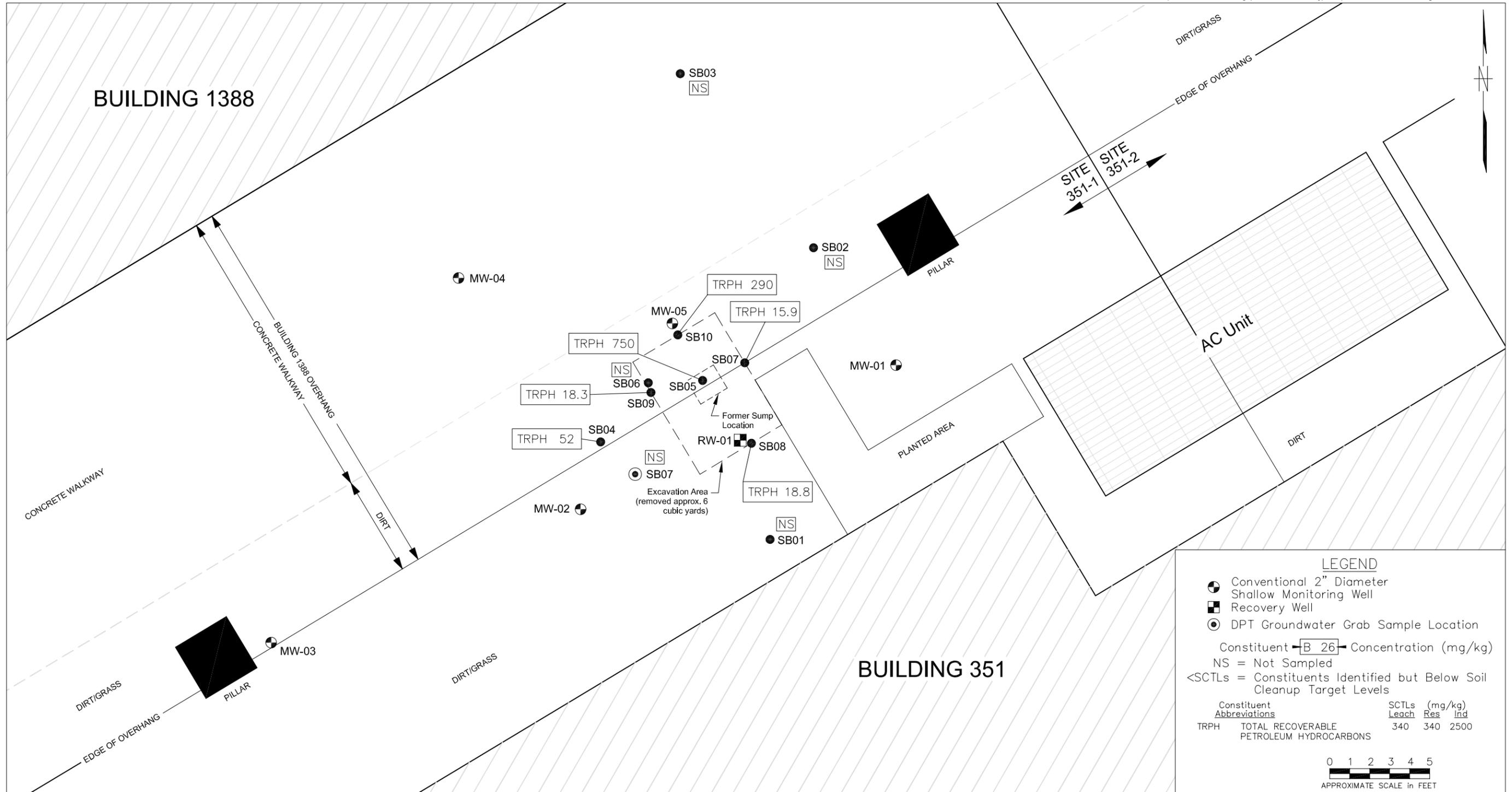
On March 22, 2006, four additional soil samples (SB07, SB08, SB09, and SB10) were collected and submitted to ENCO from locations that surrounded SB-05 in the four cardinal directions, delineating and pre-characterizing the impacted soil area for removal. Based on the results of SB05 the COC was TRPH. Although TRPH was detected in the four samples the concentrations are below the residential and leachability SCTL values. The area outlined by the four samples is approximately 6 ft by 5 ft and will be assumed to continue to the groundwater table which is about 5.0 ft bls. Laboratory detected constituents are listed in Table 3-3, and a figure showing the exceedance is presented at Figure 3-3. The complete laboratory report submitted by ENCO is provided as Appendix G.

4.2 SOIL EXCAVATION AND DISPOSAL

Soil at the location of the former sump was excavated January 7, 2007, by Fueling Components, Inc. of Jacksonville, Florida and supervised by a TtNUS representative. The excavation was 5ft by 6ft and 5 ft in depth which extended to the top of the water table. Approximately 6 cubic yards of soil were removed and placed on and covered by Visqueen to await disposal. Once the TRPH-impacted soil was excavated, the hole was backfilled with clean fill and compacted to grade. Two utilities, a communication line in conduit and the newly installed fuel oil line, crossed though the dig area. Supports were constructed to minimize load strain on the utilities while they were suspended in the excavation. No stained soil was observed during the excavation. Pictures of the excavation are provided in Appendix H, and a site diagram of the surface area which the excavation covered is provided as Figure 4-1.

On January 8, 2007, soil from the excavation of sites 351-1 and 351-2 were removed for disposal by Soil Remediation, Inc. of Kingsland, Georgia, a State licensed soil incineration facility. Manifests dated January 8, 2007, for the soil removed on from sites at Building 351, 351-1, and 351-2 are

provided since the soil was not manifested as separate sites. Diane Racine from the NAVSTA Mayport Environmental Department was present to sign the manifests and copies are provided in Appendix I.



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY	DATE
LLK	8/19/05
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	



SOIL EXCAVATION AREA
AND SOIL ANALYTICAL RESULTS
SITE 351-1
SITE ASSESSMENT REPORT
NAVAL STATION MAYPORT
MAYPORT, FLORIDA

CONTRACT NO.	5863
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	FIGURE 4-1
REV.	0

5.0 DISCUSSION

The investigation was centered on the western side of a walkway area between Buildings 351 and 1388 where a fuel release from the same fuel line that ruptured in 1999, ruptured again during the winter of 2003 or the spring of 2004 filling a sump with free product. The second release has impacted both the soil and groundwater.

The first remedial action took place during 1999 when the first of two fuel line releases occurred in the current area of Site 351-1. As part of the action to remediate the release, approximately 7 tons of soil was removed from around the sump and fuel line removing all "excessively contaminated" soil from the release area. The most recent release occurred again at the sump area of Site 351-1 between October 30, 2003, and March 15, 2004. During October 2004, the removal of the sumps and associated fuel line was completed although no soil was removed. As part of the line closure, soil below the sump and fuel lines were sampled for GAG/KAG analysis with the results identifying a release of TRPH in excess of the SCTLs. As part of this investigation a TtNUS representative collected two soil samples from the sump area on that were also analyzed for GAG/KAG. Based on the sample results, a TRPH value of 750 mg/kg was recorded for sampled SB05, which exceeds the residential and leachability SCTLs of 460 mg/kg and 340 mg/kg, respectively. Four additional samples (SB07, SB08, SB09, and SB10) were collected in positions that collectively encircled the SB05 sample location and were analyzed for TRPH. The soil impacted area was delineated using fixed-base laboratory analysis which defined the area of impacted soil which was centered on the former fuel line sump area. This area was approximately 5 ft by 6 ft in diameter and extended to the water table which is approximately 5.0 ft bls. The volume of impacted soil measured approximately 6 cubic yards and was excavated January 7, 2007, and shipped for disposal on January 8, 2007. The interim soil removal abated all known soil impacts at site 351-2 leaving groundwater impacts as the only media of concern.

In addition to the fuel line release impacting the soil, groundwater has also been impacted and the vertical and horizontal extent has been defined. Groundwater sampled from well MW05, the nearest well to the former sump location, contained three constituents exceeding the GCTLs which include benzene (1.0 µg/L), naphthalene (14.2 µg/L), and xylenes (32.17 µg/L). A benzene concentration of 1.4 µg/L was also recorded in groundwater sampled from well MW06, which is downgradient of the former sump and well MW05. Petroleum constituents were identified in trace concentrations in three wells; MW03, MW04, and TMW22. No other well samples analyzed had readings above instrument detection limits. One vertical extent sample collected for mobile laboratory analysis from the screened interval of 16 ft to 20 ft bls was below the GCTL concentrations for all analyzed constituents. The COCs (benzene,

naphthalene, and xylenes) identified in the groundwater analysis from the fixed-base laboratory are the same constituents analyzed by the mobile laboratory, and all detections are below NADCs.

The groundwater flow of the surficial aquifer is multi-directional, but historically the flow trend is towards the St. Johns River in the northern direction. Since the site is positioned at the delta of the St. Johns River where it empties into the Atlantic Ocean, the groundwater is expected to be influenced by the changing tides.

6.0 SUMMARY

A SA was performed at Site 351-1, NAVSTA Mayport, in which soil samples were field screened with an OVA-FID for organic vapor content, and soil and groundwater samples were analyzed by mobile and fixed-base laboratories for GAG and KAG constituents per Chapter 62-770, FAC. The investigation was centered on a former fuel line sump area where an unknown volume of fuel was released between the dates of October 30, 2003, and March 15, 2004. The depth to groundwater at the site is approximately 5.0 ft bls and directional groundwater flowed in the northerly direction. Historically the groundwater flows in a northerly direction, towards the St. Johns River, and is influenced by the tide. Stormwater runoff from Building 351 flows away from the site and is channeled into ditches that flow north towards the St. Johns River. No supply wells are within ½ mile of the site.

The field portion of the investigation began by collecting soil above the water table to a depth of 3 ft bls at the 10 boring locations and field screened for organic vapor content with an OVA-FID. No “excessively contaminated soil” per Chapter 62-770, FAC, was identified. Similar soils that were screened by the OVA were also submitted to a mobile laboratory for screening for BTEX, MTBE, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. No detections above instrument detection levels were recorded.

Contaminated soil, in excess of the SCTLs as defined by Chapter 62-770, FAC, is present as verified by laboratory analytical results at the area of the former sump. The GAG/KAG constituents were the analytical group analyzed. The constituent of concern in analyzed soil samples was TRPH which has impacted an area approximately 5 ft by 6 ft in diameter and extends to the water table approximately 5.0 ft bls as defined by soil samples SB07 through SB10. These samples form the perimeter of the TRPH impacted area, pre-characterizing the soil to be excavated as an IRA.

On January 7, 2007, the pre-characterized TRPH-impacted soil was excavated, and the impacted soil was collected for disposal at a State licensed facility. On January 8, 2007, the impacted soil was transported by Soil Remediation, Inc. to its self-operated State licensed incineration facility.

Concentrations exceeding GCTLs were reported in 2 of 10 groundwater grab samples analyzed by the mobile laboratory during the preliminary DPT assessment. All analyzed constituents (BTEX, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and MTBE) were identified in groundwater analyzed from MW05, and one constituent (1-methylnaphthalene) was identified in a sample analyzed from RW-01. One vertical extent sample collected for analysis from the screened interval of 16 ft to 20 ft bls was below the GCTL concentrations for the analyzed constituents.

Fixed-base analysis of groundwater for GAG/KAG constituents were collected from six monitoring wells located in the walkway area and one temporary well installed down gradient inside the building. Groundwater collected from monitoring wells MW05 and MW06 contained GCTL exceedances. Well MW05 exceedances were benzene 1.0 µg/L, naphthalene 14.2 µg/L, and xylenes 32.17 µg/L, and the well MW06 exceedance was benzene at 1.4 µg/L. No other groundwater samples analyzed from the seven wells exceeded any GCTLs. The area of impacted water originates from the former sump located approximately 3 ft south of monitoring well MW-05. The area of groundwater impact from the fuel line release is estimated to be possibly 30 ft in length.

7.0 RECOMMENDATIONS

Due to the lack of free product at the site and since groundwater COCs are below NADC threshold values, TtNUS recommends the continued monitoring of the site. To accommodate the requirement per Chapter 62-770.690, FAC, (source area and down gradient wells area required) wells, MW-05 (source area), MW-04 and MW-06 (immediately downgradient of source), should be sampled quarterly as part of the post-active remediation MONA program. The time frame for monitoring will be five years with a minimum of one year of monitoring. Quarterly monitoring may be terminated if the last two quarters (3rd and 4th) of the first year are below the GCTLs or two sequential quarterly monitoring events (after the first year) are below the GCTLs. An estimation of annual milestones for a period of five years for the reduction of concentrations for benzene, total xylenes, and naphthalene is provided in Table 7-1, which also includes the estimated time required to achieve “No Further Action” status pursuant to Chapter 62-770.680, FAC.

**Table 7-1
Monitoring Milestone Objectives**

Site Assessment Report, Site 351-1
Naval Station Mayport
Mayport, Florida

Period	Compound		
	Naphthalene	Benzene	Total Xylenes
End of Year 1	14.1	1.3	31.0
End of Year 2	14.0	1.2	30.0
End of Year 3	13.9 **	1.1	29.0 **
End of Year 4	13.8 **	1.0	28.0 **
End of Year 5	13.7 **	0.9 **	27.0 **

Notes:
The GCTL for naphthalene is 14.0 µg/L.
The GCTL for benzene is 1.0 µg/L.
The GCTL for total xylenes is 30.0 µg/L.
** = below GCTL

The groundwater samples collected for this SAR should be considered the first quarterly sample period for Year 1. These additional rounds of sampling will be conducted to complete Year 1 monitoring and an annual report will be generated evaluating the progress of monitored natural attenuation, making a total of four quarterly monitoring events. Three additional rounds of samples shall proceed.

REFERENCES

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

FDEP (Florida Department of Environmental Protection), Standard Operating Procedure DEP-001/92.

FDEP, 1999a. Chapter 62-770, FAC, Petroleum Contamination Cleanup Criteria

FDEP, 1999b. Chapter 62-777, FAC, Contaminant Cleanup Target Levels.

Johnson Controls Hill, 2003. Post Spill Requirements, Spill / Clean Up Report Form for Building 351/1388, Naval Station Mayport, Mayport, Florida. December 23.

Spechler, R.M., 1994. "Saltwater Intrusion and Quality of Water in the Floridan Aquifer System, Northeastern Florida": U.S. Geological Survey Water-Resources Investigations Report 92-4174.

TtNUS (Tetra Tech NUS, Inc.), 2001 Site Assessment Report for Building 351. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina. January.

USACE (United States Army Corps of Engineers), 1992. Contamination Assessment Report, Site 1330, Naval Station Mayport, Mayport, Florida.

USDA (United States Department of Agriculture Soil Conservation Services), 1978. Soil Survey of City of Jacksonville Duval, County Florida.

USEPA (United States Environmental Protection Agency), 1997. Standard Operating Procedures.

USGS (United States Geologic Survey), 1992. USGS Mayport, Florida Quadrangle 7.5 Minute Series, Topographic Quadrangle Maps of Florida: scale 1:24,000.

APPENDIX A
SAR SUMMARY SHEET

APPENDIX B

**J2 ENGINEERING, INC. REPORT
“REPLACEMENT of EXISTING FUEL LINES & DAY TANKS BUILDINGS 1388/351”**

APPENDIX C
SOIL BORING LOGS AND LITHOLOGIC DESCRIPTIONS

APPENDIX D
CONSTRUCTION DIAGRAM

APPENDIX E
GROUNDWATER FIELD SAMPLING DATA SHEETS

APPENDIX F
MOBILE LABORATORY ANALYTICAL RESULTS

APPENDIX G
FIXED-BASE LABORATORY ANALYTICAL RESULTS

Soil - SB04 & SB05

CLIENT : Tetra Tech NUS
ADDRESS: Foster Plaza 7
661 Andersen Dr.
Pittsburgh, PA 15220-2745

REPORT # : JAX51164
DATE SUBMITTED: August 13, 2005
DATE REPORTED : August 23, 2005

PAGE 1 OF 9

ATTENTION: Mr. Mark Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: CTO386

MPT-BLDG 351

08/12/05

JAX51164-1 : MPT-351-SB05-03 @ 10:40
JAX51164-2 : MPT-351-SB04-03 @ 11:00

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER _____

Christina M. Tompkins

ENCO LABORATORIES

REPORT # : JAX51164

DATE REPORTED: August 23, 2005

REFERENCE : CTO386

PROJECT NAME : MPT-BLDG 351

PAGE 2 OF 9

RESULTS OF ANALYSIS

<u>EPA METHOD 8260 - VOLATILE ORGANICS</u>	<u>MPT-351-SB05-03</u>	<u>MPT-351-SB04-03</u>	<u>Units</u>
Methyl tert-butyl ether	1. U D1	1. U D2	ug/Kg
Benzene	1. U D1	1. U D2	ug/Kg
Toluene	1. U D1	1. U D2	ug/Kg
Chlorobenzene	1. U D1	1. U D2	ug/Kg
Ethylbenzene	1. U D1	1. U D2	ug/Kg
m-Xylene & p-Xylene	2. U D1	2. U D2	ug/Kg
o-Xylene	1. U D1	1. U D2	ug/Kg
1,3-Dichlorobenzene	1. U D1	1. U D2	ug/Kg
1,4-Dichlorobenzene	1. U D1	1. U D2	ug/Kg
1,2-Dichlorobenzene	1. U D1	1. U D2	ug/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	100	99	61-128
D8-Toluene	96	100	77-119
Bromofluorobenzene	93	95	60-130
Date Prepared	08/13/05 14:00	08/13/05 14:00	
Date Analyzed	08/23/05 16:25	08/23/05 15:49	

U = Compound was analyzed for but not detected to the level shown.
 D1 = Analyte value determined from a 1:1.07 dilution.
 D2 = Analyte value determined from a 1:1.05 dilution.

ENCO LABORATORIES

REPORT # : JAX51164

DATE REPORTED: August 23, 2005

REFERENCE : CTO386

PROJECT NAME : MPT-BLDG 351

PAGE 3 OF 9

RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

	<u>MPT-351-SB05-03</u>	<u>MPT-351-SB04-03</u>	<u>Units</u>
Naphthalene	35. U	35. U	ug/Kg
2-Methylnaphthalene	35. U	35. U	ug/Kg
1-Methylnaphthalene	35. U	35. U	ug/Kg
Acenaphthylene	35. U	35. U	ug/Kg
Acenaphthene	35. U	35. U	ug/Kg
Fluorene	35. U	35. U	ug/Kg
Phenanthrene	35. U	35. U	ug/Kg
Anthracene	35. U	35. U	ug/Kg
Fluoranthene	35. U	35. U	ug/Kg
Pyrene	35. U	35. U	ug/Kg
Chrysene	35. U	35. U	ug/Kg
Benzo(a)anthracene	35. U	35. U	ug/Kg
Benzo(b)fluoranthene	35. U	35. U	ug/Kg
Benzo(k)fluoranthene	35. U	35. U	ug/Kg
Benzo(a)pyrene	35. U	35. U	ug/Kg
Indeno(1,2,3-cd)pyrene	35. U	35. U	ug/Kg
Dibenzo(a,h)anthracene	35. U	35. U	ug/Kg
Benzo(g,h,i)perylene	35. U	35. U	ug/Kg

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	103	92	10-167
Date Prepared	08/18/05	08/18/05	
Date Analyzed	08/19/05 19:31	08/19/05 19:49	

<u>Miscellaneous</u>	<u>METHOD</u>	<u>MPT-351-SB05-03</u>	<u>MPT-351-SB04-03</u>	<u>Units</u>
Percent Solids	WETS/72	94.1	95.1	%
Date Prepared		08/17/05	08/17/05	
Date Analyzed		08/17/05 15:30	08/17/05 15:30	

U - Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX51164
DATE REPORTED: August 23, 2005
REFERENCE : CTO386
PROJECT NAME : MPT-BLDG 351

PAGE 4 OF 9

RESULTS OF ANALYSIS

<u>EPA METHOD FLPRO - PETROL. RESIDUAL ORG.</u>	<u>MPT-351-SB05-03</u>	<u>MPT-351-SB04-03</u>	<u>Units</u>
Hydrocarbons (C8-C40)	750	52.	mg/Kg
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
o-Terphenyl	105	72	36-140
Nonatriacontane	97	80	29-145
Date Prepared	08/17/05	08/18/05	
Date Analyzed	08/18/05 23:58	08/23/05 13:45	

ENCO LABORATORIES
 REPORT # : JAX51164
 DATE REPORTED: August 23, 2005
 REFERENCE : CTO386
 PROJECT NAME : MPT-BLDG 351

PAGE 5 OF 9

RESULTS OF ANALYSIS

EPA METHOD 8260 -
 VOLATILE ORGANICS

	<u>LAB BLANK</u>	<u>Units</u>
Methyl tert-butyl ether	1. U	ug/Kg
Benzene	1. U	ug/Kg
Toluene	1. U	ug/Kg
Chlorobenzene	1. U	ug/Kg
Ethylbenzene	1. U	ug/Kg
m-Xylene & p-Xylene	2. U	ug/Kg
o-Xylene	1. U	ug/Kg
1,3-Dichlorobenzene	1. U	ug/Kg
1,4-Dichlorobenzene	1. U	ug/Kg
1,2-Dichlorobenzene	1. U	ug/Kg

Surrogate:

	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	98	61-128
D8-Toluene	98	77-119
Bromofluorobenzene	98	60-130
Date Analyzed	08/23/05 06:57	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX51164

DATE REPORTED: August 23, 2005

REFERENCE : CTO386

PROJECT NAME : MPT-BLDG 351

PAGE 6 OF 9

RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

LAB BLANK

Units

Naphthalene	33. U	ug/Kg
2-Methylnaphthalene	33. U	ug/Kg
1-Methylnaphthalene	33. U	ug/Kg
Acenaphthylene	33. U	ug/Kg
Acenaphthene	33. U	ug/Kg
Fluorene	33. U	ug/Kg
Phenanthrene	33. U	ug/Kg
Anthracene	33. U	ug/Kg
Fluoranthene	33. U	ug/Kg
Pyrene	33. U	ug/Kg
Chrysene	33. U	ug/Kg
Benzo (a) anthracene	33. U	ug/Kg
Benzo (b) fluoranthene	33. U	ug/Kg
Benzo (k) fluoranthene	33. U	ug/Kg
Benzo (a) pyrene	33. U	ug/Kg
Indeno (1,2,3-cd) pyrene	33. U	ug/Kg
Dibenzo (a,h) anthracene	33. U	ug/Kg
Benzo (g,h,i) perylene	33. U	ug/Kg

Surrogate:

% RECOV

LIMITS

p-Terphenyl	101	10-167
Date Prepared	08/18/05	
Date Analyzed	08/19/05 17:11	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX51164
DATE REPORTED: August 23, 2005
REFERENCE : CTO386
PROJECT NAME : MPT BLDC 351

PAGE 7 OF 9

RESULTS OF ANALYSIS

EPA METHOD FLPRO -
PETROL. RESIDUAL ORG.

	<u>LAB BLANK</u>	<u>LAB BLANK</u>	<u>Units</u>
Hydrocarbons (C8-C40)	7. U	7. U	mg/Kg

Surrogate:

	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
o-Terphenyl	81	96	36-140
Nonatriacontane	82	100	29-145
Date Prepared	08/17/05	08/18/05	
Date Analyzed	08/19/05 10:43	08/23/05 11:53	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX51164

DATE REPORTED: August 23, 2005

REFERENCE : CTO386

PROJECT NAME : MPT-BLDG 351

PAGE 8 OF 9

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES

REPORT # : JAX51164
 DATE REPORTED: August 23, 2005
 REFERENCE : CTO386
 PROJECT NAME : MPT-BLDG 351

PAGE 9 OF 9

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u>	<u>LCS</u>	<u>MS/MSD</u>	<u>RPD</u>	<u>RPD</u>
	<u>LCS/MS/MSD</u>	<u>LIMITS</u>	<u>LIMITS</u>	<u>MS/MSD</u>	<u>LIMITS</u>
<u>EPA Method 8260</u>					
1,1-Dichloroethene	70/ 42/ 44	59-144	14-137	5	19
Benzene	88/ 86/ 88	67-150	49-130	2	23
Trichloroethene	99/ 94/ 97	69-137	38-134	3	17
Toluene	102/103/103	72-124	55-124	<1	22
Chlorobenzene	112/113/112	75-125	53-130	<1	24
<u>EPA Method 8270</u>					
Naphthalene	83/ 85/ 87	50-104	48-112	2	22
Acenaphthene	80/ 82/ 82	52-109	48-119	<1	31
Benzo(a)pyrene	76/ 78/ 78	41-125	43-136	<1	34
Benzo(g,h,i)perylene	106/110/111	10-168	10-168	<1	48
<u>PETROL. RESIDUAL ORG.</u>					
Hydrocarbons (C8-C40)	96/ * / *	48-118	40-136	*	25
<u>PETROL. RESIDUAL ORG.</u>					
Hydrocarbons (C8-C40)	92/119/120	48-118	40-136	<1	25

* = MS/MSD/RPD is unavailable due to high original analyte concentration.
 < = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference

Environmental Conservation Laboratories, Inc.

4810 Executive Park Court, Suite 211

Jacksonville FL, 32216-6069

Phone: 904.296.3007 FAX: 904.296.6210



www.encolabs.com

Soil SB07- SB10

Tuesday, March 28, 2006

Tetra Tech NUS (BR006)

Attn: Mark Peterson

8640 Philips Highway Suite 16

Jacksonville, FL 32256

**RE: Project Number: 112G00103, Project Name/Desc: Mayport-351-1 CTO#386
ENCO Workorder: B602318**

Dear Mark Peterson,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, March 22, 2006.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Chris Tompkins". The signature is written in a cursive, flowing style.

Chris Tompkins
Project Manager

Enclosure(s)



www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICAL

Client ID: MPT-351-1-SB07-03-032207

Lab ID: B602318-01

Sampled: 03/22/06 12:20

Received: 03/22/06 15:05

Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
FLPRO	04/05/06	05/02/06	03/23/06 05:40	3/24/2006 17:43

Client ID: MPT-351-1-SB08-03-032207

Lab ID: B602318-02

Sampled: 03/22/06 12:30

Received: 03/22/06 15:05

Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
FLPRO	04/05/06	05/02/06	03/23/06 05:40	3/24/2006 18:04

Client ID: MPT-351-1-SB09-03-032207

Lab ID: B602318-03

Sampled: 03/22/06 12:40

Received: 03/22/06 15:05

Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
FLPRO	04/05/06	05/02/06	03/23/06 05:40	3/25/2006 16:32

Client ID: MPT-351-1-SB10-03-032207

Lab ID: B602318-04

Sampled: 03/22/06 12:50

Received: 03/22/06 15:05

Parameter	Hold Date/Time(s)		Prep Date/Time(s)	Analysis Date/Time(s)
FLPRO	04/05/06	05/02/06	03/23/06 05:40	3/24/2006 22:04



www.encolabs.com

SAMPLE DETECTION SUMMARY

Client ID: MPT-351-1-SB07-03-032207	Lab ID: B602318-01			
Analyte	Results/Qual	MRL	Units	Method
TPH (C8-C40)	15.9	6.15	mg/kg dry	FLPRO
Client ID: MPT-351-1-SB08-03-032207	Lab ID: B602318-02			
Analyte	Results/Qual	MRL	Units	Method
TPH (C8-C40)	18.8	6.36	mg/kg dry	FLPRO
Client ID: MPT-351-1-SB09-03-032207	Lab ID: B602318-03			
Analyte	Results/Qual	MRL	Units	Method
TPH (C8-C40)	18.3	6.02	mg/kg dry	FLPRO
Client ID: MPT-351-1-SB10-03-032207	Lab ID: B602318-04			
Analyte	Results/Qual	MRL	Units	Method
TPH (C8-C40)	290 D	62.9	mg/kg dry	FLPRO



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-SB07-03-032207
Lab #: B602318-01
Prep. Method: EPA 3545
Analyzed: 03/24/06 By: rw
Anal. Method: FLPRO
Anal. Batch:
QC Batch: 6C23001

Project: Mayport-351-1 CTO#386
Work Order #: B602318
Matrix: Soil
Unit: mg/kg dry
Dilution Factor: 1
Percent Solids: 92.00

FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	N/A	15.9	6.10	6.15	mg/kg dry
Surrogate Recovery					
		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	4.90	3.62	135 %	29-145
o-Terphenyl	84-15-1	2.16	1.81	119 %	36-140



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-SB08-03-032207
Lab #: B602318-02
Prep. Method: EPA 3545
Analyzed: 03/24/06 By: rw
Anal. Method: FLPRO
Anal. Batch:
QC Batch: 6C23001

Project: Mayport-351-1 CTO#386
Work Order #: B602318
Matrix: Soil
Unit: mg/kg dry
Dilution Factor: 1
Percent Solids: 89.00

FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	18.8	6.30	6.36	mg/kg dry
Surrogate Recovery					
n-Nonatriacontane	7194-86-7	5.27	3.75	141 %	29-145
o-Terphenyl	84-15-1	2.11	1.87	113 %	36-140



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-SB09-03-032207
Lab #: B602318-03
Prep. Method: EPA 3545
Analyzed: 03/25/06 By: rw
Anal. Method: FLPRO
Anal. Batch:
QC Batch: 6C23001

Project: Mayport-351-1 CTO#386
Work Order #: B602318
Matrix: Soil
Unit: mg/kg dry
Dilution Factor: 1
Percent Solids: 94.00

FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C10)	NA	18.3	5.97	6.02	mg/kg dry
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	4.15	3.55	117 %	29-145
o-Terphenyl	84-15-1	1.88	1.77	106 %	36-140



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-SB10-03-032207
Lab #: B602318-04
Prep. Method: EPA 3545
Analyzed: 03/24/06 By: rw
Anal. Method: FLPRO
Anal. Batch:
QC Batch: 6C23001

Project: Mayport-351-1 CTO#386
Work Order #: B602318
Matrix: Soil
Unit: mg/kg dry
Dilution Factor: 10
Percent Solids: 90.00

FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
TPH (C8-C40)	NA	290 D	62.3	62.9	mg/kg dry
Surrogate Recovery					
n-Nonatriacontane	7194-86-7	4.57	3.70	124 %	29-145
o-Terphenyl	84-15-1	2.33	1.85	126 %	36-140

CLIENT : Tetra Tech NUS
ADDRESS: Foster Plaza 7
661 Andersen Dr.
Pittsburg, PA 15220-2745

INVOICE # : JAX51164
DATE SUBMITTED : August 13, 2005
DATE REPORTED : August 23, 2005

CLIENT #: BR006

ATTENTION: Accounts Payable
REFERENCE: MPT-BLDG 351
CTO386

PO #: 1003626

INVOICE

DESCRIPTION	PRICE	QTY	AMOUNT
SW-846 Method 8260 (Volatile Aromatics)	\$ 70.00	X 2	\$ 140.00
8270 (PAH's by Selected Ion Monitoring)	\$ 120.00	X 2	\$ 240.00
FL Method FLPRO (Petrol Residual Org.)	\$ 85.00	X 2	\$ 170.00
ENCO WETS 72 (Percent Solids)	\$ 0.00	X 2	\$ 0.00
TOTAL			\$ 550.00

Please remit payment to :
Environmental Conservation Laboratories, Inc.
10775 Central Port Drive
Orlando, FL 32824

TERMS: NET 30 DAYS

Past Due Balances are subject to a 1.5% per month service charge.

TMW-22

CLIENT : Tetra Tech NUS
ADDRESS: Foster Plaza 7
661 Andersen Dr.
Pittsburgh, PA 15220-2745

REPORT # : JAX54762
DATE SUBMITTED: December 29, 2005
DATE REPORTED : January 6, 2006

PAGE 1 OF 15

ATTENTION: Mr. Mark Peterson

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: CTO 386

12/29/05

JAX54762-1 : TMW-22 @ 09:30
~~JAX54762-2 : TMW-23 @ 11:00~~
~~JAX54762-3 : TMW-24 @ 12:48~~
~~JAX54762-4 : TMW-25 @ 14:15~~

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

PROJECT MANAGER



Christina M. Tompkins

Digitally signed by Christina M.
Tompkins
DN: cn=Christina M.
Tompkins, o=Enviro
Laboratories, c=US
Date: 2006.01.09 16:05:39
-05'00

Christina M. Tompkins

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 2 OF 15

RESULTS OF ANALYSIS

**EPA METHOD 8011 -
EDB & DBCP by GC/ECD**

	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Ethylene Dibromide	0.020 U	0.020 U	ug/L
Dibromochloropropane	0.020 U	0.020 U	ug/L
Date Prepared	01/04/06	01/04/06	
Date Analyzed	01/04/06 20:16	01/04/06 20:34	

**EPA METHOD 8260 -
VOLATILE ORGANICS**

	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Methyl tert-butyl ether	1. U	10	ug/L
Benzene	1. U	31.	ug/L
Toluene	1. U	1. U	ug/L
Chlorobenzene	1. U	1. U	ug/L
Ethylbenzene	1. U	1. U	ug/L
m-Xylene & p-Xylene	2. U	2.	ug/L
o-Xylene	1. U	1. U	ug/L
1,3-Dichlorobenzene	1. U	1. U	ug/L
1,4-Dichlorobenzene	1. U	1. U	ug/L
1,2-Dichlorobenzene	1. U	1. U	ug/L

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	111	107	67-139
D8-Toluene	98	101	80-115
Bromofluorobenzene	100	97	66-131
Date Analyzed	12/30/05 15:58	12/30/05 17:45	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX54762
 DATE REPORTED: January 6, 2006
 REFERENCE : CTO 386

PAGE 3 OF 15

RESULTS OF ANALYSIS

<u>EPA METHOD 8260 -</u> <u>8260 Halocarbons</u>	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Dichlorodifluoromethane	2. U	2. U	ug/L
Chloromethane	1. U	1. U	ug/L
Vinyl Chloride	1. U	1. U	ug/L
Bromomethane	2. U	2. U	ug/L
Chloroethane	2. U	2. U	ug/L
Trichlorofluoromethane	1. U	1. U	ug/L
1,1-Dichloroethene	1. U	1. U	ug/L
Methylene Chloride	5. U	5. U	ug/L
t-1,2-Dichloroethene	1. U	1. U	ug/L
1,1-Dichloroethane	1. U	1. U	ug/L
c-1,2-Dichloroethene	1. U	1. U	ug/L
Chloroform	1. U	1. U	ug/L
1,1,1-Trichloroethane	1. U	1. U	ug/L
Carbon tetrachloride	1. U	1. U	ug/L
1,2-Dichloroethane	1. U	1. U	ug/L
Trichloroethene	1. U	1. U	ug/L
1,2-Dichloropropane	1. U	1. U	ug/L
Bromodichloromethane	0.6 U	0.6 U	ug/L
c-1,3-Dichloropropene	0.2 U	0.2 U	ug/L
t-1,3-Dichloropropene	0.2 U	0.2 U	ug/L
1,1,2-Trichloroethane	1. U	1. U	ug/L
Tetrachloroethene	2. U	2. U	ug/L
Dibromochloromethane	0.4 U	0.4 U	ug/L
Chlorobenzene	1. U	1. U	ug/L
Bromoform	1. U	1. U	ug/L
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	ug/L
1,3-Dichlorobenzene	1. U	1. U	ug/L
1,4-Dichlorobenzene	1. U	1. U	ug/L
1,2-Dichlorobenzene	1. U	1. U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	111	107	67-139
D8-Toluene	98	101	80-115
Bromofluorobenzene	100	97	66-131
Date Analyzed	12/30/05 15:58	12/30/05 17:45	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX54762
 DATE REPORTED: January 6, 2006
 REFERENCE : CTO 386

PAGE 4 OF 15

RESULTS OF ANALYSIS

<u>EPA METHOD 8270 - PAH Compounds by SIM</u>	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Naphthalene	0.5 U	9.	ug/L
2-Methylnaphthalene	0.5 U	6.	ug/L
1-Methylnaphthalene	0.5 U	8.	ug/L
Acenaphthylene	0.1 U	0.1 U	ug/L
Acenaphthene	0.1 U	1.	ug/L
Fluorene	0.1 U	2.	ug/L
Phenanthrene	0.1 U	0.6	ug/L
Anthracene	0.1 U	0.1 U	ug/L
Fluoranthene	0.1 U	0.1 U	ug/L
Pyrene	0.1 U	0.1 U	ug/L
Chrysene	0.1 U	0.1 U	ug/L
Benzo(a)anthracene	0.1 U	0.1 U	ug/L
Benzo(b)fluoranthene	0.1 U	0.1 U	ug/L
Benzo(k)fluoranthene	0.1 U	0.1 U	ug/L
Benzo(a)pyrene	0.1 U	0.1 U	ug/L
Indeno(1,2,3-cd)pyrene	0.1 U	0.1 U	ug/L
Dibenzo(a,h)anthracene	0.1 U	0.1 U	ug/L
Benzo(g,h,i)perylene	0.1 U	0.1 U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	91	80	10-157
Date Prepared	12/30/05	12/30/05	
Date Analyzed	12/30/05 12:39	12/30/05 12:57	

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Lead	6010	0.010 U	0.010 U	mg/L
Date Analyzed		01/04/06 16:38	01/04/06 17:04	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 5 OF 15

RESULTS OF ANALYSIS

EPA METHOD FLPRO -
PETROL. RESIDUAL ORG.

	<u>TMW-22</u>	<u>TMW-23</u>	<u>Units</u>
Hydrocarbons (C8-C40)	2.	6.	mg/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
o-Terphenyl	94	100	33-133
Nonatriacontane	93	87	22-137
Date Prepared	12/30/05	12/30/05	
Date Analyzed	12/30/05 13:12	12/30/05 13:35	

ENCO LABORATORIES
 REPORT # : JAX54762
 DATE REPORTED: January 6, 2006
 REFERENCE : CTO 386

PAGE 6 OF 15

RESULTS OF ANALYSIS

**EPA METHOD 8011 -
 EDB & DBCP by GC/ECD**

	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Ethylene Dibromide	0.020 U	0.020 U	ug/L
Dibromochloropropane	0.020 U	0.020 U	ug/L
Date Prepared	01/04/06	01/04/06	
Date Analyzed	01/04/06 20:51	01/04/06 21:08	

**EPA METHOD 8260 -
 VOLATILE ORGANICS**

	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Methyl tert-butyl ether	1. U	1. U	ug/L
Benzene	1. U	1. U	ug/L
Toluene	1. U	1. U	ug/L
Chlorobenzene	1. U	1. U	ug/L
Ethylbenzene	1. U	1. U	ug/L
m-Xylene & p-Xylene	2. U	2. U	ug/L
o-Xylene	1. U	1. U	ug/L
1,3-Dichlorobenzene	1. U	1. U	ug/L
1,4-Dichlorobenzene	1. U	1. U	ug/L
1,2-Dichlorobenzene	1. U	1. U	ug/L

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	110	110	67-139
D8-Toluene	100	104	80-115
Bromofluorobenzene	97	97	66-131
Date Analyzed	12/30/05 16:34	12/30/05 17:09	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 7 OF 15

RESULTS OF ANALYSIS

EPA METHOD 8260 -
8260 Halocarbons

	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Dichlorodifluoromethane	2. U	2. U	ug/L
Chloromethane	1. U	1. U	ug/L
Vinyl Chloride	1. U	1. U	ug/L
Bromomethane	2. U	2. U	ug/L
Chloroethane	2. U	2. U	ug/L
Trichlorofluoromethane	1. U	1. U	ug/L
1,1-Dichloroethene	1. U	1. U	ug/L
Methylene Chloride	5. U	5. U	ug/L
t-1,2-Dichloroethene	1. U	1. U	ug/L
1,1-Dichloroethane	1. U	1. U	ug/L
c-1,2-Dichloroethene	1. U	1. U	ug/L
Chloroform	1. U	1. U	ug/L
1,1,1-Trichloroethane	1. U	1. U	ug/L
Carbon tetrachloride	1. U	1. U	ug/L
1,2-Dichloroethane	1. U	1. U	ug/L
Trichloroethene	1. U	1. U	ug/L
1,2-Dichloropropane	1. U	1. U	ug/L
Bromodichloromethane	0.6 U	0.6 U	ug/L
c-1,3-Dichloropropene	0.2 U	0.2 U	ug/L
t-1,3-Dichloropropene	0.2 U	0.2 U	ug/L
1,1,2-Trichloroethane	1. U	1. U	ug/L
Tetrachloroethene	2. U	2. U	ug/L
Dibromochloromethane	0.4 U	0.4 U	ug/L
Chlorobenzene	1. U	1. U	ug/L
Bromoform	1. U	1. U	ug/L
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	ug/L
1,3-Dichlorobenzene	1. U	1. U	ug/L
1,4-Dichlorobenzene	1. U	1. U	ug/L
1,2-Dichlorobenzene	1. U	1. U	ug/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	110	110	67-139
D8-Toluene	100	104	80-115
Bromofluorobenzene	97	97	66-131
Date Analyzed	12/30/05 16:34	12/30/05 17:09	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : JAX54762
 DATE REPORTED: January 6, 2006
 REFERENCE : CTO 386

PAGE 8 OF 15

RESULTS OF ANALYSIS

EPA METHOD 8270 -
 PAH Compounds by SIM

	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Naphthalene	0.5 U	0.5 U	ug/L
2-Methylnaphthalene	0.5 U	0.5 U	ug/L
1-Methylnaphthalene	0.5 U	0.5 U	ug/L
Acenaphthylene	0.1 U	0.1 U	ug/L
Acenaphthene	0.1 U	0.1 U	ug/L
Fluorene	0.1 U	0.1 U	ug/L
Phenanthrene	0.1 U	0.1 U	ug/L
Anthracene	0.1 U	0.1 U	ug/L
Fluoranthene	0.1 U	0.1 U	ug/L
Pyrene	0.1 U	0.1 U	ug/L
Chrysene	0.1 U	0.1 U	ug/L
Benzo(a)anthracene	0.1 U	0.1 U	ug/L
Benzo(b)fluoranthene	0.1 U	0.1 U	ug/L
Benzo(k)fluoranthene	0.1 U	0.1 U	ug/L
Benzo(a)pyrene	0.1 U	0.1 U	ug/L
Indeno(1,2,3-cd)pyrene	0.1 U	0.1 U	ug/L
Dibenzo(a,h)anthracene	0.1 U	0.1 U	ug/L
Benzo(g,h,i)perylene	0.1 U	0.1 U	ug/L

<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	79	88	10-157
Date Prepared	12/30/05	12/30/05	
Date Analyzed	12/30/05 13:14	12/30/05 13:32	

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Lead	6010	0.010 U	0.010 U	mg/L
Date Analyzed		01/04/06 17:09	01/04/06 17:17	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX54762
DATE REPORTED: January 6, 2006
REFERENCE : CTO 386

PAGE 9 OF 15

RESULTS OF ANALYSIS

<u>EPA METHOD FLPRO - PETROL. RESIDUAL ORG.</u>	<u>TMW-24</u>	<u>TMW-25</u>	<u>Units</u>
Hydrocarbons (C8-C40)	0.2 U	0.2 U	mg/L
<u>Surrogate:</u>	<u>% RECOV</u>	<u>% RECOV</u>	<u>LIMITS</u>
o-Terphenyl	81	97	33-133
Nonatriacontane	80	98	22-137
Date Prepared	12/30/05	12/30/05	
Date Analyzed	12/30/05 13:57	12/30/05 14:20	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 10 OF 15

RESULTS OF ANALYSIS

**EPA METHOD 8011 -
EDB & DECP by GC/ECD**

	<u>LAB BLANK</u>	<u>Units</u>
Ethylene Dibromide	0.020 U	ug/L
Dibromochloropropane	0.020 U	ug/L
Date Prepared	01/04/06	
Date Analyzed	01/04/06 18:49	

**EPA METHOD 8260 -
VOLATILE ORGANICS**

	<u>LAB BLANK</u>	<u>Units</u>
Methyl tert-butyl ether	1. U	ug/L
Benzene	1. U	ug/L
Toluene	1. U	ug/L
Chlorobenzene	1. U	ug/L
Ethylbenzene	1. U	ug/L
m-Xylene & p-Xylene	2. U	ug/L
o-Xylene	1. U	ug/L
1,3-Dichlorobenzene	1. U	ug/L
1,4-Dichlorobenzene	1. U	ug/L
1,2-Dichlorobenzene	1. U	ug/L

Surrogate:

	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	108	67-139
D8-Toluene	101	80-115
Bromofluorobenzene	103	66-131
Date Analyzed	12/30/05 11:16	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762
 DATE REPORTED: January 6, 2006
 REFERENCE : CTO 386

PAGE 11 OF 15

RESULTS OF ANALYSIS

EPA METHOD 8260 -
8260 Halocarbons

	<u>LAB BLANK</u>	<u>Units</u>
Dichlorodifluoromethane	2. U	ug/L
Chloromethane	1. U	ug/L
Vinyl Chloride	1. U	ug/L
Bromomethane	2. U	ug/L
Chloroethane	2. U	ug/L
Trichlorofluoromethane	1. U	ug/L
1,1-Dichloroethene	1. U	ug/L
Methylene Chloride	5. U	ug/L
t-1,2-Dichloroethene	1. U	ug/L
1,1-Dichloroethane	1. U	ug/L
c-1,2-Dichloroethene	1. U	ug/L
Chloroform	1. U	ug/L
1,1,1-Trichloroethane	1. U	ug/L
Carbon tetrachloride	1. U	ug/L
1,2-Dichloroethane	1. U	ug/L
Trichloroethene	1. U	ug/L
1,2-Dichloropropane	1. U	ug/L
Bromodichloromethane	0.6 U	ug/L
c-1,3-Dichloropropene	0.2 U	ug/L
t-1,3-Dichloropropene	0.2 U	ug/L
1,1,2-Trichloroethane	1. U	ug/L
Tetrachloroethene	2. U	ug/L
Dibromochloromethane	0.4 U	ug/L
Chlorobenzene	1. U	ug/L
Bromoform	1. U	ug/L
1,1,2,2-Tetrachloroethane	0.2 U	ug/L
1,3-Dichlorobenzene	1. U	ug/L
1,4-Dichlorobenzene	1. U	ug/L
1,2-Dichlorobenzene	1. U	ug/L

Surrogate:

	<u>% RECOV</u>	<u>LIMITS</u>
Dibromofluoromethane	108	67-139
D8-Toluene	101	80-115
Bromofluorobenzene	103	66-131
Date Analyzed	12/30/05 11:16	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 12 OF 15

RESULTS OF ANALYSIS

EPA METHOD 8270 -
PAH Compounds by SIM

	<u>LAB BLANK</u>	<u>Units</u>
Naphthalene	0.5 U	ug/L
2-Methylnaphthalene	0.5 U	ug/L
1-Methylnaphthalene	0.5 U	ug/L
Acenaphthylene	0.1 U	ug/L
Acenaphthene	0.1 U	ug/L
Fluorene	0.1 U	ug/L
Phenanthrene	0.1 U	ug/L
Anthracene	0.1 U	ug/L
Fluoranthene	0.1 U	ug/L
Pyrene	0.1 U	ug/L
Chrysene	0.1 U	ug/L
Benzo(a)anthracene	0.1 U	ug/L
Benzo(b)fluoranthene	0.1 U	ug/L
Benzo(k)fluoranthene	0.1 U	ug/L
Benzo(a)pyrene	0.1 U	ug/L
Indeno(1,2,3-cd)pyrene	0.1 U	ug/L
Dibenzo(a,h)anthracene	0.1 U	ug/L
Benzo(g,h,i)perylene	0.1 U	ug/L

Surrogate:

	<u>% RECOV</u>	<u>LIMITS</u>
p-Terphenyl	86	10-157
Date Prepared	12/30/05	
Date Analyzed	12/30/05 12:04	

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>LAB BLANK</u>	<u>Units</u>
Lead	6010	0.010 U	mg/L
Date Analyzed		01/04/06 16:24	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 13 OF 15

RESULTS OF ANALYSIS

EPA METHOD FLPRO -
PETROL. RESIDUAL ORG.

Hydrocarbons (C8-C40)

LAB BLANK

0.2 U

Units

mg/L

Surrogate:

o-Terphenyl

Nonatriacontane

Date Prepared

Date Analyzed

% RECOV

116

112

12/30/05

12/30/05 11:20

LIMITS

33-133

22-137

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JAX54762
DATE REPORTED: January 6, 2006
REFERENCE : CTO 386

PAGE 14 OF 15

LABORATORY CERTIFICATIONS

Laboratory Certification: NELAC:E82277

All analyses reported with this project were analyzed by the facility indicated unless identified below.

ENCO LABORATORIES

REPORT # : JAX54762

DATE REPORTED: January 6, 2006

REFERENCE : CTO 386

PAGE 15 OF 15

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>LCS/MS/MSD</u>	<u>LCS</u> <u>LIMITS</u>	<u>MS/MSD</u> <u>LIMITS</u>	<u>RPD</u> <u>MS/MSD</u>	<u>RPD</u> <u>LIMITS</u>
<u>EPA Method 8011</u>					
Ethylene Dibromide	100/100/ 96	69-137	57-130	4	18
Dibromochloropropane	109/108/108	63-151	60-130	<1	20
<u>EPA Method 8260</u>					
1,1-Dichloroethene	73/102/ 88	58-149	31-145	15	19
Benzene	82/107/ 84	62-135	64-138	*24	10
Trichloroethene	70/ 91/ 70	66-136	47-150	*26	12
Toluene	78/102/ 80	72-126	74-124	*24	13
Chlorobenzene	76/ 99/ 78	77-124	81-125	*24	11
<u>EPA Method 8270</u>					
Naphthalene	70/ 91/ 92	33-98	35-97	1	28
Acenaphthene	68/ 86/ 84	41-104	43-102	2	22
Benzo(a)pyrene	61/ 77/ 78	38-125	37-127	1	19
Benzo(g,h,i)perylene	58/ 83/ 84	10-159	10-173	1	35
<u>TOTAL METALS</u>					
Lead, 6010	107/106/106	82-117	68-126	<1	19
<u>PETROL. RESIDUAL ORG.</u>					
Hydrocarbons (C8-C40)	113/ 98/103	46-126	48-118	5	30

* = One or more of the associated values failed to meet laboratory established limits for precision.

< - Less Than

MS = Matrix Spike

MSD = Matrix Spike Duplicate

LCS = Laboratory Control Standard

RPD = Relative Percent Difference



ENVIRONMENTAL CONSERVATION LABORATORIES

OSARF #

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 • Fax (904) 296-6210

1015 Passport Way
Cary, North Carolina 27513
Ph. (919) 677-1669 • Fax (919) 677-9846

CHAIN OF CUSTODY RECORD

ENCO CompQAP No.: 960038G/0

PROJECT REFERENCE		PROJECT NO.		P.O. NUMBER		MATRIX TYPE		REQUIRED ANALYSIS		PAGE		OF		
STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOLUBLE/SEDIMENT	NONAQUEOUS LIQUID (oil, solvent, etc.)	AIR	SLUDGE	OTHER
1	12/22	9:30	X		TMW-22	X								
2	12/24	11:00	X		TMW-23	X								
3	12/24	12:48	X		TMW-24	X								
4	12/29	14:15	X		TMW-25	X								
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														

STATION	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
	12/29	15:24						

RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS
<i>[Signature]</i>	12/29/05	15:40	<input checked="" type="checkbox"/>		Received on Wet Ice 2.7 °C

STANDARD REPORT DELIVERY
 EXPEDITED REPORT DELIVERY (surcharge)
 Date Due:

REMARKS
 GAC/KAG I
 Qualitative Analytical Lab
 Qualitative Analytical Lab
 Need 8260 Results by Jan 9th 06
 Remainder Analysis as Standard Turnaround time

PROJECT NO.
 P.O. NUMBER
 PHONE 636-6125
 FAX 636-6165
 CLIENT PROJECT MANAGER
 Mark Peterson

PROJECT REFERENCE
 CTD 386
 PROJECT LOC. (Site)
 Jacksonville
 CLIENT NAME
 Tech
 CLIENT ADDRESS (CITY, STATE, ZIP)
 Jacksonville, FL

NUMBER OF CONTAINERS SUBMITTED
 5 3 1
 5 3 1
 5 3 1
 5 3 1

RECEIVED BY (SIGNATURE)
 DATE
 TIME

Wells mw01 - mw05

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OV

nsample MPT-351-EB01-0106
 samp_date 1/19/2006
 lab_id B600438-04
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-EB01-0106
 samp_date 1/19/2006
 lab_id B600438-04
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW01S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.67	J	P
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
M-P-XYLENES	2	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	0.34	J	P
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
M-P-XYLENES	2	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OV

nsample MP-351-MW01S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROETHENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROETHENE	1	U	
1,4-DICHLOROETHENE	1	U	
BEZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
MHP-XYLENES	2	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OV

nsample MPT-351-MW03S-0106
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW03S-0106
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
M+P-XYLENES	2	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
M+P-XYLENES	2	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OV

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	0.2	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	0.4	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	0.2	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	0.2	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	8.11		
M+P-XYLENES	31		
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1.17		
TETRACHLOROETHENE	1	U	
TOLUENE	0.23	J	P
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	0.2	U	

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OS

nsample MPT-351-MW0 S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,2-DIBROMOETHANE	0.02	U	

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,2-DIBROMOETHANE	0.02	U	

nsample MPT-351-MW03S-0106
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,2-DIBROMOETHANE	0.02	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: OS

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1,2-DIBROMOETHANE	0.02	U	

Parameter	Result	Val Qual	Qual Code
1,2-DIBROMOETHANE	0.02	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: PAH

nsample MPT-351-MW01S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW03S-0106
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	0.1	U	
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	0.1	U	
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	3.08		
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.36		
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.58		
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	0.16		
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: PAH

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units UG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	0.1	U	
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

Parameter	Result	Val Qual	Qual Code
1-METHYLNAPHTHALENE	23.7		
2-METHYLNAPHTHALENE	22.1		
ACENAPHTHENE	1.29		
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1		
BENZO(A)ANTHRACENE	0.1	U	
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUOFANTHENE	0.1	U	
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUOFANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.08	J	P
FLUORENE	3.46		
INDENO(1,2,3-CD)PYRENE	0.1	U	
NAPHTHALENE	14.2		
PHENANTHRENE	3.96		
PYRENE	0.95		

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: PET

nsample MPT-351-MW01S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TPH (C08-C40)	0.17	U	

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TPH (C08-C40)	0.17	U	

nsample MPT-351-NW03S-0105
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TPH (C08-C40)	0.424		

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: PET

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units MGL
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TPH (C08-C40)	0.262		

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units MGL
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
TPH (C08-C40)	3.49		

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: M

nsample MPT-351-MW01S-0106
 samp_date 1/18/2006
 lab_id B600438-01
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
LEAD	0.002	U	

nsample MPT-351-MW02S-0106
 samp_date 1/18/2006
 lab_id B600438-02
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
LEAD	0.002	U	

nsample MPT-351-MW03S-0106
 samp_date 1/18/2006
 lab_id B600438-03
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
LEAD	0.002	U	

PROJ_NO: 00103

SDG: B600438 MEDIA: WATER DATA FRACTION: M

nsample MPT-351-MW04S-0106
 samp_date 1/19/2006
 lab_id B600438-05
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
LEAD	0.002	U	

nsample MPT-351-MW05S-0106
 samp_date 1/19/2006
 lab_id B600438-06
 qc_type NM
 units MG/L
 Pct_Solids
 DUP_OF:

Parameter	Result	Val Qual	Qual Code
LEAD	0.002	U	

Environmental Conservation Laboratories, Inc.

4810 Executive Park Court, Suite 211
Jacksonville FL, 32216-6069
Phone: 904.296.3007 FAX: 904.296.6210



Well - MW06

February 17, 2006

Tetra Tech NUS (BR006)
Attn: Mark Peterson
8640 Philips Highway Suite 16
Jacksonville, FL 32256

**RE: Project Number: 112G00103, Project Name/Desc: CTO#386
ENCO Workorder: B601170**

Dear Mark Peterson,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on 2/9/06 2:51:00PM.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

This data has been produced in accordance with NELAC standards (June, 2003). This report shall not be reproduced except in full, without the written approval of the Laboratory.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chris Tompkins
Project Manager

Enclosure(s)

MW06



SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MPT-351-1-MW06-0206

Lab ID: B601170-01

Sampled: 02/09/06 13:48

Received: 02/09/06 14:51

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010B	08/08/06	02/13/06 15:53	2/16/2006 15:59
EPA 8011	02/23/06	02/13/06 14:28	2/13/2006 17:16
EPA 8260B	02/23/06	02/10/06 08:00	2/10/2006 16:24
EPA 8270C	02/16/06	02/13/06 07:27	2/16/2006 12:04
FLPRO	02/16/06	02/13/06 07:32	2/14/2006 00:22



www.encolabs.com

SUMMARY TABLE - SAMPLE DETECTS ONLY

Client ID: MPT-351-1-MW06-0206

Lab ID: B601170-01

Analyte	Results/Qual	MRL	Units	Method
Benzene	1.14	1.00	ug/L	EPA 8260B
Ethylbenzene	0.380 I	1.00	ug/l.	EPA 8260B
C8-C40	0.544	0.170	mg/L	FLPRO
1-Methylnaphthalene	0.06 I	0.10	ug/L	EPA 8270C
Acenaphthene	0.23	0.10	ug/L	EPA 8270C
Fluoranthene	0.19	0.10	ug/L	EPA 8270C
Naphthalene	0.25	0.10	ug/L	EPA 8270C
Phenanthrene	0.21	0.10	ug/L	EPA 8270C
Pyrene	0.17	0.10	ug/L	EPA 8270C



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01
Prep. Method: EPA 5030B_MS
Analyzed: 02/10/06 By: DS
Anal. Method: EPA 8260B
Anal. Batch:
QC Batch: 6B09004

Project: CTO#386
Work Order #: B601170
Matrix: Water
Unit: ug/L
Dilution Factor: 1

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1,1,1-Trichloroethane	71-55-6	0.300 U	0.300	1.00	ug/L
1,1,2,2-Tetrachloroethane	79-34-5	0.200 U	0.200	0.200	ug/L
1,1,2-Trichloroethane	79-00-5	0.300 U	0.300	1.00	ug/L
1,1-Dichloroethane	75-34-3	0.200 U	0.200	1.00	ug/L
1,1-Dichloroethene	75-35-4	0.200 U	0.200	1.00	ug/L
1,2-Dichlorobenzene	95-50-1	0.200 U	0.200	1.00	ug/L
1,2-Dichloroethane	107-06-2	0.100 U	0.100	1.00	ug/L
1,2-Dichloropropane	78-87-5	0.400 U	0.400	1.00	ug/L
1,3-Dichlorobenzene	541-73-1	0.200 U	0.200	1.00	ug/L
1,4-Dichlorobenzene	106-46-7	0.100 U	0.100	1.00	ug/L
Benzene	71-43-2	1.14	0.200	1.00	ug/L
Bromodichloromethane	75-27-4	0.200 U	0.200	0.400	ug/L
Bromoform	75-25-2	0.200 U	0.200	1.00	ug/L
Bromomethane	74-83-9	0.600 U	0.600	1.00	ug/L
Carbon tetrachloride	56-23-5	0.300 U	0.300	1.00	ug/L
Chlorobenzene	108-90-7	0.200 U	0.200	1.00	ug/L
Chloroethane	75-00-3	0.300 U	0.300	1.00	ug/L
Chloroform	67-66-3	0.200 U	0.200	1.00	ug/L
Chloromethane	74-87-3	0.300 U	0.300	1.00	ug/L
cis-1,2-Dichloroethene	156-59-2	0.200 U	0.200	1.00	ug/L
cis-1,3-Dichloropropene	10061-01-5	0.100 U	0.100	0.200	ug/L
Dibromochloromethane	124-48-1	0.200 U	0.200	0.200	ug/L
Dichlorodifluoromethane	75-71-8	0.300 U	0.300	1.00	ug/L
Ethylbenzene	100-41-4	0.380 I	0.300	1.00	ug/L
m,p-Xylenes	108-38-3/106-42-3	0.300 U	0.300	2.00	ug/L
Methylene chloride	75-09-2	2.00 U	2.00	2.00	ug/L
Methyl-tert-Butyl Ether	1634-04-4	0.200 U	0.200	1.00	ug/L
o-Xylene	95-47-6	0.200 U	0.200	1.00	ug/L
Tetrachloroethene	127-18-4	0.300 U	0.300	1.00	ug/L
Toluene	108-88-3	0.200 U	0.200	1.00	ug/L
trans-1,2-Dichloroethene	156-60-5	0.200 U	0.200	1.00	ug/L
trans-1,3-Dichloropropene	10061-02-6	0.200 U	0.200	0.200	ug/L
Trichloroethene	79-01-6	0.300 U	0.300	1.00	ug/L
Trichlorofluoromethane	75-69-4	0.300 U	0.300	1.00	ug/L
Vinyl chloride	75-01-4	0.400 U	0.400	1.00	ug/L



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01
Prep. Method: EPA 5030B_MS
Analyzed: 02/10/06 By: DS
Anal. Method: EPA 8260B
Anal. Batch:
QC Batch: 6B09004

Project: CTO#386
Work Order #: B601170
Matrix: Water
Unit: ug/L
Dilution Factor: 1

Volatile Organic Compounds by GCMS

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
4-Bromofluorobenzene	460-00-4	45.1	50.0	90 %	60-130
Dibromofluoromethane	1868-53-7	60.3	50.0	121 %	66-131
10luene-d8	2037-26-5	48.5	50.0	97 %	67-139



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01
Prep. Method: EPA 3510C
Analyzed: 02/14/06 By: rw
Anal. Method: FLPRO
Anal. Batch:
QC Batch: 6B13003

Project: CTO#386
Work Order #: B601170
Matrix: Water
Unit: mg/L
Dilution Factor: 1

FL Petroleum Range Organics

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
C8-C40	NA	0.544	0.094	0.170	mg/L
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
n-Nonatriacontane	7194-86-7	0.0969	0.100	97 %	22-137
o-Terphenyl	84-15-1	0.0453	0.0500	91 %	33-133



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01
Prep. Method: EPA 3520C
Analyzed: 02/13/06 By: rw
Anal. Method: EPA 8011
Anal. Batch:
QC Batch: 6B08017

Project: CTO#386
Work Order #: B601170
Matrix: Water
Unit: ug/L
Dilution Factor: 1

Semivolatile Organic Compounds by GC

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1,2-Dibromoethane	106-93-4	0.01 U	0.01	0.02	ug/L
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
1,3-Dichlorobenzene	541-73-1	1.26	1.00	126 %	30-170



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01
Prep. Method: EPA 3510C_MS
Analyzed: 02/16/06 By: jj
Anal. Method: EPA 8270C
Anal. Batch:
QC Batch: 6B13002

Project: CTO#386
Work Order #: B601170
Matrix: Water
Unit: ug/L
Dilution Factor: 1

Semivolatile Organic Compounds by GCMS SIM

Parameter	CAS Number	Analytical Results	MDL	MRL	Units
1-Methylnaphthalene	90-12-0	0.06 I	0.02	0.10	ug/L
2-Methylnaphthalene	91-57-6	0.02 U	0.02	0.10	ug/L
Acenaphthene	83-32-9	0.23	0.02	0.10	ug/L
Acenaphthylene	208-96-8	0.01 U	0.01	0.10	ug/L
Anthracene	120-12-7	0.02 U	0.02	0.10	ug/L
Benzo(a)anthracene	56-55-3	0.01 U	0.01	0.10	ug/L
Benzo(a)pyrene	50-32-8	0.01 U	0.01	0.10	ug/L
Benzo(b)fluoranthene	205-99-2	0.03 U	0.03	0.10	ug/L
Benzo(g,h,i)perylene	191-24-2	0.03 U	0.03	0.10	ug/L
Benzo(k)fluoranthene	207-08-9	0.02 U	0.02	0.10	ug/L
Chrysene	218-01-9	0.02 U	0.02	0.10	ug/L
Dibenzo(a,h)anthracene	53-70-3	0.02 U	0.02	0.10	ug/L
Fluoranthene	206-44-0	0.19	0.01	0.10	ug/L
Fluorene	86-73-7	0.02 U	0.02	0.10	ug/L
Indeno(1,2,3-cd)pyrene	193-39-5	0.02 U	0.02	0.10	ug/L
Naphthalene	91-20-3	0.25	0.02	0.10	ug/L
Phenanthrene	85-01-8	0.21	0.02	0.10	ug/L
Pyrene	129-00-0	0.17	0.02	0.10	ug/L
Surrogate Recovery		Result	Spike Level	% Recovery	% Recovery Limits
p-Terphenyl	92-94-4	2.95	5.00	59 %	10-167



www.encolabs.com

ANALYTICAL REPORT

Sample ID: MPT-351-1-MW06-0206
Lab #: B601170-01

Project: CTO#386
Work Order #: B601170
Matrix: Water

Metals by EPA 6000/7000 Series Methods

Parameter	CAS Number	Analytical Results	MDL	MRL	Units	Analysis Method	Prep Method	Analytical Batch
Lead	7439-92-1	0.002 U	0.002	0.01	mg/L	EPA 6010B	EPA 3005A	6B13011

APPENDIX H
EXCAVATION PHOTOGRAPHS



Photo 1 –View looking east at the former sump excavation



Photo 2- A photo depicting the excavation and the exposed well RW-1, blue communication conduit, and the recently installed fuel oil lines. The edge of well MW05 is in the bottom right corner of the photograph.



Photo 3 - Backfilling excavation



Photo 4 - Site 351-1 restored

APPENDIX I
SOIL DISPOSAL MANIFEST

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. Manifest Doc. No. 2. Page 1 of

3. Generator's Name and Mailing Address
Mayport Naval Station
PO Box 280067
444 PORT FL 32228-0067 Bldg 351 Mayport Naval Base
4. Generator's Phone (904) 280-6732 Jacksonville, FL

5. Transporter 1 Company Name SRI 6. US EPA ID Number A. Transporter's Phone 229-455-2300

7. Transporter 2 Company Name 8. US EPA ID Number B. Transporter's Phone

9. Designated Facility Name and Site Address SOIL REMEDIATION, INC. COUNTY ROAD 329 RAY CITY, GA 31645 10. US EPA ID Number AIR PERMIT #S 2951-019-00011-S-01-0 C. Facility's Phone (229) 455-2300

11. Waste Shipping Name and Description 12. Containers No. Type 13. Total Quantity 14. Unit Wt/Vol

a. Petroleum Contaminated Soil 001 TT 20T

b.

c.

d.

D. Additional Descriptions for Materials Listed Above Truck # 144 E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name DIANE RACINE Signature Diane Racine Month Day Year 1 8 07

17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name John Cole Signature Jh Cole Month Day Year 1 8 07

18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name Joe Probst Signature Joe Probst Month Day Year 10 18 07