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NAS PENSACOLA
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Treatability Study Evaluation Report
for
Underground Storage Tank Site 14

Naval Air Station Pensacola
Pensacola, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0302

October 2004

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TREATABILITY STUDY EVALUATION REPORT
FOR
UNDERGROUND STORAGE TANK SITE 14

NAVAL AIR STATION PENSACOLA
PENSACOLA, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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The professional opinions rendered in this decision document identified as Treatability Study Evaluation Report for Underground Storage Tank (UST) Site 14, Naval Air Station (NAS) Pensacola, Pensacola, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. This document was prepared under the supervision of the signing engineer and is based on information obtained from others. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this document.

October 13, 2004
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ACRONYMS

ASTM	American Society for Testing and Materials
bls	Below Land Surface
°C	Degrees Celsius
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Constituent of Concern
CTO	Contract Task Order
DFM	Diesel Fuel Marine
DPT	Direct Push Technology
DO	Dissolved Oxygen
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
Fe^{2+}	Ferrous Iron
Fe^{3+}	Ferric Iron
FL-PRO	Florida Petroleum Range Organics
GCTL	Groundwater Cleanup Target Level
H_2S	Hydrogen Sulfide
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter
MgO_2	Magnesium Peroxide
$Mg(OH)_2$	Magnesium Hydroxide
MOP	Monitoring Only Plan
msl	Mean Seal Level
mS/cm	Microsiemens per Centimeter
mV	Millivolts
NADSC	Natural Attenuation Default Source Concentrations
NAS	Naval Air Station
OLF	Outlying Landing Field
ORC®	Oxygen Releasing Compound
ORP	Oxidation-Reduction Potential
PAH	Polynuclear aromatic hydrocarbons
PVC	Polyvinyl Chloride
SAR	Site Assessment Report

ACRONYMS (CONTINUED)

SARA	Site Assessment Report Addendum
SOP	Standard Operating Procedure
TOC	Total Organic Carbon
TRPH	Total Recoverable Petroleum Hydrocarbons
TtNUS	Tetra Tech NUS, Inc.
UST	Underground Storage Tank
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Treatability Study Evaluation Report for Underground Storage Tank (UST) Site 14 at Naval Air Station (NAS) Pensacola, Florida. This report was prepared for the United States Navy Southern Division, Naval Facilities Engineering Command under Contract Task Order (CTO) 0302 for the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. This report summarizes the Enhanced Natural Attenuation Treatability Study conducted at UST Site 14 in accordance with the Treatability Study Work Plan (TtNUS, 2003a). The first, second, and third quarterly post injection sampling events have been previously summarized by TtNUS (2003b, 2003c, and 2004). This report provides a comprehensive evaluation of the injection of Oxygen Releasing Compound (ORC®) and five (baseline and four post-injection) groundwater sampling events conducted as part of this study from June 2003 to June 2004.

1.1 SITE SUMMARY

NAS Pensacola is located on a peninsula in southern Escambia County, immediately southwest of the city of Pensacola. This peninsula is bounded to the north by the Bayou Grande, to the east by Pensacola Bay, and to the south by the Gulf of Mexico. UST Site 14 includes the fenced area surrounding the former locations of USTs 681 and 682 located in the northeast area of the facility (Figure 1-1). USTs 681 and 682 are located at the former NAS Pensacola petroleum storage facility, which is located south of Farrar Street. The land surface within the petroleum facility slopes toward the south and is covered with grass and several mature trees. The area surrounding the former USTs is fenced and contains the pump house buildings for the UST system, another small building, and a shed as shown in Figure 1-2. The nearest surface water body to the UST system is Bayou Grande located approximately 3,500 feet to the northeast. A wetland area is located approximately 600 feet southwest of the site. The wetland discharges to a creek, which flows intermittently to the northeast into Bayou Grande. This creek is located to the east and northeast of the site and discharges to Bayou Grande to the northeast of the site.

The site is currently inactive and the two USTs were taken out of service and closed in place in April 1995. The tanks were installed in December 1943 and each had a storage capacity of approximately 1.1 million gallons. At the time the UST system was closed, the tanks were used to store diesel fuel marine (DFM). Historically the USTs had been used to store a variety of vehicle fuels.

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DRAWN BY DM	DATE 8/5/04	SITE LOCATION MAP UST SITE 14 TREATABILITY STUDY EVALUATION REPORT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 5967
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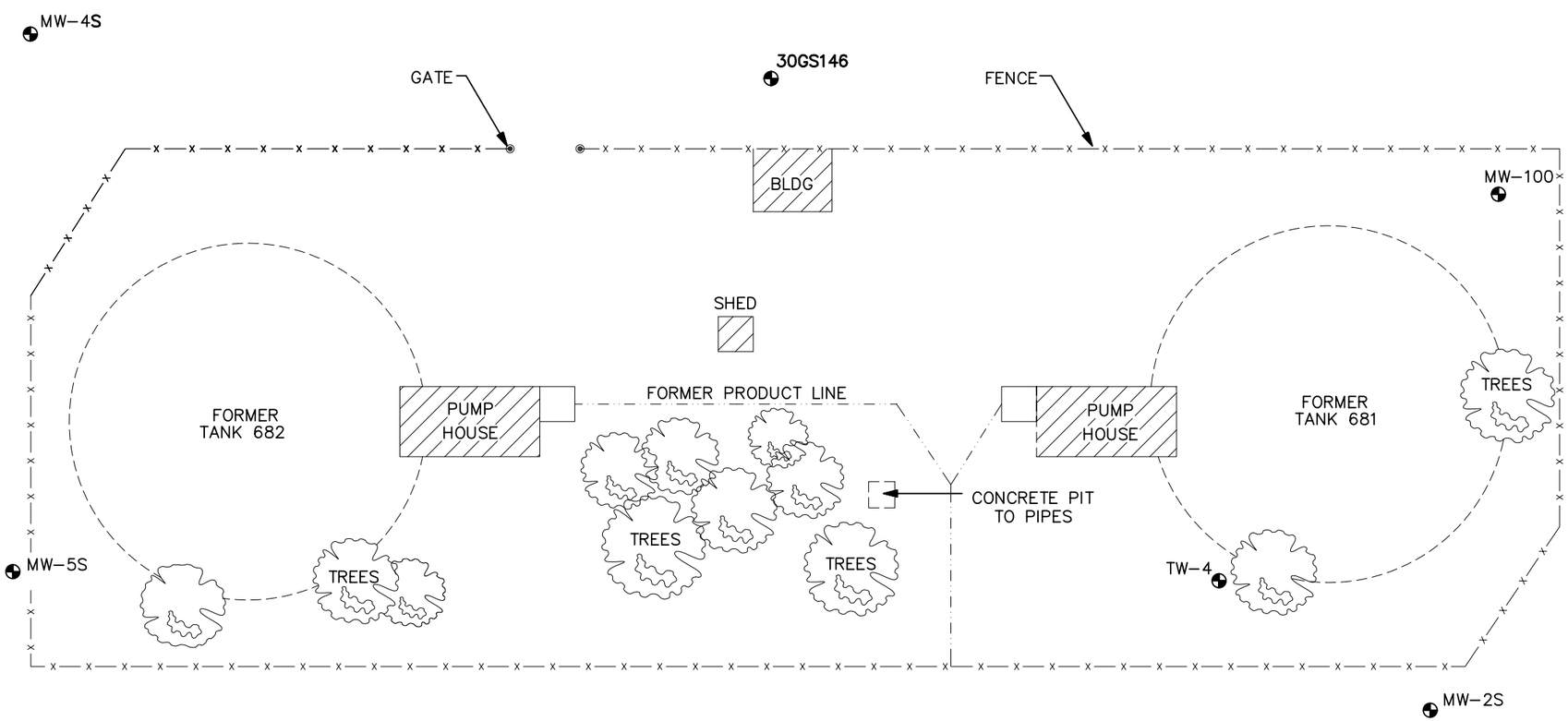

LEGEND:

MW-2S — MONITORING WELL LOCATION AND DESIGNATION

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A Site Assessment Report (SAR) was completed for the site in January 2000, followed by three SAR Addendums (SARAs) completed in January 2001, October 2001, and April 2002. The final recommendation of natural attenuation monitoring was accepted by the Florida Department of Environmental Protection (FDEP, 2002). Quarterly natural attenuation monitoring of the site was initiated with field events completed in August 2002 and November 2002. Letter reports documenting the first and second groundwater monitoring events were presented December 13, 2002 and February 18, 2003, respectively. Elevated concentrations of naphthalene, 1- and 2-methylnaphthalene were reported in perimeter monitoring well MW-2S at levels exceeding the FDEP site specific action levels of 20 micrograms per liter (µg/L) and Groundwater Cleanup Target Levels (GCTLs) of 20 µg/L for all three contaminants. The locations of site features and monitoring wells are shown on Figure 1-2. Based on these results, it was concluded that natural attenuation alone was not effective in reducing site contaminant concentrations; therefore, TtNUS recommended the completion of a treatability study for ORC® enhanced biodegradation at UST Site 14.

1.2 SUMMARY OF CONTAMINATION

Groundwater contamination has been documented at the site during the above-referenced assessment activities. The groundwater contaminant plume appears to be fuel related and is understood to be located in the area of monitoring wells MW-2S and TW-4. As no data were available regarding the area directly northwest of TW-4, the approximate aerial extent of groundwater contamination was estimated to originate at the former tank location. Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene are the primary constituents of concern (COCs) in the contaminant plume. The highest levels were reported at monitoring well MW-2S. Elevated levels were also detected at monitoring well TW-4 at concentrations in excess of the FDEP GCTLs. Historically, there have been no detections of these contaminants at monitoring well MW-1S, which is considered to be a downgradient well. Monitoring wells MW-4S and 30GS146 are considered to be upgradient wells and have not shown any evidence of being impacted from site operations.

2.0 TREATABILITY STUDY OPERATIONS

2.1 TREATABILITY STUDY OBJECTIVE

Natural attenuation includes several mechanisms including physical (dispersion, dilution, diffusion, and volatilization), chemical (abiotic degradation, hydrolysis, and sorption), and biological (biodegradation) processes. While all of these processes are effective in reducing contaminant concentrations, biodegradation is often regarded as the most desirable as it involves the destruction of contaminants. The objective of the Enhanced Natural Attenuation Treatability Study was to determine the effectiveness of using a biostimulant to enhance the biodegradation of petroleum hydrocarbon in groundwater at UST Site 14. The treatability study was designed to focus on the contaminant source and the plume immediately downgradient of the source where contamination was detected in exceedance of FDEP regulatory criteria as shown on Figure 2-1.

2.2 TREATABILITY STUDY CONCEPTUAL MODEL AND APPROACH

Numerous studies have shown that petroleum hydrocarbons, including aliphatic and aromatic compounds, can be biodegraded by a variety of microbially mediated processes. Microorganisms transform petroleum contaminants (such as benzene, xylene and other compounds such as naphthalene) and obtain carbon and energy from these compounds for their survival and growth. Microbes digest these hydrocarbons through a series of enzyme-catalyzed oxidative-reduction reactions. The metabolized intermediates of this transformation process are innocuous compounds such as biomass or if the contaminants are completely oxidized, carbon dioxide and water [American Society for Testing and Materials (ASTM), 1998 and Wiedemeier and Chapelle, 1998]. While both aerobic respiration and anerobic reduction have been successfully demonstrated, biodegradation via aerobic mechanisms is relatively well understood and are more rapid than anerobic reduction (ASTM, 1998).

As a result, this treatability study was designed to create and foster conditions that stimulate the indigenous microbial population to aerobically biodegrade the petroleum hydrocarbons present in the saturated zone. This strategy relies on supplying oxygen to the subsurface to maintain consistently high dissolved oxygen (DO) levels and sufficient nutrients to increase the microbial activity, thereby increasing contaminant destruction through aerobic respiration.

2.3 OXYGEN STIMULANT SELECTED

Oxygen and nutrients can be delivered into the subsurface in several forms including direct oxygen gas injection or via chemicals that release oxygen. ORC®, a chemical-release formulation, was selected for this project. ORC® is a proprietary product produced by Regenesis Bioremediation Products, of

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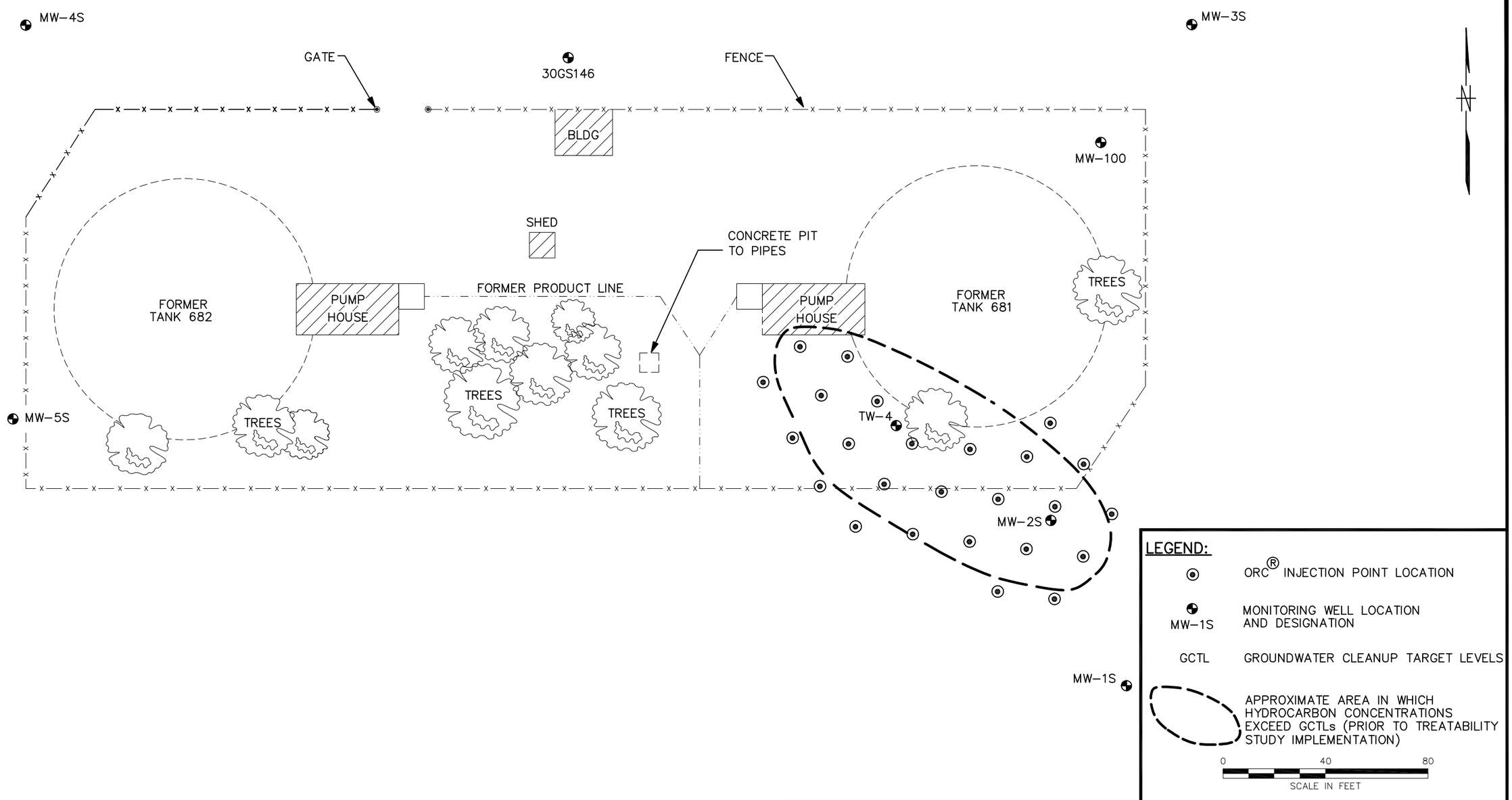

DRAWN BY DM	DATE 8/5/04	ORC® INJECTION POINT LOCATIONS UST SITE 14 TREATABILITY STUDY EVALUATION REPORT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 5967
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San Clemente, California. ORC® is a patented formulation of magnesium peroxide (MgO_2) intercalated with food-grade phosphate that slowly releases molecular oxygen into the aquifer when hydrated. The phosphate is used to create a slow time-release of oxygen, which is critical in a passive, low-cost oxygen application system. The hydrated product becomes magnesium hydroxide [$Mg(OH)_2$]. Through this chemical reaction and the groundwater flow rate, oxygen is released at a relatively constant rate over an extended period of time. The oxygen consumption rate is dependent upon the natural biological and chemical oxygen demand and the groundwater and contaminant flux at the site.

2.4 OXYGEN INJECTION SUMMARY

This pilot-scale treatability study consisted of the installation of 25 injection borings into which ORC®-enriched slurry was injected. The study was originally designed (TtNUS, 2003a) such that these injection borings were clustered in eight zones or banks, with each bank oriented perpendicular to groundwater flow (southwest). Each of these banks was designed to create an oxygen-enriched biological barrier and a passive aerobic reaction zone to reduce petroleum hydrocarbon concentrations. However, prior to injection fieldwork, TtNUS decided the best use of the injection points would be to concentrate in areas where concentrations are known to be above GCTLs. Therefore, the extended banks were shortened, and the density of points was increased in known source areas. These borings were installed in the locations shown on Figure 2-1.

Each boring was advanced using direct push technology (DPT) (e.g., Geoprobe). Shallow groundwater contamination is assumed to extend from the water table to approximately 15 feet below land surface (bls), based on the depths of the shallow monitoring wells previously installed at the site. Therefore, each of the injection points were installed to a depth of 10 feet below the estimated depth to water (totaling approximately 25 feet bls) and the ORC® slurry injected across the entire saturated thickness at each injection point (approximately 10 feet).

2.4.1 Mixing and Injection

The ORC® bulk powder was drop-shipped from the Regenesis manufacturing facility in Inwood, New York. For the ORC® injection borings, approximately 0.63 gallon of potable water was used per 10 pounds of ORC® powder for a 65-percent mixture. The dry ORC® powder (injected at 4 pounds per foot or approximately 40 pounds per injection point) was mixed into a slurry with potable water and injected during a one-time injection event. As recommended by Regenesis, approximately 2 percent sugar by weight was also added to the mixture to provide a carbon source for the microbial growth. Mixing and injection of ORC® was performed in general accordance with Regenesis' instructions provided in Appendix B of the Treatability Study Work Plan (TtNUS, 2003a). Mixing was performed in a 55-gallon drum and was injected through the DPT slurry/grout pump. The mixed ORC® was a thin liquid, similar in

chemical composition to diluted Milk of Magnesia™. A standard environmental slurry mixer/grout pump was used to inject the slurry. The ORC® slurry was mixed immediately before and during injection to prevent from settling and hardening during the handling and injection process.

2.5 GROUNDWATER SAMPLING AND SYSTEM OPERATION ACTIVITIES

TtNUS personnel conducted the following sampling events to monitor the performance of the pilot-scale treatability study:

- June 23, 2003 – Baseline groundwater monitoring event
- September 23, 2003 – First quarter groundwater monitoring event
- December 9, 2003 – Second quarter groundwater monitoring event
- March 8, 2004 –Third quarter groundwater monitoring event
- June 8, 2004 – Fourth quarter groundwater monitoring event

Each groundwater monitoring event included synoptic round of water level measurements from on-site monitoring wells and collection of groundwater samples from select monitoring wells. The purpose of the sampling was to measure COCs concentrations and characterize geochemical parameter concentrations. Groundwater samples were collected from monitoring wells noted on Table 2-1 and illustrated on Figure 2-1. The samples were analyzed for select volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and total recoverable petroleum hydrocarbons (TRPH), laboratory natural attenuation parameters [e.g., total organic carbon (TOC) and sulfate] and field natural attenuation parameters (discussed below).

2.5.1 Groundwater Sample Collection and Analyses

Groundwater samples were collected from wells in general accordance with the current FDEP Standard Operating Procedures (SOPs). Depth to water was measured and the wells were purged prior to sample collection. Purging was accomplished with a peristaltic pump using low-flow purge techniques. During purging, field parameters [pH, conductivity, temperature, DO, and oxidation-reduction potential (ORP)] were measured at approximately 3- to 5-minute intervals using a YSI® Model 556 multi-probe meter and flow through cell. The instrument was calibrated according to the manufacturer's specifications at the beginning of each sampling day. A field calibration log is provided in Appendix A. In addition, turbidity was monitored using a La Motte Turbidimeter.

Following the well purging and sampling activities for laboratory parameters, groundwater samples were analyzed in the field for the following natural attenuation parameters: DO, carbon dioxide, alkalinity,

TABLE 2-1

SUMMARY OF GROUNDWATER SAMPLING PROGRAM[1]
UST SITE 14
NAS PENSACOLA
PENSACOLA, FLORIDA

Well ID	Prior to Treability Study Implementation							Treability Study				
	10/26/99	11/06/00	08/25/01	03/12/02	08/12/02	11/19/02	01/08/03	Baseline 6/2003	Q1 9/2003	Q2 12/2003	Q3 3/2004	Q4 06/08/04
MW-1S	X	NS	X	X	X	X	NS	X	X	X	X	X
MW-2S	X	NS	X	X	X	X	X	X	X	X	X	X
MW-4S	X	NS	NS	NS	X	X	NS	NS	NS	NS	NS	X
TW-4	NS	X	X	X	X	X	NS	X	X	X	X	X

Notes:
NS = monitoring well was not sampled during event
X = monitoring well was sampled during event
1. Data extracted from Tetra Tech, NUS, Inc. database.

ferrous iron, and hydrogen sulfide. Groundwater sample log sheets, and low flow purge data sheets compiled during purging and sampling at each location are provided in Appendix A.

Groundwater samples were also collected for off-site analyses. The groundwater samples were placed on ice and shipped overnight via Federal Express to approved and certified laboratories for analysis. Analyses included VOCs by United States Environmental Protection Agency (USEPA) Method SW846 8026B, PAHs by USEPA Method SW846 8270, TRPH by FDEP's Florida Petroleum Range Organics (FL-PRO), TOC by USEPA Method 415.1, and sulfate by USEPA Method 375.4. The laboratory data for the baseline and subsequent four quarterly sampling events are included in Appendix B.

3.0 TREATABILITY STUDY RESULTS

3.1 TREATABILITY STUDY PERFORMANCE

The performance of the natural attenuation treatability study was monitored by collection and analyses of groundwater samples. This includes direct measurements such as analysis of COCs, indirect measurements such as analysis of geochemical and other data such as hydrogeologic information. Hydrogeologic information was used to determine other factors (e.g., groundwater elevation and flow direction, etc.) affecting treatability study performance. This section discusses the hydrogeologic information collected followed by a discussion of contaminant concentrations and geochemistry results. For a more detailed description of the hydrogeology of the site, please refer to the SAR (TtNUS, 2000).

3.2 GROUNDWATER FLOW AND ELEVATION

Depth to water measurements collected during each quarterly groundwater monitoring event have been tabulated on Table 3-1. Groundwater elevations were calculated from the depth to water measurements and monitoring well top of casing elevations, which were surveyed using the known elevation of 18.56 feet mean sea level (msl) at monitoring well MW-3S as the vertical datum. Groundwater flow direction was determined from the groundwater elevations calculated for each sampling event. Free product measurements were also attempted, but no measurable light non-aqueous phase liquids were detected at the site.

The water level data collected from each of the field events have been used to create potentiometric surface maps for the surficial aquifer. Data from the fourth quarterly event are shown on Figure 3-1. Water level data from the previous three quarterly events are included in Appendix C. The predominant groundwater flow direction at UST Site 14 is east. This flow direction is consistent with previously reported groundwater flow data and is expected given the northeast flowing stream that is located northeast of the site.

Groundwater contours were not extended into the area of MW-2S, because the reason for its significantly higher elevation in this area appears to be an anomaly compared to historical groundwater elevations as shown on Table 3-1 and Figure 3-2. When the four quarterly rounds are compared, groundwater elevations varied consistently across the site, except for the measurement at MW-2S during Round 4. However, for the first three rounds, the groundwater elevation at MW-2S is slightly higher than the groundwater elevations at surrounding wells TW-4, MW-1S, and MW-100. The higher groundwater elevation at MW-2S may be the result of a survey error, but if not, then there is an apparent localized mounding of groundwater, and the groundwater contour in the area of MW-2S may be best represented

TABLE 3-1

GROUNDWATER ELEVATION SUMMARY
UST SITE 14 TANKS 681/682
NAS PENSACOLA
PENSACOLA, FLORIDA

Well ID	Total Well Depth [1]	Top of Casing Elevation [2]	September 24, 2003		December 9, 2003		April 20, 2004		June 8, 2004		
			Depth to Water (ft BTOC)	Groundwater Elevation[2] (ft msl)	Depth to Water (ft BTOC)	Groundwater Elevation[2] (ft msl)	Depth to Water (ft BTOC)	Groundwater Elevation[2] (ft msl)	Measured Well Depth [1] (ft)	Depth to Water (ft BTOC)	Groundwater Elevation[2] (ft msl)
MW-1S	23.00	18.75	17.39	1.36	17.69	1.06	17.79	0.96	22.96	17.47	1.28
MW-2S	23.34	20.46	18.78	1.68	19.21	1.25	19.33	1.13	23.32	18.18	2.28
MW-3S	23.54	18.56	16.68	1.88	17.20	1.36	17.37	1.19	23.52	17.14	1.42
MW-4S	23.00	24.29	20.24	4.05	20.44	3.85	20.56	3.73	23.00	20.56	3.73
MW-5S	23.00	20.79	NM	NM	17.00	3.79	17.33	3.46	22.96	16.96	3.83
TW-4	28.13	25.21	23.80	1.41	24.20	1.01	24.34	0.87	28.12	24.11	1.10
MW-100	28.24	25.46	23.84	1.62	24.31	1.15	24.45	1.01	28.34	24.29	1.17

Notes:

[1] Well depths are in feet below top of casing.

[2] Top of casing and groundwater elevations are in feet above mean sea level.

ft = feet

ft BTOC = feet below top of casing

ft msl = feet above mean sea level

NM = Not measured

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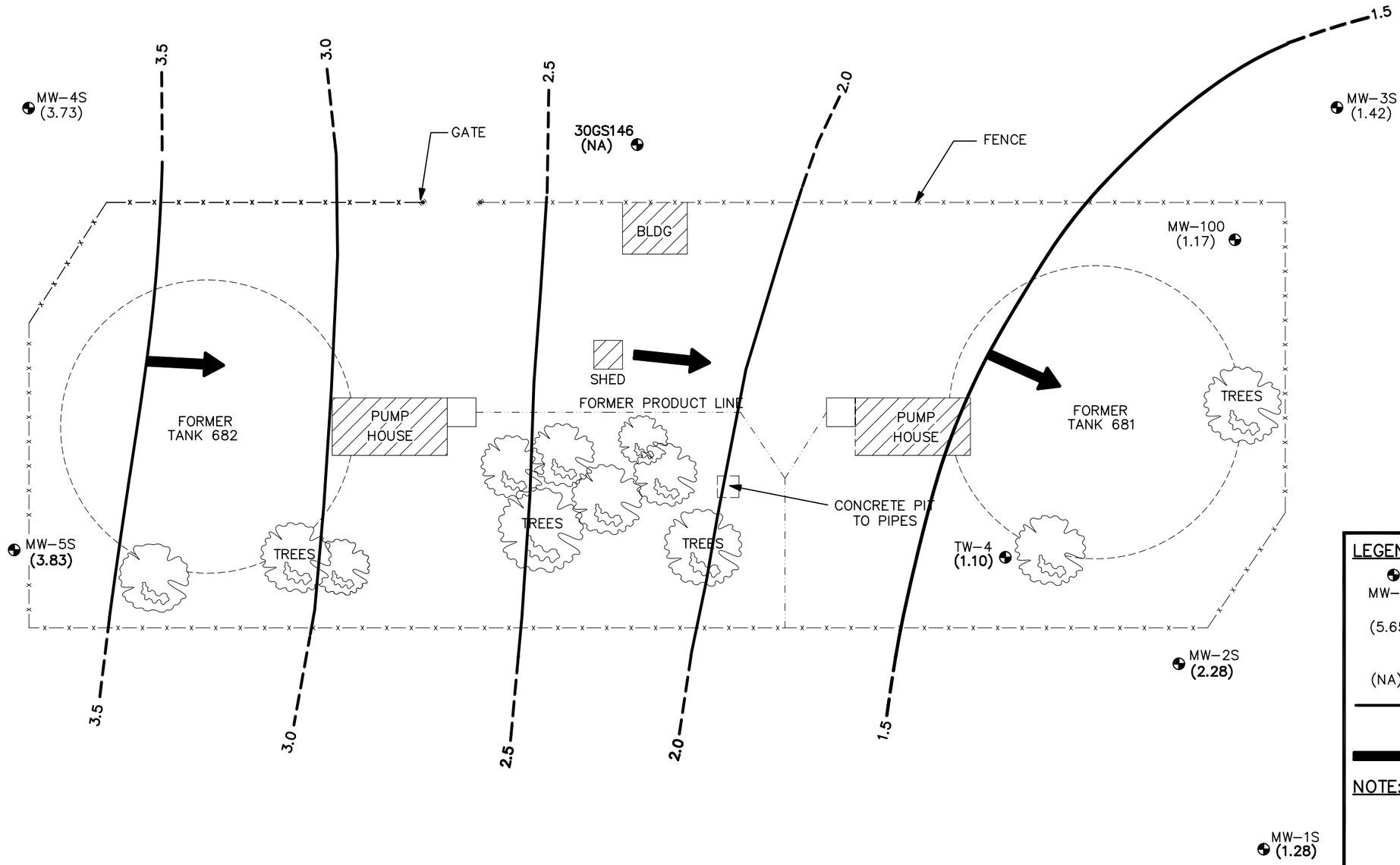

LEGEND:

MW-2S	MONITORING WELL LOCATION AND DESIGNATION
(5.65)	POTENTIOMETRIC SURFACE ELEVATION FEET MEAN SEA LEVEL
(NA)	NOT AVAILABLE
2.0	EQUIPOTENTIAL LINE (DASHED WHERE INFERRED)
	INFERRED GROUNDWATER FLOW DIRECTION

NOTE:

MW-2S NOT USED IN CONTOURING DUE TO ITS SUSPECT RESULT

0 40 80
SCALE IN FEET

DRAWN BY DM	DATE 8/5/04	GROUNDWATER POTENTIOMETRIC SURFACE MAP JUNE 8, 2004 UST SITE 14 TREATABILITY STUDY EVALUATION REPORT NAS PENSACOLA PENSACOLA, FLORIDA	CONTRACT NO. 5967
CHECKED BY KWH	DATE 8/5/04		OWNER NO. 0000
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SCALE AS NOTED			DRAWING NO. FIGURE 3-1 / REV. 0

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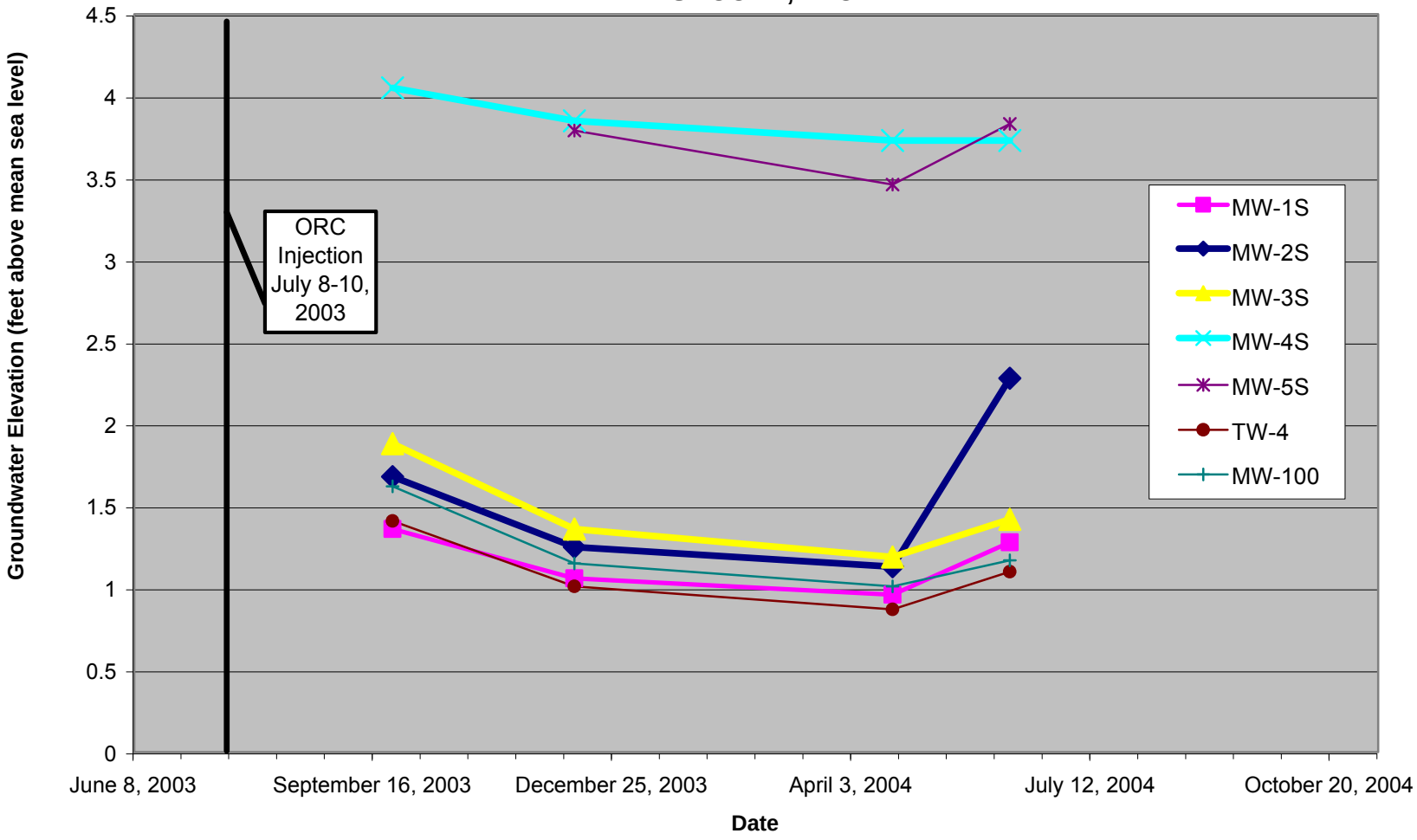
FIGURE 3-2
GROUNDWATER POTENTIOMETRIC SURFACE - SEPTEMBER 24, 2003 through JUNE 8, 2004
UST SITE 14
NAS PENSACOLA
PENSACOLA, FLORIDA



as shown for the first quarterly sampling event (Appendix C). There is an insufficient number of wells to the southwest and northeast of MW-2S to determine if this is a localized groundwater mound resulting in radial flow. If a more detailed understanding of groundwater flow direction in the area of MW-2S is desired, then it is recommended that additional wells be considered. Also, as previously mentioned, the surveyed top-of-casing for MW-2S may be inaccurate, so it should be checked in order to verify the possibility of a localized groundwater mound.

3.3 GROUNDWATER ANALYTICAL RESULTS

3.3.1 Expectations

Successful application of oxygen into the subsurface and the subsequent stimulation of aerobic biological degradation of petroleum compounds should result in predictable changes in site contaminant and geochemical parameters. Depending on site conditions, many of the following indications should be observed in the field indicating a successful application:

- Decreased petroleum hydrocarbon concentrations in the source area and downgradient monitoring wells.
- Decreased dissolved hydrogen concentrations.
- Decreased methane concentrations.
- Increased sulfate/decreased sulfide concentrations.
- Decreased ferrous (dissolved) iron concentrations.
- Decreased manganese (dissolved) concentrations.
- Increased DO concentrations.
- Increased ORP.

As noted in many natural attenuation and bioremediation guidance documents, a decrease in the contaminant mass and/or concentrations and plume extent are the primary lines of evidence that natural attenuation or enhanced bioremediation is effectively working. The secondary line of evidence includes favorable geochemical conditions observed in the field that support the biodegradation of the contaminants (ASTM, 1998; Weidemeier and Chapelle, 1998; USEPA, 1998). The following sections describe each of these lines of evidence as a means to determine the effectiveness of the remedial alternative evaluated in this treatability study.

3.3.2 Analytical Results

The laboratory analytical results and exceedances of applicable regulatory criteria for the groundwater samples collected during the treatability study are summarized in Table 3-2. Figure 3-3 illustrates the results for monitoring wells MW-1S, MW-2S, and TW-4 (the fourth round non-detect results at MW-4S are

TABLE 3-2

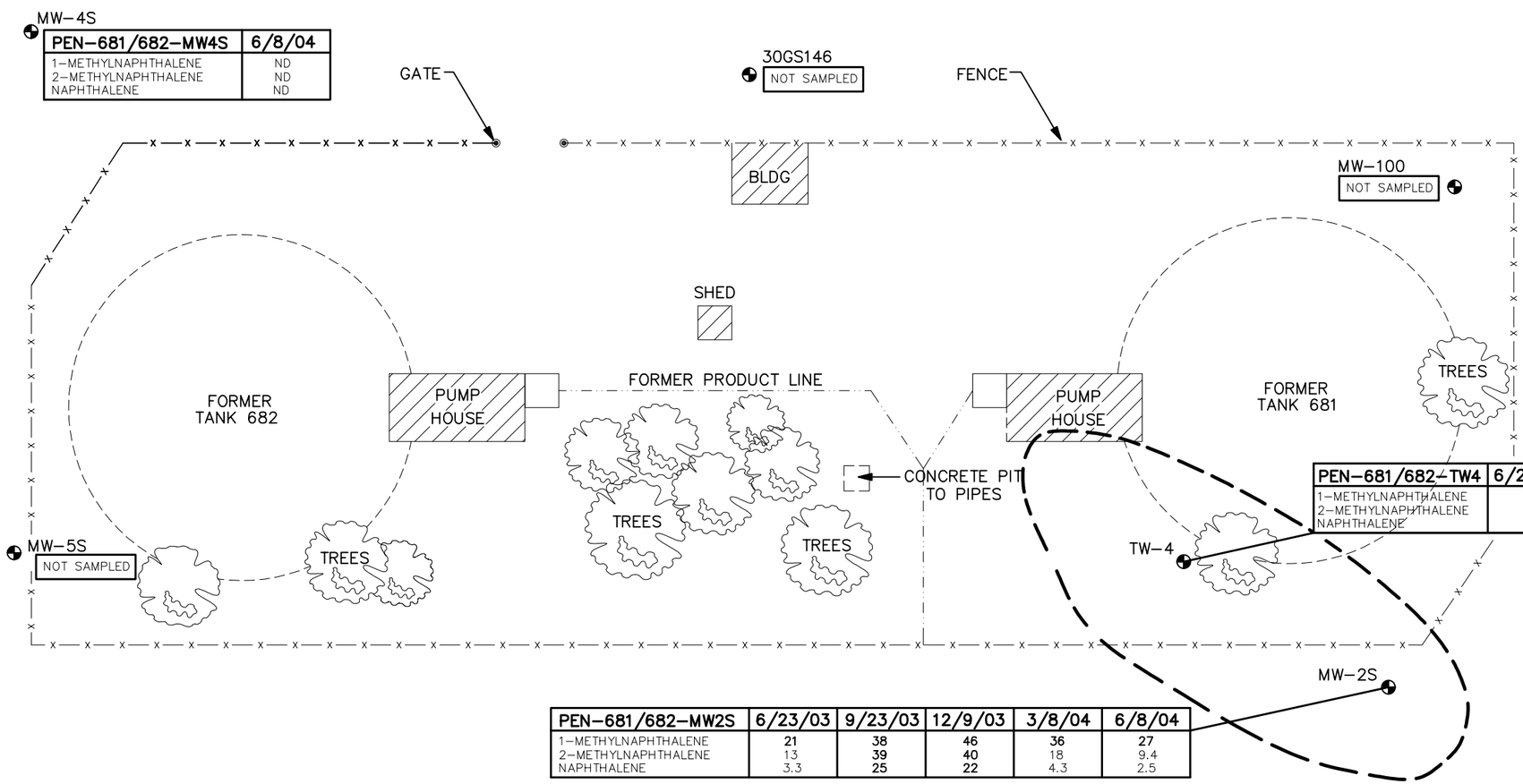
SUMMARY OF LABORATORY DETECTED ANALYTES IN GROUNDWATER
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

PAGE 1 OF 1

LOCATION	GCTL	NADC	MW1S					MW2S					TW4					TW4
SAMPLE ID			PEN-681/682-MW1S					PEN-681/682-MW2S					PEN-681/682-TW4					PEN-681/682-TW4
MOP Designation			Perimeter Well					Perimeter Well					Contaminant Well					Upgradient Well
SAMPLING EVENT			Baseline	1Q	2Q	3Q	4Q	Baseline	1Q	2Q	3Q	4Q	Baseline	1Q	2Q	3Q	4Q	4Q
COLLECTION DATE			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	06/08/04
Semivolatile Organics (ug/L)																		
1-METHYLNAPHTHALENE	20	200	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	**21**	**38**	**46**	**36**	**27**	0.2 U	**42**	**89**	**42**	**64**	0.21U
2-METHYLNAPHTHALENE	20	200	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	13	**39**	**40**	18	9.4	0.2 U	**47**	**79**	**45**	**69**	0.21U
ACENAPHTHENE	20	200	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	2.3 J	7.8 U	3 J	2.9	2.8	0.2 U	7.5 U	5.6 J	1.4	7.8 U	0.21U
ANTHRACENE	2100	21000	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 J	0.2 U	7.5 U	7.5 U	0.2 U	0.27	0.21U
FLUORENE	280	2800	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	4.7	6.4 J	7.3	5.4	4.9	0.2 U	7.5 U	8.1	2.2	6.6 J	0.21U
NAPHTHALENE	20	200	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	3.3 J	**25**	**22**	4.3	2.5	0.2 U	**29**	**58**	19	**41**	0.21U
PHENANTHRENE	210	2100	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	3.8 U	7.8 U	2.8 J	2	2.3	0.2 U	7.5 U	6.1 J	0.74	6.0 J	0.21U

Notes:
[1] Groundwater Cleanup Target Level as provided in Chapter 62-777, FAC.
[2] Natural Attenuation Default Concentrations as provided in Chapter 62-770, FAC.
[3] VOCs (SW-846 8260B)
[4] PAHs = Polynuclear Aromatic Hydrocarbons (SW-846 8270 SIM)
[5] TRPH = Total Recoverable Petroleum Hydrocarbons (FDEP FL-PRO)
Bold values exceed regulatory critera
-- = Analyte not detected
J = Estimated concentration
µg/L = micrograms per liter
FL-PRO = Florida Petroleum Range Organics
NC = No Criteria
FAC = Florida Administrative Code
TB = Trip Blank
NA = Not analyzed for this parameter
NS = Not sampled
U = less than laboratory detection limit

ACAD: 5967CT10.dwg 09/01/04 MF PIT



PEN-681/682-MW4S	6/8/04
1-METHYLNAPHTHALENE	ND
2-METHYLNAPHTHALENE	ND
NAPHTHALENE	ND

PEN-681/682-TW4	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04
1-METHYLNAPHTHALENE	ND	**42**	**89**	**42**	**64**
2-METHYLNAPHTHALENE	ND	**47**	**79**	**45**	**69**
NAPHTHALENE	ND	**29**	**58**	19	**41**

PEN-681/682-MW2S	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04
1-METHYLNAPHTHALENE	**21**	**38**	**46**	**36**	**27**
2-METHYLNAPHTHALENE	13	**39**	**40**	18	9.4
NAPHTHALENE	3.3	**25**	**22**	4.3	2.5

PEN-681/682-MW1S	6/23/03	9/23/03	12/9/03	3/8/04	6/8/04
1-METHYLNAPHTHALENE	ND	ND	ND	ND	ND
2-METHYLNAPHTHALENE	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND

LEGEND:

MW-2S — MONITORING WELL LOCATION AND DESIGNATION

ND — NOT DETECTED

——— CURRENT EXTENT OF GROUNDWATER EXCEEDANCES (DASHED WHERE INFERRED)

NOTE:

GCTL = GROUNDWATER CLEANUP TARGET LEVEL

	GCTL
1. 1-METHYLNAPHTHALENE	20
2-METHYLNAPHTHALENE	20
NAPHTHALENE	20

2. ANALYTE CONCENTRATIONS MEASURED IN MICROGRAMS/LITER (ug/L)
3. EXCEEDANCES ARE IN BOLD

0 40 80
SCALE IN FEET

DRAWN BY DM	DATE 8/5/04	GROUNDWATER EXCEEDANCES UST SITE 14 JUNE 8, 2004 TREATABILITY STUDY EVALUATION REPORT NAS PENSACOLA PENSACOLA, FLORIDA
CHECKED BY KWH	DATE 8/5/04	
REVISED BY	DATE	
SCALE AS NOTED		

NAVFAC

CONTRACT NO. 5967
OWNER NO. 0000
APPROVED BY DATE
DRAWING NO. FIGURE 3-3
REV. 0

FORM CADD NO. SDIV-BH.DWG – REV 1 – 9/10/98

shown as well). The results that exceeded regulatory criteria are bolded as shown. The laboratory data for all of the wells sampled (both historical and recently collected data) are included in Appendix B.

3.3.2.1 Baseline and Historical Trends

The historical groundwater results for MW-2S and TW-4 are graphed on Figures 3-4 and 3-5 [there were no detections at MW-1S (a downgradient well) and MW-4S (an upgradient well), so these wells were not graphed]. Prior to the baseline sampling event, groundwater detections of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene exceeded the GCTL of 20 µg/L during the sampling rounds in 2002 at MW-2S and throughout sampling rounds from 1999 through 2002 at TW-4. At MW-2S these exceedances decreased from the maximum concentration detected in late 2002 to lower concentrations during the baseline sampling event in June 2003. 1-methylnaphthalene (21 µg/L) was the only parameter detected in excess of its respective GCTL during the baseline sampling. At TW-4, the historical detections fluctuated from exceedances as high as approximately 60 µg/L to non-detect, but during the baseline sampling event in June 2003, none of the three primary COCs were detected.

At MW-2S and TW-4, the baseline groundwater concentrations were significantly low as compared to concentrations detected in the previous sampling events. This suggests that there is a natural variability in the dissolution of PAHs by spatially and temporally varying mechanisms such as groundwater elevations, groundwater flow rate and direction, and sorption rates. Thus it is expected that natural variability in the groundwater concentrations will occur.

3.3.2.2 Performance Monitoring Data

The previous review of historical and post-injection data allows for assessment of the treatability study. A comparison of the baseline and post-injection groundwater sampling event's results indicate naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene concentrations in monitoring wells MW-2S and TW-4 have increased from the low historical concentrations or non-detects and have fluctuated through the four rounds of quarterly monitoring.

At MW-2S (Figure 3-4), during the first and second quarter post-injection monitoring events, these PAH concentrations exceeded GCTLs with the maximum detection during the second quarter of 46 µg/L. Detected concentrations during the third and fourth quarter decreased such that only the 1-methylnaphthalene detection of 27 µg/L exceeded the GCTL.

From the baseline non-detects at TW-4 (Figure 3-5), PAH concentrations increased through the first and second quarters, decreased during the third quarter, and then increased during the fourth quarter. These

FIGURE 3-4
HISTORICAL GROUNDWATER EXCEEDANCES IN MW-2S
UST SITE 14
NAS PENSACOLA, PENSACOLA FLORIDA

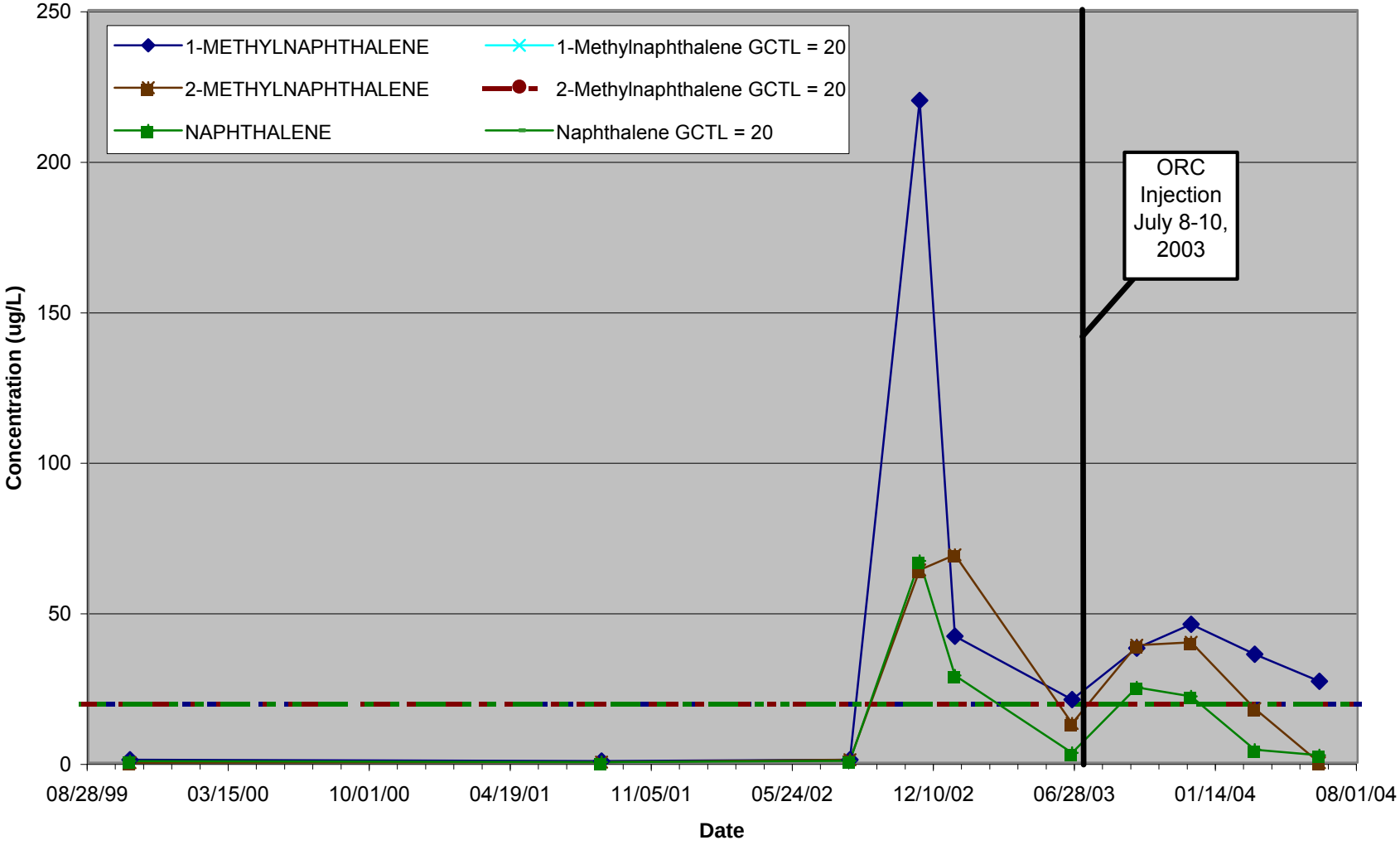
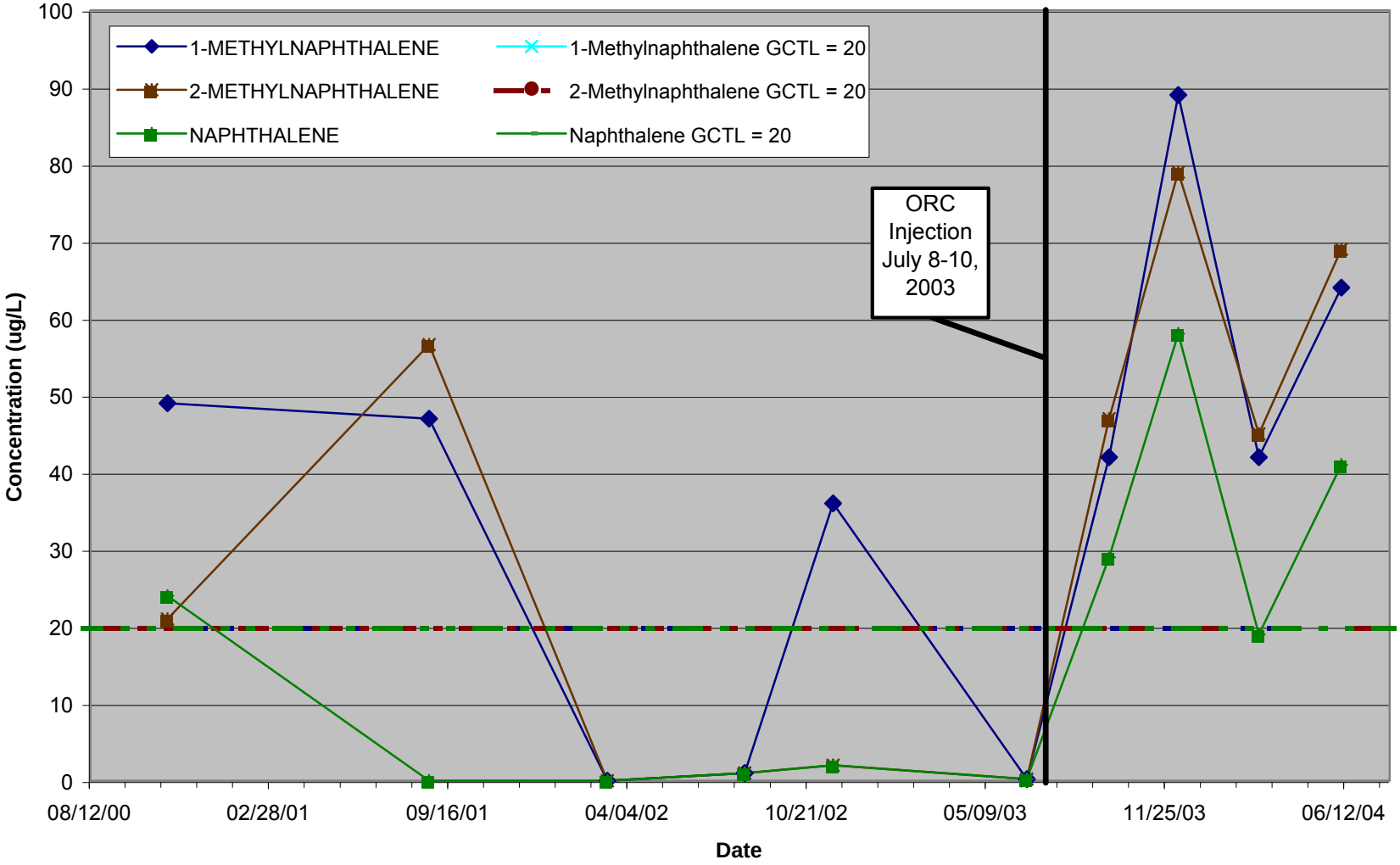


FIGURE 3-5
HISTORICAL GROUNDWATER EXCEEDANCES IN TW-4
UST SITE 14
NAS PENSACOLA, PENSACOLA FLORIDA



detections exceeded the GCTLs except for naphthalene during the third quarter. Overall the maximum detection at TW-4 was 89 µg/L for 1-methylnaphthalene.

After the ORC® injection, groundwater concentrations initially increased, then decreased at MW-2S and TW-4, and then increased at TW-4. The initial increase in concentrations has been observed in other bio-stimulation remedial projects and has been attributed to a rapid mobilization of sorbed contaminant mass into the dissolved phase. Regenesis (personal communication) has observed that this rapid mobilization is due to an enzyme excreted by the microbial consortia as a result of the rapid and sudden release of oxygen from the ORC®. The enzyme acts as a biosurfactant and accelerates the desorption of contaminant mass from the sorbed phase to the dissolved-phase resulting in a rapid rise in dissolved phase concentrations. However, in other studies this phenomenon appears to be short lived and once the microbiota equilibrate with the new conditions they consume and biodegrade the dissolved contaminants.

Groundwater concentrations at MW-2S for the fourth round post-injection sampling indicate a favorable decrease as compared to the previous two quarters (i.e., second and third quarterly sampling events). If the decrease in concentrations continues into the future, then it will be possible to conclude that the ORC® treatment was successful in its enhancement of biodegradation.

At TW-4, the fourth round post-injection sampling indicates an increase in groundwater concentration. The cause for this increase in concentration is uncertain. It may be due to natural variability in the aquifer, but a conclusion cannot be made without future monitoring and additional evaluation. Note that this increase is not as significant as the increase from the first to the second quarterly sampling event, which may have been due to the injection (see previous paragraph).

3.4 NATURAL ATTENUATION PARAMETERS

The concentrations of each monitored natural attenuation or geochemical parameter, with respect to background concentrations and changes in the concentrations over time, may indicate whether degradation via naturally present microbes is occurring. These data provide a secondary line of evidence to determine if enhanced natural attenuation is occurring. The laboratory and field analytical results for monitored natural attenuation parameters for groundwater samples collected during the treatability study are summarized in Table 3-3. The trends in monitored natural attenuation parameter concentrations over the course of the treatability study and a discussion of how the monitored natural attenuation parameter measurements compare to baseline and background values are discussed below.

TABLE 3-3

SUMMARY OF MONITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
NAS PENSACOLA
PENSACOLA, FLORIDA
PAGE 1 OF 3

Sample Location			PEN-14-MW1S					PEN-14-MW2S				
Sampling Event			Baseline	1Q	2Q	3Q	4Q	Baseline	1Q	2Q	3Q	4Q
Collect Date			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
	Preferred Range	Units										
Field Parameters												
Dissolved Oxygen	> 0.5 mg/L	mg/L	0.2	3.0	2.0	0.9	1.0	0.2	1.0	1.0	0.9	1.0
Carbon Dioxide	> 2X Background	mg/L	30	50	12.5	14	22	85	40	16	14	25
Alkalinity	> 2X Background	mg/L	55	100	40	35	60	60	100	37.5	50	45
Ferrous iron	decreasing trend	mg/L	2.6	3.0	1.8	2.33	1.14	3.4	2.6	1.6	1.63	1.46
Hydrogen Sulfide	decreasing trend	mg/L	ND	ND	ND	ND	ND	>5.0	0.85	6.0	> 5.0	0.5
Temperature	> 20 ºC	ºC	23.41	23.76	23.58	22.25	22.87	23.44	24.76	23.83	22.55	22.49
pH	5 < pH < 9	SU	6.10	5.87	6.26	6.57	6.34	6.05	6.30	6.68	6.32	6.38
Oxidation-Reduction potential	increasing trend	mV	180	27	3	18.1	9.6	-107.4	-168	-154	-162.5	-63.9
Laboratory Parameters												
Sulfate		mg/L	12	14	16	14	11	7.2	1 U	9.5	26	14
Total Organic Carbon		mg/L	4.2	4.9	3	4	3.7	27	14	12	9.4	12

See notes at end of table.

TABLE 3-3

SUMMARY OF MONITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
NAS PENSACOLA
PENSACOLA, FLORIDA
PAGE 2 OF 3

Sample Location			PEN-14-TW4					PEN-14-MW4S				
Sampling Event			Baseline	1Q	2Q	3Q	4Q	Baseline	1Q	2Q	3Q	4Q
Collect Date			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
	Preferred Range	Units										
Field Parameters												
Dissolved Oxygen	> 0.5 mg/L	mg/L	3.0	2.0	0.8	3.0	1.0	NS	NS	NS	NS	2.0
Carbon Dioxide	> 2X Background	mg/L	30	50	22.5	15	75	NS	NS	NS	NS	27
Alkalinity	> 2X Background	mg/L	90	110	120	35	150	NS	NS	NS	NS	50
Ferrous iron	decreasing trend	mg/L	ND	2.0	1.8	1.19	1.24	NS	NS	NS	NS	1.71
Hydrogen Sulfide	decreasing trend	mg/L	ND	0.23	0.38	0.15	2.0	NS	NS	NS	NS	ND
Temperature	> 20 ºC	ºC	22.10	23.58	24.03	22.31	22.18	NS	NS	NS	NS	22.74
pH	5 < pH < 9	SU	6.61	6.01	7.29	6.48	6.45	NS	NS	NS	NS	6.44
Oxidation-Reduction potential	increasing trend	mV	10	-97	-274	-143.1	-99.3	NS	NS	NS	NS	8.9
Laboratory Parameters												
Sulfate		mg/L	3.2	1 U	1 U	6.1	7.0	NS	NS	NS	NS	11
Total Organic Carbon		mg/L	2 U	15	16	14	20	NS	NS	NS	NS	3.8

See notes at end of table.

TABLE 3-3

SUMMARY OF MONITORED NATURAL ATTENUATION PARAMETERS IN GROUNDWATER
UST SITE 14 / TANKS 681/682
NAS PENSACOLA
PENSACOLA, FLORIDA
PAGE 3 OF 3

Sample Location			PEN-14-30GS146				
Sampling Event			Baseline	1Q	2Q	3Q	4Q
Collect Date			06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
	Preferred Range	Units					
Field Parameters							
Dissolved Oxygen	> 0.5 mg/L	mg/L	NS	NS	NS	NS	6.0
Carbon Dioxide	> 2X Background	mg/L	NS	NS	NS	NS	< 10
Alkalinity	> 2X Background	mg/L	NS	NS	NS	NS	17
Ferrous iron	decreasing trend	mg/L	NS	NS	NS	NS	0.08
Hydrogen Sulfide	decreasing trend	mg/L	NS	NS	NS	NS	ND
Temperature	> 20 ºC	°C	NS	NS	NS	NS	23.2
pH	5 < pH < 9	SU	NS	NS	NS	NS	6.90
Oxidation-Reduction potential	increasing trend	mV	NS	NS	NS	NS	265.3
Laboratory Parameters							
Sulfate		mg/L	NS	NS	NS	NS	NS
Total Organic Carbon		mg/L	NS	NS	NS	NS	NS

Notes:
mg/L = milligrams per liter
ND = not detected
NS = not sampled
> 5.0 = indicates result exceeded the upper limit of field test kit.
°C = Degrees Celsius
SU = Standard pH Units
mV = Millivolts

For UST Site 14, MW-2S and TW-4 are designated with FDEP approval to be source area wells, MW-1S is considered to be a downgradient well, and MW-4S and 30GS146 are considered to be upgradient or background wells.

DO acts as a primary substrate or co-substrate during aerobic metabolism and is the single most efficient electron acceptor responsible for the biodegradation of natural or anthropogenic organic carbon. Therefore, a decrease in DO in source area wells compared to wells located upgradient of the source could indicate that microbes in the source area are using oxygen for biodegradation under natural conditions. With the release of oxygen from ORC®, it is expected that the DO will increase, at least initially, until the released oxygen is subsequently consumed. For UST Site 14, DO concentrations in monitoring wells MW-1S and MW-2S increased in quarters one and two as compared to their respective baseline concentrations and maintained similar concentrations into subsequent quarters three and four. DO at TW-4 fluctuated throughout the four quarters of monitoring, but never exceeded its baseline value. The DO concentrations including the baseline concentrations were above the preferred aerobic range of 0.5 mg/L, except at 30GS146, which is upgradient of the site and far removed from the treatability study area. This indicates favorable aerobic conditions for bioremediation of the PAHs.

Ferrous iron (Fe^{2+}) is the soluble end product of the reduction of ferric iron (Fe^{3+}). The absence of or decrease in ferrous iron may indicate that aerobic conditions exist. Conversely, the presence of or increase in ferrous iron would indicate anaerobic or reducing conditions. Microorganisms will use ferric iron as electron acceptors under anaerobic conditions after DO and nitrate have been depleted. Ferrous iron concentrations at MW-1S, MW-2S, and TW-4 have decreased or not changed following the ORC® implementation as compared to baseline measurements. The decrease of ferrous iron indicates oxidation of ferrous iron to ferric iron is occurring, and that conditions are becoming more aerobic. However, ferrous iron concentrations at all wells except 30GS146 are greater than the preferred range of < 1 mg/L. This suggests that although groundwater in the contaminated area became slightly more aerobic after the ORC® injection, groundwater may not have reached ideal aerobic conditions.

Sulfate can be used as an electron acceptor after DO, nitrate, and ferric iron are consumed. Under these conditions sulfate is reduced to sulfide or sulfide compounds (such as hydrogen sulfide, H_2S, or HS^-). The presence of sulfate may be indicative that oxidizing conditions exist, the oxidation of reduced sulfides to sulfates is occurring, and conditions for aerobic biodegradation are favorable. Sulfate concentrations at MW-1S, MW-2S, and TW-4 (refer to Table 3-2) are relatively low and fluctuating throughout the monitoring rounds. However, at MW-2S and TW-4, the sulfate concentrations have slightly increased in the last three quarters indicating a favorable transition to aerobic conditions.

Stable and detectable concentrations of hydrogen sulfide are indicative of reducing conditions or anaerobic biodegradation. No hydrogen sulfide has been detected at MW-1S, relatively low concentrations have been detected at TW-4, and fluctuating concentrations have been detected at MW-2S. The observed variability does not suggest a meaningful trend.

The presence of carbon dioxide and alkalinity in groundwater in excess of background levels may indicate that biodegradation is occurring. Carbon dioxide is the daughter product of aerobic and anaerobic biological reactions. However, because the carbon-buffering system in groundwater (measured as alkalinity) serves as both a sink and a source of carbon dioxide, an increase in this value is a qualitative indication of microbial biodegradation. The carbon dioxide and alkalinity concentration at MW-2S and TW-4 wells were higher than the respective concentration in upgradient wells MW-4S and 30GS146 during the fourth quarter. The upgradient wells were only sampled in the fourth quarter so limited comparisons could be made. With respect to baseline concentrations carbon dioxide and alkalinity fluctuated slightly in wells MW-2S and TW-4.

The ORP of groundwater is indicative of the redox state that may be present based on the relative tendency of the groundwater to accept or transfer electrons. ORP values at MW-1S, MW-2S, and TW-4 ranged from -274 to 180 mV. The ORP value in the upgradient well 30GS146 during the last quarter was 265 mV. The ORP values in the source area indicate marginally reducing to moderately oxidizing conditions, which are generally favorable for aerobic biodegradation.

Microbial activity and presence can be affected by the pH of groundwater. Petroleum metabolizing microorganisms generally prefer pH values between 5 and 9 standard units. Reported pH values from the sampled monitoring wells were within the preferred pH range. Temperatures ranged from 22.10°C to 24.76°C, which is in the optimal range for biodegradation to occur.

In summary, the natural attenuation parameters indicate that moderately reducing to moderately oxidizing conditions occur in the source area (MW-2S and TW-4), moderately oxidizing conditions occur downgradient of the source (MW-1S), and oxidizing conditions occur upgradient of the source (30GS146). Biodegradation is likely naturally occurring, and the ORC® injection appeared to increase the oxidizing potential of the groundwater, and therefore the treatability study injection likely enhanced biodegradation of the PAH contamination.

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4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

This report summarizes the results to date of the Enhanced Natural Attenuation Treatability Study for UST Site 14. The data collected during this treatability study suggest that conditions are favorable for ORC® injection to enhance biodegradation of the petroleum constituents previously reported in the groundwater. The following conclusions are based on the treatability study data:

- The predominant groundwater flow direction at UST Site 14 is east. This flow direction is consistent with previously reported groundwater flow data and is expected given the northeast flowing stream that is located northeast of the site.
- After the ORC® injection, groundwater concentrations initially increased and then decreased in the source area at MW-2S and TW-4. The initial increase in concentrations has been observed in other biostimulation remedial projects and has been attributed to a rapid mobilization of sorbed contaminant mass into the dissolved phase. This phenomenon is typically short-lived and once the microbiota equilibrates with the new conditions, they consume the dissolved contaminants.
- Groundwater concentrations at MW-2S for the third and fourth quarter post-injection sampling indicate a favorable decrease as compared to the second quarter round. Detected concentrations during the fourth quarter decreased such that only 1-methylnaphthalene (27 µg/L) exceeded the GCTL. If the decreasing concentration trend continues into the future, then it will be possible to conclude that the ORC® treatment successfully reduced the contaminants to less than the regulatory criteria.
- At TW-4, the fourth quarter post-injection sampling indicates an increase in groundwater concentrations. The cause for this increase in concentration is uncertain. It may be due to natural variability in the aquifer, but a conclusion cannot be made without future monitoring and additional evaluation. The four rounds of detections exceeded the GCTL except for naphthalene during the third quarter, and the overall maximum detection at TW-4 was 89 µg/L for 1-methylnaphthalene.
- No PAH detections occurred at the downgradient well MW-1S and upgradient well MW-4S during the treatability study.
- The natural attenuation parameters indicate that moderately reducing to moderately oxidizing conditions occur in the source area (MW-2S and TW-4), moderately oxidizing conditions occur downgradient of the source (MW-1S), and oxidizing conditions occur upgradient of the source

(30GS146). Biodegradation is likely naturally occurring and it was likely further stimulated by the oxygen injected into the aquifer.

- Based on the temporal analysis of the natural attenuation parameters, there is some evidence to support the conclusion that enhanced biodegradation of petroleum constituents occurred (this is considered to be a secondary source of evidence). The ORC® injection appeared to increase the oxidizing potential of the groundwater, and therefore, the treatability study injection likely enhanced biodegradation of the PAH contamination.
- Although the oxygen from the ORC® is likely consumed at this point, natural processes (e.g., recharge) may supply sufficient oxygen and nutrients to continue the natural attenuation of the contaminants present at this site.

4.2 RECOMMENDATIONS

The following recommendations are presented based on the treatability study results:

- If a more detailed understanding of groundwater flow direction in the area of MW-2S is desired, then it is recommended that additional wells be considered. Also, as previously mentioned, the surveyed top-of-casing for MW-2S may be inaccurate, so it should be re-measured to verify its elevation.
- Although some conclusions can be made about the biodegradation of PAH compounds during this treatability study, the cause of the increase in concentrations during the fourth quarter at source well TW-4 is uncertain. The extent of the source area south of the pump house and west of MW-2S is not well understood, and it is not known if these areas are contributing to the source. Therefore, it is recommended that additional investigation be performed that includes soil and groundwater sampling via DPT south of the pump house, along the pipe lines near the pump house, and west of MW-2S, potentially followed by monitoring well installation and sampling at locations determined from the DPT results.

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APPENDIX A

FIELD DATA FORMS

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: WATER QUALITY METER / 556 MDS

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: YSI

PROJECT No.: N4250

SERIAL NUMBER: 03B0396AE

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	03B0396AE	H. ENGLE	NA	NA	3.88	4.00	3390	pH
06/07/04	03B0396AE	H. ENGLE	NA	NA	6.94	7.00	3472	pH
06/07/04	03B0396AE	H. ENGLE	NA	NA	1.401	1.414	4335	mS/cm
06/07/04	03B0396AE	H. ENGLE	NA	NA	NA	241	4066	ORP mV
06/08/04	03B0396AE	H. ENGLE	NA	NA	3.89	4.00	3390	pH
06/08/04	03B0396AE	H. ENGLE	NA	NA	6.88	7.00	3472	pH
06/08/04	03B0396AE	H. ENGLE	NA	NA	1.421	1.414	4335	mS/cm
06/08/04	03B0396AE	H. ENGLE	NA	NA	NA	237	4066	ORP mV
06/09/04	03B0396AE	M. AKERS	NA	NA	3.84	4.00	3390	pH
06/09/04	03B0396AE	M. AKERS	NA	NA	6.91	7.00	3472	pH
06/09/04	03B0396AE	M. AKERS	NA	NA	1.394	1.414	4335	mS/cm
06/09/04	03B0396AE	M. AKERS	NA	NA	NA	240	4066	ORP mV
06/10/04	03B0396AE	M. AKERS	NA	NA	3.78	4.00	3390	pH
06/10/04	03B0396AE	M. AKERS	NA	NA	6.95	7.00	3472	pH
06/10/04	03B0396AE	M. AKERS	NA	NA	1.455	1.414	4335	mS/cm
06/10/04	03B0396AE	M. AKERS	NA	NA	NA	242	4066	ORP mV

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: WATER QUALITY METER / 650 MDS

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: YSI

PROJECT No.: N4250

SERIAL NUMBER: 05314

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	05314	H. ENGLE	NA	NA	3.77	4.00	3390	pH
06/07/04	05314	H. ENGLE	NA	NA	6.81	7.00	3472	pH
06/07/04	05314	H. ENGLE	NA	NA	1.221	1.414	4335	mS/cm
06/07/04	05314	H. ENGLE	NA	NA	NA	242	4066	ORP mV
06/08/04	05314	H. ENGLE	NA	NA	3.72	4.00	3390	pH
06/08/04	05314	H. ENGLE	NA	NA	6.88	7.00	3472	pH
06/08/04	05314	H. ENGLE	NA	NA	1.254	1.414	4335	mS/cm
06/08/04	05314	H. ENGLE	NA	NA	NA	241	4066	ORP mV
06/09/04	05314	M. AKERS	NA	NA	3.88	4.00	3390	pH
06/09/04	05314	M. AKERS	NA	NA	6.89	7.00	3472	pH
06/09/04	05314	M. AKERS	NA	NA	1.394	1.414	4335	mS/cm
06/09/04	05314	M. AKERS	NA	NA	NA	241	4066	ORP mV
06/10/04	05314	M. AKERS	NA	NA	3.84	4.00	3390	pH
06/10/04	05314	M. AKERS	NA	NA	6.99	7.00	3472	pH
06/10/04	05314	M. AKERS	NA	NA	1.401	1.414	4335	mS/cm
06/10/04	05314	M. AKERS	NA	NA	NA	252	4066	ORP mV

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: WATER QUALITY METER / 556 MDS

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: YSI

PROJECT No.: N4250

SERIAL NUMBER: 02H0167-AB

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	02H0167-AB	H. ENGLE	NA	NA	3.81	4.00	3390	pH
06/07/04	02H0167-AB	H. ENGLE	NA	NA	6.91	7.00	3472	pH
06/07/04	02H0167-AB	H. ENGLE	NA	NA	1.321	1.414	4335	mS/cm
06/07/04	02H0167-AB	H. ENGLE	NA	NA	NA	240	4066	ORP mV
06/08/04	02H0167-AB	H. ENGLE	NA	NA	3.71	4.00	3390	pH
06/08/04	02H0167-AB	H. ENGLE	NA	NA	6.92	7.00	3472	pH
06/08/04	02H0167-AB	H. ENGLE	NA	NA	1.116	1.414	4335	mS/cm
06/08/04	02H0167-AB	H. ENGLE	NA	NA	NA	234	4066	ORP mV
06/09/04	02H0167-AB	M. AKERS	NA	NA	3.82	4.00	3390	pH
06/09/04	02H0167-AB	M. AKERS	NA	NA	6.94	7.00	3472	pH
06/09/04	02H0167-AB	M. AKERS	NA	NA	1.401	1.414	4335	mS/cm
06/09/04	02H0167-AB	M. AKERS	NA	NA	NA	242	4066	ORP mV
06/10/04	02H0167-AB	M. AKERS	NA	NA	3.77	4.00	3390	pH
06/10/04	02H0167-AB	M. AKERS	NA	NA	6.86	7.00	3472	pH
06/10/04	02H0167-AB	M. AKERS	NA	NA	1.520	1.414	4335	mS/cm
06/10/04	02H0167-AB	M. AKERS	NA	NA	NA	246	4066	ORP mV

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: TURBIDOMETER / 2020

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: LaMOTTE

PROJECT No.: N4250

SERIAL NUMBER: 04584

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	04584	H. ENGLE	NA	NA	9.68	10.00	NA	NTU
06/08/04	04584	H. ENGLE	NA	NA	9.77	10.00	NA	NTU
06/09/04	04584	H. ENGLE	NA	NA	9.81	10.00	NA	NTU
06/10/04	04584	H. ENGLE	NA	NA	9.92	10.00	NA	NTU
06/10/04	04584	H. ENGLE	NA	NA	9.99	10.00	NA	NTU

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: TURBIDOMETER / 2020

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: LaMOTTE

PROJECT No.: N4250

SERIAL NUMBER: 01803

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	01803	H. ENGLE	NA	NA	9.87	10.00	NA	NTU
06/08/04	01803	H. ENGLE	NA	NA	9.91	10.00	NA	NTU
06/09/04	01803	H. ENGLE	NA	NA	9.95	10.00	NA	NTU
06/10/04	01803	H. ENGLE	NA	NA	10.00	10.00	NA	NTU
06/10/04	01803	H. ENGLE	NA	NA	10.00	10.00	NA	NTU

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: TURBIDOMETER / 2020

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: LaMOTTE

PROJECT No.: N4250

SERIAL NUMBER: 02953

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	02953	H. ENGLE	NA	NA	10.00	10.00	NA	NTU
06/08/04	02953	H. ENGLE	NA	NA	9.81	10.00	NA	NTU
06/09/04	02953	H. ENGLE	NA	NA	9.88	10.00	NA	NTU
06/10/04	02953	H. ENGLE	NA	NA	9.91	10.00	NA	NTU
06/10/04	02953	H. ENGLE	NA	NA	10.01	10.00	NA	NTU

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: WATER QUALITY METER / 650 MDS

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: YSI

PROJECT No.: N4250

SERIAL NUMBER: 01954

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	01954	H. ENGLE	NA	NA	3.92	4.00	3390	pH
06/07/04	01954	H. ENGLE	NA	NA	6.88	7.00	3472	pH
06/07/04	01954	H. ENGLE	NA	NA	1.246	1.414	4335	mS/cm
06/07/04	01954	H. ENGLE	NA	NA	NA	240	4066	ORP mV
06/08/04	01954	H. ENGLE	NA	NA	3.88	4.00	3390	pH
06/08/04	01954	H. ENGLE	NA	NA	6.82	7.00	3472	pH
06/08/04	01954	H. ENGLE	NA	NA	1.331	1.414	4335	mS/cm
06/08/04	01954	H. ENGLE	NA	NA	NA	242	4066	ORP mV
06/09/04	01954	M. AKERS	NA	NA	3.91	4.00	3390	pH
06/09/04	01954	M. AKERS	NA	NA	6.93	7.00	3472	pH
06/09/04	01954	M. AKERS	NA	NA	1.335	1.414	4335	mS/cm
06/09/04	01954	M. AKERS	NA	NA	NA	241	4066	ORP mV
06/10/04	01954	M. AKERS	NA	NA	3.81	4.00	3390	pH
06/10/04	01954	M. AKERS	NA	NA	6.75	7.00	3472	pH
06/10/04	01954	M. AKERS	NA	NA	1.342	1.414	4335	mS/cm
06/10/04	01954	M. AKERS	NA	NA	NA	250	4066	ORP mV

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : TREATABILITY STUDY AT SITE 1140 NW

INSTRUMENT NAME/MODEL: TURBIDOMETER / 2020

SITE NAME: SITE 1140 NW, OLF BRONSON

MANUFACTURER: LaMOTTE

PROJECT No.: N4250

SERIAL NUMBER: 04599

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
06/07/04	04599	H. ENGLE	NA	NA	9.88	10.00	NA	NTU
06/08/04	04599	H. ENGLE	NA	NA	9.91	10.00	NA	NTU
06/09/04	04599	H. ENGLE	NA	NA	9.85	10.00	NA	NTU
06/10/04	04599	H. ENGLE	NA	NA	9.96	10.00	NA	NTU
06/10/04	04599	H. ENGLE	NA	NA	9.99	10.00	NA	NTU

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: TS @ 3 Sites, NAS Pensacola
Project No.: N5967
Location: UST Site 14
Personnel: H. Engle, P. Leverette
Weather Conditions: Sunny
Measuring Device: Heron Dipper-T Water Level Indicator
Tidally Influenced: Yes ____ No __X__
Remarks:

Well or Piezometer Number	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW-1S	06/08/04	1400	18.75	22.96	17.47	NA	1.28	
MS-2S	06/08/04	1402	20.46	23.32	18.18	NA	2.28	
MW-3S	06/08/04	1404	18.56	23.52	17.14	NA	1.42	
MW-4S	06/08/04	1406	24.29	23.00	20.56	NA	3.73	
MW-5S	06/08/04	1408	20.79	22.96	16.96	NA	3.83	
TW-4	06/08/04	1411	25.21	28.12	24.11	NA	1.10	
MW-100	06/08/04	1412	25.46	28.34	24.29	NA	1.17	
30GS146	06/08/04	1414	NA	31.55	22.97	NA	NA	

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAS Pensacola - GW TS @ SITE 14
Project No.: N5967 / CTO 302

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-14-MW-1S-05
Sample Location: MW-1S
Sampled By: AP/PL
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 06/08/04 Time: 1425	Color Visual	pH Standard	S.C. mS/cm	Temp. ^{0}C	Turbidity NTU	DO mg/l	ORP mV	Time
Method: Peristaltic	CLEAR	6.34	0.235	22.87	1.1	1.09	9.6	1425

PURGE DATA:

Date: 06/08/04	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	Time
Method: Peristaltic	2 L	6.34	0.239	22.89	11.8	1.20	6.5	1405
Monitor Reading (ppm):	4 L	6.35	0.237	22.92	3.7	1.22	7.4	1410
Well Casing Diameter & Material	6 L	6.34	0.236	22.90	2.4	1.18	9.6	1415
Type: 1" PVC	8 L	6.34	0.235	22.88	2.6	1.12	10.0	1420
Total Well Depth (TD): 22.96	10 L	6.34	0.235	22.87	1.1	1.09	9.6	1425
Static Water Level (WL): 17.47								
One Casing Volume(gal/L): 1.2 L								
Start Purge (hrs): 1400								
End Purge (hrs): 1425								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 10 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW-846 8270SIM -- PAH	NA	2 - 1L Amber	YES
USEPA 415.1 -- TOC	H2S04	2 - 40mL VOA	YES
USEPA 375.4 -- SULFATE	4degC	1 - 125mL HDPE	YES

NATURAL ATTENUATION PARAMETERS / OBSERVATIONS / NOTES

Dissolved Oxygen	1.0 mg/L
Ferrous Iron	1.14 mg/L
Hydrogen Sulfide	ND
Carbon Dioxide	22 mg/L
Alkalinity	60 mg/L
Sulfide	0.01 mg/L

Samples Shipped to Katahdin Analytical

Circle if Applicable:

MS/MSD **Duplicate ID No.:**

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAS Pensacola - GW TS @ SITE 14
Project No.: N5967 / CTO 302

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-14-MW-2S-05
Sample Location: MW-2S
Sampled By: H. ENGLE
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 06/08/04	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	
Time: 1452	Visual	Standard	mS/cm	^{0}C	NTU	mg/l	mV	Time
Method: Peristaltic	CLEAR	6.38	0.312	22.49	3.52	0.81	-63.9	1449

PURGE DATA:

Date: 06/08/04	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	Time
Method: Peristaltic	1.8 L	6.37	0.312	22.48	3.54	0.86	-64.5	1443
Monitor Reading (ppm):	3.6 L	6.35	0.311	22.49	3.51	0.85	-64.7	1446
Well Casing Diameter & Material	5.4 L	6.38	0.312	22.49	3.52	0.81	-63.9	1449
Type: 1" PVC								
Total Well Depth (TD): 23.32								
Static Water Level (WL): 18.15								
One Casing Volume(gal/L): 0.64 L								
Start Purge (hrs): 1440								
End Purge (hrs): 1449								
Total Purge Time (min): 9								
Total Vol. Purged (gal/L): 5.4 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW-846 8270SIM -- PAH	NA	2 - 1L Amber	YES
USEPA 415.1 -- TOC	H2S04	2 - 40mL VOA	YES
USEPA 375.4 -- SULFATE	4degC	1 - 125mL HDPE	YES

NATURAL ATTENUATION PARAMETERS / OBSERVATIONS / NOTES

Dissolved Oxygen	1.0 mg/L
Ferrous Iron	1.46 mg/L
Hydrogen Sulfide	0.50 mg/L
Carbon Dioxide	25 mg/L
Alkalinity	45 mg/L
Sulfide	0.11 mg/L

Samples Shipped to Katahdin Analytical

Circle if Applicable:

MS/MSD **Duplicate ID No.:**

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAS Pensacola - GW TS @ SITE 14
Project No.: N5967 / CTO 302

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-14-MW-4S-05
Sample Location: MW-4S
Sampled By: AP/PL
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 06/08/2004 Time: 1555	Color Visual	pH Standard	S.C. mS/cm	Temp. ^{0}C	Turbidity NTU	DO mg/l	ORP mV	Time
Method: Peristaltic	CLEAR	6.44	0.264	22.74	2.7	2.80	8.9	1555

PURGE DATA:

Date: 06/08/2004	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	Time
Method: Peristaltic	2 L	6.40	0.335	22.80	21.2	2.85	-22.9	1540
Monitor Reading (ppm):	4 L	6.45	0.271	22.70	4.2	2.81	-3.6	1545
Well Casing Diameter & Material	6 L	6.44	0.269	22.73	4.1	2.80	8.3	1550
Type: 1" PVC	8 L	6.44	0.264	22.74	2.7	2.80	8.9	1555
Total Well Depth (TD): 23.00								
Static Water Level (WL): 20.56								
One Casing Volume(gal/L): 1.2 L								
Start Purge (hrs): 1535								
End Purge (hrs): 1555								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 8 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW-846 8270SIM -- PAH	NA	2 - 1L Amber	YES
USEPA 415.1 -- TOC	H2S04	2 - 40mL VOA	YES
USEPA 375.4 -- SULFATE	4degC	1 - 125mL HDPE	YES

NATURAL ATTENUATION PARAMETERS / OBSERVATIONS / NOTES

Dissolved Oxygen	2.0 mg/L
Ferrous Iron	1.71 mg/L
Hydrogen Sulfide	ND
Carbon Dioxide	27 mg/L
Alkalinity	50 mg/L
Sulfide	0.01 mg/L

Samples Shipped to Katahdin Analytical

Circle if Applicable:

MS/MSD **Duplicate ID No.:**

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAS Pensacola - GW TS @ SITE 14
Project No.: N5967 / CTO 302

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-14-30GS146-05
Sample Location: 30GS146
Sampled By: WHE
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 06/08/2004 Time: 1614	Color Visual	pH Standard	S.C. mS/cm	Temp. ^{0}C	Turbidity NTU	DO mg/l	ORP mV	Time
Method: Peristaltic	CLEAR	6.90	0.146	23.20	0.90	8.18	265.3	1613

PURGE DATA:

Date: 06/08/2004	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	Time
Method: Peristaltic	4.2 L	6.91	0.146	23.14	0.90	8.30	259.1	1607
Monitor Reading (ppm):	6.0 L	6.89	0.146	23.22	0.90	8.20	279.1	1610
Well Casing Diameter & Material	7.8 L	6.90	0.146	23.20	0.90	8.18	265.3	1613
Type: 2" PVC								
Total Well Depth (TD): 31.55								
Static Water Level (WL): 22.97								
One Casing Volume(gal/L): 4.2 L								
Start Purge (hrs): 1600								
End Purge (hrs): 1613								
Total Purge Time (min): 13								
Total Vol. Purged (gal/L): 7.8 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW-846 8270SIM -- PAH	NA	2 - 1L Ambers	YES
USEPA 415.1 -- TOC	H2S04	2 - 40mL VOA Vials	YES
USEPA 375.4 -- SULFATE	4degC	1 - 125mL HDPE	YES

NATURAL ATTENUATION PARAMETERS / OBSERVATIONS / NOTES

Dissolved Oxygen	6.0 mg/L
Ferrous Iron	0.08 mg/L
Hydrogen Sulfide	ND
Carbon Dioxide	< 10 mg/L
Alkalinity	17 mg/L
Sulfide	ND

Samples Shipped to Katahdin Analytical

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAS Pensacola - GW TS @ SITE 14
Project No.: N5967 / CTO 302

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: PEN-14-TW4-05
Sample Location: TW-4
Sampled By: AP/PL
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 06/08/04 Time: 1505	Color Visual	pH Standard	S.C. mS/cm	Temp. ^{0}C	Turbidity NTU	DO mg/l	ORP mV	Time
Method: Peristaltic	CLEAR	6.45	0.423	22.18	3.6	1.22	-99.3	1505

PURGE DATA:

Date: 06/08/04	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	Time
Method: Peristaltic	2.0 L	6.44	0.250	23.18	20.5	2.15	77.9	1445
Monitor Reading (ppm):	4.0 L	6.50	0.419	22.21	5.4	1.30	-84.3	1450
Well Casing Diameter & Material	6.0 L	6.48	0.422	22.20	4.1	1.26	-92.7	1455
Type: 2" PVC	8.0 L	6.46	0.423	22.18	4.4	1.24	-91.8	1500
Total Well Depth (TD): 28.12	10.0 L	6.45	0.423	22.18	3.6	1.22	-99.3	1505
Static Water Level (WL): 24.11								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1440								
End Purge (hrs): 1505								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 10 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
SW-846 8270SIM -- PAH	NA	2 - 1L Ambers	YES
USEPA 415.1 -- TOC	H2S04	2 - 40mL VOA Vials	YES
USEPA 375.4 -- SULFATE	4degC	1 - 125mL HDPE	YES

NATURAL ATTENUATION PARAMETERS / OBSERVATIONS / NOTES

Dissolved Oxygen	1.0 mg/L
Ferrous Iron	1.24 mg/L
Hydrogen Sulfide	2.0 mg/L
Carbon Dioxide	75 mg/L
Alkalinity	150 mg/L
Sulfide	0.70 mg/L

Samples Shipped to Katahdin Analytical

Circle if Applicable:

MS/MSD **Duplicate ID No.:**

Signature(s):

TBD: To Be Determined

APPENDIX B

GROUNDWATER ANALYTICAL SUMMARY REPORT

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	14GS01	14GS02	14S006	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S
SAMPLE ID	014G000100-022494	014G000200-022394	014W000601-121294	681-82-1S-01	681-82-1S-01RE	NASP-681-682-MW1S	NASP-681682-MW-1-20020312	NASP-681/682-MW1S	PEN-681/682-MW1S-02
SAMPLE DATE	02/24/94	02/23/94	12/12/94	10/26/99	10/26/99	08/25/01	03/12/02	08/12/02	11/19/02
Volatile Organics (ug/L)									
1,1,1-TRICHLOROETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
1,1,2,2-TETRACHLOROETHANE	10 U	10 U	1 U	2 U	--	1 U	--	--	--
1,1,2-TRICHLOROETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
1,1-DICHLOROETHANE	10 U	10 U	1 U	1 U	--	0.66 J	--	--	--
1,1-DICHLOROETHENE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
1,2,4-TRICHLOROBENZENE	13 U	13 U	5 U	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	1 U	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	1 U	1	--	1 U	0.02 UJ	--	--
1,2-DICHLOROBENZENE	13 U	13 U	1 U	1 U	--	1 U	--	--	--
1,2-DICHLOROETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
1,2-DICHLOROPROPANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
1,3-DICHLOROBENZENE	13 U	13 U	1 U	--	--	1 U	--	--	--
1,4-DICHLOROBENZENE	13 U	13 U	1 U	1 U	--	1 U	--	--	--
2-BUTANONE	10 U	10 U	5 U	--	--	--	--	--	--
2-CHLOROETHYL VINYL ETHER	--	--	--	--	--	--	--	--	--
2-HEXANONE	10 U	10 U	5 U	--	--	--	--	--	--
4-METHYL-2-PENTANONE	10 U	10 U	5 U	--	--	--	--	--	--
ACETONE	10 U	58 U	5 U	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--	--	--
BENZENE	10 U	10 U	1 U	1 U	--	1 U	--	1 U	1 U
BROMOCHLOROMETHANE	--	--	1 U	--	--	--	--	--	--
BROMODICHLOROMETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
BROMOFOR	10 U	10 U	1 U	1 U	--	1 U	--	--	--
BROMOMETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CARBON DISULFIDE	10 U	10 U	1 U	--	--	--	--	--	--
CARBON TETRACHLORIDE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CHLOROBENZENE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CHLORODIBROMOMETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CHLOROETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CHLOROFORM	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CHLOROMETHANE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
CIS-1,2-DICHLOROETHENE	--	--	1 U	1 U	--	0.69 U	--	--	--
CIS-1,3-DICHLOROPROPENE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
DIBROMOCHLOROPROPANE	--	--	--	0.02 U	--	--	--	--	--
DICHLORODIFLUOROMETHANE	--	--	--	1 U	--	1 U	--	--	--
ETHYLBENZENE	10 U	10 U	1 U	1 U	--	1 U	--	0.33 J	1 U
M+P-XYLENES	--	--	--	2 U	--	1 U	--	--	--
METHYL TERT-BUTYL ETHER	--	--	--	2 U	--	1 U	--	--	--
METHYLENE CHLORIDE	10 U	10 U	2 U	3 U	--	1 U	--	--	--
O-XYLENE	--	--	--	1 U	--	1 U	--	--	--
STYRENE	10 U	10 U	1 U	--	--	--	--	--	--
TETRACHLOROETHENE	10 U	10 U	1 U	1 U	--	0.65 J	--	--	--
TOLUENE	10 U	10 U	1 U	1 U	--	1 U	--	1 U	1 U
TOTAL 1,2-DICHLOROETHENE	10 U	10 U	--	--	--	--	--	--	--
TOTAL XYLENES	10 U	10 U	1 U	--	--	--	--	3 U	1 U
TRANS-1,2-DICHLOROETHENE	--	--	1 U	1 U	--	1 U	--	--	--
TRANS-1,3-DICHLOROPROPENE	10 U	10 U	1 U	1 U	--	1 U	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	14GS01	14GS02	14S006	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S
SAMPLE ID	014G000100-022494	014G000200-022394	014W000601-121294	681-82-1S-01	681-82-1S-01RE	NASP-681-682-MW1S	NASP-681682-MW-1-20020312	NASP-681/682-MW1S	PEN-681/682-MW1S-02
SAMPLE DATE	02/24/94	02/23/94	12/12/94	10/26/99	10/26/99	08/25/01	03/12/02	08/12/02	11/19/02
TRICHLOROETHENE	10 U	10 U	1 U	1 U	--	0.74 J	--	--	--
TRICHLOROFLUOROMETHANE	--	--	--	1 U	--	1 U	--	--	--
VINYL CHLORIDE	10 U	10 U	1 U	1 U	--	1 U	--	--	--
Semivolatile Organics (ug/L)									
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIPHENYLHYDRAZINE	--	--	--	--	--	--	--	--	--
1-METHYLNAPHTHALENE	--	--	--	1 U	--	0.111 U	--	1 U	2 U
2,2'-OXYBIS(1-CHLOROPROPANE)	13 U	13 U	5 U	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	33 U	31 U	20 U	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
2,4-DICHLOROPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
2,4-DINITROPHENOL	33 U	31 U	20 U	--	--	--	--	--	--
2,4-DINITROTOLUENE	13 U	13 U	5 U	--	--	--	--	--	--
2,6-DINITROTOLUENE	13 U	13 U	5 U	--	--	--	--	--	--
2-CHLORONAPHTHALENE	13 U	13 U	5 U	--	--	--	--	--	--
2-CHLOROPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
2-METHYLNAPHTHALENE	13 U	13 U	5 U	1 U	--	0.111 U	--	1 U	2 U
2-METHYLPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
2-NITROANILINE	33 U	31 U	20 U	--	--	--	--	--	--
2-NITROPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
3&4-METHYLPHENOL	--	--	--	--	--	--	--	--	--
3,3'-DICHLOROBENZIDINE	13 U	13 U	5 U	--	--	--	--	--	--
3-NITROANILINE	33 U	31 U	20 U	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	33 U	31 U	20 U	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	13 U	13 U	5 U	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
4-CHLOROANILINE	13 U	13 U	5 U	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	13 U	13 U	5 U	--	--	--	--	--	--
4-METHYLPHENOL	13 U	13 U	5 U	--	--	--	--	--	--
4-NITROANILINE	33 U	31 U	20 U	--	--	--	--	--	--
4-NITROPHENOL	33 U	31 U	20 U	--	--	--	--	--	--
ACENAPHTHENE	13 U	13 U	5 U	0.50 U	--	0.111 U	--	0.21 J	0.28 J
ACENAPHTHYLENE	13 U	13 U	5 U	1 U	--	0.111 U	--	1 U	1.5
ANTHRACENE	13 U	13 U	5 U	0.11	--	0.111 U	--	0.20 U	0.03 J
BENZIDINE	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
BENZO(A)PYRENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
BENZO(B)FLUORANTHENE	13 U	13 U	5 U	0.10 U	--	0.111 U	--	0.20 U	0.10 U
BENZO(G,H,I)PERYLENE	13 U	13 U	5 U	0.10 U	--	0.111 U	--	0.20 U	0.10 U
BENZO(K)FLUORANTHENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	13 U	13 U	5 U	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	13 U	13 U	5 U	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--
CARBAZOLE	13 U	13 U	--	--	--	--	--	--	--
CHRYSENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
DI-N-BUTYL PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	14GS01	14GS02	14S006	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S
SAMPLE ID	014G000100-022494	014G000200-022394	014W000601-121294	681-82-1S-01	681-82-1S-01RE	NASP-681-682-MW1S	NASP-681682-MW-1-20020312	NASP-681/682-MW1S	PEN-681/682-MW1S-02
SAMPLE DATE	02/24/94	02/23/94	12/12/94	10/26/99	10/26/99	08/25/01	03/12/02	08/12/02	11/19/02
DIBENZO(A,H)ANTHRACENE	13 U	13 U	5 U	0.10 U	--	0.111 U	--	0.20 U	0.10 U
DIBENZOFURAN	13 U	13 U	5 U	--	--	--	--	--	--
DIETHYL PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--
DIMETHYL PHTHALATE	13 U	13 U	5 U	--	--	--	--	--	--
FLUORANTHENE	13 U	13 U	5 U	0.10 U	--	0.111 U	--	0.20 U	0.10 U
FLUORENE	13 U	13 U	5 U	0.10 U	--	0.111 U	--	0.29 J	0.095 J
HEXACHLOROBENZENE	13 U	13 U	5 U	--	--	--	--	--	--
HEXACHLOROBUTADIENE	13 U	13 U	5 U	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	13 U	13 U	5 U	--	--	--	--	--	--
HEXACHLOROETHANE	13 U	13 U	5 U	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
ISOPHORONE	13 U	13 U	5 U	--	--	--	--	--	--
N-NITROSO-DI-N-PROPYLAMINE	13 U	13 U	5 U	--	--	--	--	--	--
N-NITROSODIMETHYLAMINE	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	13 U	13 U	5 U	--	--	--	--	--	--
NAPHTHALENE	13 U	13 U	5 U	5.6	--	0.111 U	--	1 U	1.2 J
NITROBENZENE	13 U	13 U	5 U	--	--	--	--	--	--
PENTACHLOROPHENOL	33 U	31 U	20 U	--	--	--	--	--	--
PHENANTHRENE	13 U	13 U	5 U	1 U	--	0.111 U	--	0.20 U	1 U
PHENOL	13 U	13 U	5 U	--	--	--	--	--	--
PYRENE	13 U	13 U	5 U	0.05 U	--	0.111 U	--	0.20 U	0.10 U
Pesticides/PCBs (ug/L)									
4,4'-DDD	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
4,4'-DDE	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
4,4'-DDT	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
ALDRIN	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
ALPHA-BHC	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
ALPHA-CHLORDANE	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
AROCLOR-1016	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
AROCLOR-1221	2.4 UJ	2.5 UJ	0.40 U	--	--	--	--	--	--
AROCLOR-1232	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
AROCLOR-1242	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
AROCLOR-1248	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
AROCLOR-1254	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
AROCLOR-1260	1.2 UJ	1.2 UJ	0.20 U	--	--	--	--	--	--
BETA-BHC	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
DELTA-BHC	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
DIELDRIN	0.12 UJ	0.12 UJ	0.01 U	--	--	--	--	--	--
ENDOSULFAN I	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
ENDOSULFAN II	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
ENDOSULFAN SULFATE	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
ENDRIN	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
ENDRIN ALDEHYDE	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
ENDRIN KETONE	0.12 UJ	0.12 UJ	0.02 U	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
GAMMA-CHLORDANE	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
HEPTACHLOR	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	0.059 UJ	0.062 UJ	0.01 U	--	--	--	--	--	--
METHOXYCHLOR	0.59 UJ	0.62 UJ	0.10 U	--	--	--	--	--	--
TOXAPHENE	5.9 UJ	6.2 UJ	1 U	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	14GS01	14GS02	14S006	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S
SAMPLE ID	014G000100-022494	014G000200-022394	014W000601-121294	681-82-1S-01	681-82-1S-01RE	NASP-681-682-MW1S	NASP-681682-MW-1-20020312	NASP-681/682-MW1S	PEN-681/682-MW1S-02
SAMPLE DATE	02/24/94	02/23/94	12/12/94	10/26/99	10/26/99	08/25/01	03/12/02	08/12/02	11/19/02
Inorganics (ug/L)									
ALUMINUM	2330 J	202 J	77.9 U	--	--	--	--	--	--
ANTIMONY	15.6 U	15.6 U	1.9 U	--	--	--	--	--	--
ARSENIC	18.8 J	6.7 J	10.5	--	--	--	--	--	--
BARIUM	8.6 U	16.2 U	19 J	--	--	--	--	--	--
BERYLLIUM	0.40 U	0.40 U	0.10 U	--	--	--	--	--	--
CADMIUM	2.1 U	2.1 U	0.50 U	--	--	--	--	--	--
CALCIUM	105000	176000	75900	--	--	--	--	--	--
CHROMIUM	10	2.3 U	2.4	--	--	--	--	--	--
COBALT	3.2 U	3.2 U	0.50 U	--	--	--	--	--	--
COPPER	2.6 U	2.6 U	3.6 U	--	--	5 U	--	--	--
CYANIDE	1 U	1 U	10 UJ	--	--	--	--	--	--
IRON	3990 J	1660 J	519	--	--	--	--	--	--
LEAD	3.4 U	0.70 U	1.6 U	5 U	--	2 U	--	--	--
MAGNESIUM	158000	283000	124000	--	--	--	--	--	--
MANGANESE	261 J	314 J	63.6	--	--	--	--	--	--
MERCURY	0.10 U	0.10 U	0.20 U	--	--	--	--	--	--
NICKEL	10.4 U	10.4 U	1.8	--	--	--	--	--	--
POTASSIUM	62100	105000	124000	--	--	--	--	--	--
SELENIUM	1.7 UJ	1.7 UJ	4.4 U	--	--	--	--	--	--
SILVER	3.6 UJ	3.6 UJ	0.60 U	--	--	--	--	--	--
SODIUM	1670000 J	2820000 J	1650000 J	--	--	--	--	--	--
THALLIUM	2.8 U	2.8 U	10.2	--	--	--	--	--	--
VANADIUM	13.6 U	10.2 U	5.6	--	--	--	--	--	--
ZINC	6.7 UJ	1.7 UJ	15.5 U	--	--	--	--	--	--
Petroleum Hydrocarbons (mg/L)									
TOTAL PETROLEUM HYDROCARBONS	--	--	--	0.20 U	--	0.889	--	0.30 U	0.30 U
Miscellaneous Parameters (mg/L)									
ETHANE	--	--	--	0.001 U	--	--	--	--	--
ETHENE	--	--	--	0.001 U	--	--	--	--	--
METHANE	--	--	--	1.4	13000	--	--	--	--
NITRATE	--	--	--	0.02 U	--	--	--	--	--
NITRITE	--	--	--	0.01 U	--	--	--	--	--
NITRITE/NITRATE	--	--	--	0.02 U	--	--	--	--	--
SULFATE	--	--	--	10	--	--	--	--	--
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--	--

Notes:
- = Not analyzed
J = Estimated concentration
U = non-detect value
µg/L = micrograms per liter
mg/L = milligrams per liter
NS = Not sampled

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S
SAMPLE ID	PEN-681/682-MW1S-02-D	PEN-681/682-MW1S-01	PEN-681/682-MW1S-02-092303	PEN-681/682-MW1S-03	PEN-681/682-MW-1S-03	PEN-14-MW1S-05	681-82-2S-01	NASP-681-682-MW2	NASP-681/682-MW2S
SAMPLE DATE	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	08/25/01	08/12/02
Volatile Organics (ug/L)									
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	1 U	1 U	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	2 U	1 U	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	1 U	1 U	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	1 U	1 U	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	1 U	1 U	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	--	--	--	0.02 U	1 U	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	1 U	1 U	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	1 U	1 U	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	1 U	1 U	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	1 U	1 U	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	1 U	1 U	--
2-BUTANONE	--	--	--	--	--	--	--	--	--
2-CHLOROETHYL VINYL ETHER	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--	--	--
BENZENE	1 U	--	--	--	--	--	1 U	1 U	1 U
BROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	1 U	1 U	--
BROMOFOR	--	--	--	--	--	--	1 U	1 U	--
BROMOMETHANE	--	--	--	--	--	--	1 U	1 U	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	1 U	1 U	--
CHLOROBENZENE	--	--	--	--	--	--	1 U	1 U	--
CHLORODIBROMOMETHANE	--	--	--	--	--	--	1 U	1 U	--
CHLOROETHANE	--	--	--	--	--	--	1 U	1 U	--
CHLOROFORM	--	--	--	--	--	--	1 U	1 U	--
CHLOROMETHANE	--	--	--	--	--	--	1 U	1 U	--
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	--	1 U	1 U	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	1 U	1 U	--
DIBROMOCHLOROPROPANE	--	--	--	--	--	--	0.02 U	--	--
DICHLORODIFLUOROMETHANE	--	--	--	--	--	--	1 U	1 U	--
ETHYLBENZENE	1 U	--	--	--	--	--	1 U	1 U	1 U
M+P-XYLENES	--	--	--	--	--	--	2 U	1 U	--
METHYL TERT-BUTYL ETHER	--	--	--	--	--	--	2 U	1 U	--
METHYLENE CHLORIDE	--	--	--	--	--	--	3 U	1 U	--
O-XYLENE	--	--	--	--	--	--	1 U	1 U	--
STYRENE	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	1 U	0.68 J	--
TOLUENE	1 U	--	--	--	--	--	1 U	1 U	1 U
TOTAL 1,2-DICHLOROETHENE	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	1 U	--	--	--	--	--	--	--	3 U
TRANS-1,2-DICHLOROETHENE	--	--	--	--	--	--	1 U	1 U	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	1 U	1 U	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S
SAMPLE ID	PEN-681/682-MW1S-02-D	PEN-681/682-MW1S-01	PEN-681/682-MW1S-02-092303	PEN-681/682-MW1S-03	PEN-681/682-MW-1S-03	PEN-14-MW1S-05	681-82-2S-01	NASP-681-682-MW2	NASP-681/682-MW2S
SAMPLE DATE	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	08/25/01	08/12/02
TRICHLOROETHENE	--	--	--	--	--	--	1 U	1 U	--
TRICHLOROFLUOROMETHANE	--	--	--	--	--	--	1 U	1 U	--
VINYL CHLORIDE	--	--	--	--	--	--	1 U	1 U	--
Semivolatile Organics (ug/L)									
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIPHENYLHYDRAZINE	--	--	--	--	--	--	--	--	--
1-METHYLNAPHTHALENE	6.8 J	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.589	1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	0.53 J	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	5.9	0.232	1 U
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--
3&4-METHYLPHENOL	--	--	--	--	--	--	--	--	--
3,3'-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	1 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	1.1	0.347	1 U
ACENAPHTHYLENE	2.4	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.105 U	1 U
ANTHRACENE	1 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.86	0.105 U	0.062 J
BENZIDINE	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08	0.105 U	0.20 U
BENZO(A)PYRENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	0.105 U	0.20 U
BENZO(B)FLUORANTHENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	0.105 U	0.20 U
BENZO(G,H,I)PERYLENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	0.105 U	0.20 U
BENZO(K)FLUORANTHENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	0.105 U	0.20 U
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--	--	--
CHRYSENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	0.105 U	0.20 U
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S
SAMPLE ID	PEN-681/682-MW1S-02-D	PEN-681/682-MW1S-01	PEN-681/682-MW1S-02-092303	PEN-681/682-MW1S-03	PEN-681/682-MW-1S-03	PEN-14-MW1S-05	681-82-2S-01	NASP-681-682-MW2	NASP-681/682-MW2S
SAMPLE DATE	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	08/25/01	08/12/02
DIBENZO(A,H)ANTHRACENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	0.105 U	0.20 U
DIBENZOFURAN	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.10 U	0.105 U	0.20 U
FLUORENE	1 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	7.6	0.579	0.47
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	0.105 U	0.20 U
ISOPHORONE	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-N-PROPYLAMINE	--	--	--	--	--	--	--	--	--
N-NITROSODIMETHYLAMINE	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--
NAPHTHALENE	1.3 J	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.50 U	0.158	0.60 J
NITROBENZENE	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--
PHENANTHRENE	1 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	3.9	0.105 U	0.20 U
PHENOL	--	--	--	--	--	--	--	--	--
PYRENE	0.10 U	0.22 U	0.2 U	0.2 U	0.2 U	0.2 U	0.05 U	0.105 U	0.20 U
Pesticides/PCBs (ug/L)									
4,4'-DDD	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--
ALPHA-BHC	--	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW1S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S
SAMPLE ID	PEN-681/682-MW1S-02-D	PEN-681/682-MW1S-01	PEN-681/682-MW1S-02-092303	PEN-681/682-MW1S-03	PEN-681/682-MW-1S-03	PEN-14-MW1S-05	681-82-2S-01	NASP-681-682-MW2	NASP-681/682-MW2S
SAMPLE DATE	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	08/25/01	08/12/02
Inorganics (ug/L)									
ALUMINUM	--	--	--	--	--	--	--	--	--
ANTIMONY	--	--	--	--	--	--	--	--	--
ARSENIC	--	--	--	--	--	--	--	--	--
BARIUM	--	--	--	--	--	--	--	--	--
BERYLLIUM	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--
CALCIUM	--	--	--	--	--	--	--	--	--
CHROMIUM	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	--	--	--	--	--	--
COPPER	--	--	--	--	--	--	--	5 U	--
CYANIDE	--	--	--	--	--	--	--	--	--
IRON	--	--	--	--	--	--	--	--	--
LEAD	--	--	--	--	--	--	5 U	2 U	--
MAGNESIUM	--	--	--	--	--	--	--	--	--
MANGANESE	--	--	--	--	--	--	--	--	--
MERCURY	--	--	--	--	--	--	--	--	--
NICKEL	--	--	--	--	--	--	--	--	--
POTASSIUM	--	--	--	--	--	--	--	--	--
SELENIUM	--	--	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--	--	--
SODIUM	--	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--	--
VANADIUM	--	--	--	--	--	--	--	--	--
ZINC	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons (mg/L)									
TOTAL PETROLEUM HYDROCARBONS	0.30 U	--	--	--	--	--	0.20 U	2.83	1.1
Miscellaneous Parameters (mg/L)									
ETHANE	--	--	--	--	--	--	0.001 U	--	--
ETHENE	--	--	--	--	--	--	0.001 U	--	--
METHANE	--	--	--	--	--	--	0.061	--	--
NITRATE	--	--	--	--	--	--	0.74	--	--
NITRITE	--	--	--	--	--	--	0.01 U	--	--
NITRITE/NITRATE	--	--	--	--	--	--	0.74	--	--
SULFATE	--	12	14	16	14	11	37	--	--
TOTAL ORGANIC CARBON	--	4.2	4.9	3	4	3.7	--	--	--

Notes:
- = Not analyzed
J = Estimated concentration
U = non-detect value
µg/L = micrograms per liter
mg/L = milligrams per liter
NS = Not sampled

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW3S	NASP-681/682-MW4S
SAMPLE ID	PEN-681/682-MW2S-02	PEN-681/682-MW2S-02R	PEN-681/682-MW2S-01	PEN-681/682-MW2S-02-092303	PEN-681/682-MW2S-03	PEN-681/682-MW-2S-03	PEN-14-MW2S-05	681-82-3S-01	681-82-4S-01
SAMPLE DATE	11/19/02	01/08/03	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	10/26/99
Volatile Organics (ug/L)									
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--	1 U	1.3
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--	2 U	2 U
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--	1 U	1 U
1,1-DICHLOROETHANE	--	--	--	--	--	--	--	1 U	3.8
1,1-DICHLOROETHENE	--	--	--	--	--	--	--	1 U	2
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	--	--	--	--	0.02 U	0.02 U
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--	1 U	1 U
1,2-DICHLOROETHANE	--	--	--	--	--	--	--	1 U	1 U
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--	1 U	1 U
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--	--	1 U
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--	1 U	1 U
2-BUTANONE	--	--	--	--	--	--	--	--	--
2-CHLOROETHYL VINYL ETHER	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--	--	--
BENZENE	1 U	--	--	--	--	--	--	1 U	1 U
BROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--	1 U	1 U
BROMOFOR	--	--	--	--	--	--	--	1 U	1 U
BROMOMETHANE	--	--	--	--	--	--	--	1 U	1 U
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--	1 U	1 U
CHLOROBENZENE	--	--	--	--	--	--	--	1 U	1 U
CHLORODIBROMOMETHANE	--	--	--	--	--	--	--	1 U	1 U
CHLOROETHANE	--	--	--	--	--	--	--	1 U	1 U
CHLOROFORM	--	--	--	--	--	--	--	1.7	5.6
CHLOROMETHANE	--	--	--	--	--	--	--	1 U	1 U
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--	1 U	6.6
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	1 U	1 U
DIBROMOCHLOROPROPANE	--	--	--	--	--	--	--	0.02 U	0.02 U
DICHLORODIFLUOROMETHANE	--	--	--	--	--	--	--	1 U	1 U
ETHYLBENZENE	5.6	--	--	--	--	--	--	1 U	1 U
M+P-XYLENES	--	--	--	--	--	--	--	2 U	2 U
METHYL TERT-BUTYL ETHER	--	--	--	--	--	--	--	2 U	2 U
METHYLENE CHLORIDE	--	--	--	--	--	--	--	3 U	3 U
O-XYLENE	--	--	--	--	--	--	--	1 U	1 U
STYRENE	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--	1 U	14
TOLUENE	1 U	--	--	--	--	--	--	1 U	1 U
TOTAL 1,2-DICHLOROETHENE	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	9.2	--	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--	1 U	1 U
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--	1 U	1 U

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW3S	NASP-681/682-MW4S
SAMPLE ID	PEN-681/682-MW2S-02	PEN-681/682-MW2S-02R	PEN-681/682-MW2S-01	PEN-681/682-MW2S-02-092303	PEN-681/682-MW2S-03	PEN-681/682-MW-2S-03	PEN-14-MW2S-05	681-82-3S-01	681-82-4S-01
SAMPLE DATE	11/19/02	01/08/03	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	10/26/99
TRICHLOROETHENE	--	--	--	--	--	--	--	1 U	2
TRICHLOROFLUOROMETHANE	--	--	--	--	--	--	--	1 U	1 U
VINYL CHLORIDE	--	--	--	--	--	--	--	1 U	1 U
Semivolatile Organics (ug/L)									
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--
1,2-DIPHENYLHYDRAZINE	--	--	--	--	--	--	--	--	--
1-METHYLNAPHTHALENE	220 J	42 J	21	38	46	36	27	1 U	1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	64 J	69	13	39	40	18	9.4	1 U	1 U
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--
3&4-METHYLPHENOL	--	--	--	--	--	--	--	--	--
3,3'-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	100 U	2.4 J	2.3 J	7.8 U	3 J	2.9	2.8	0.50 U	0.50 U
ACENAPHTHYLENE	100 U	10 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	1 U	1 U
ANTHRACENE	100 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 J	0.05 U	0.05 U
BENZIDINE	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
BENZO(A)PYRENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
BENZO(B)FLUORANTHENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.10 U	0.10 U
BENZO(G,H,I)PERYLENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.10 U	0.10 U
BENZO(K)FLUORANTHENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--	--	--
CHRYSENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW3S	NASP-681/682-MW4S
SAMPLE ID	PEN-681/682-MW2S-02	PEN-681/682-MW2S-02R	PEN-681/682-MW2S-01	PEN-681/682-MW2S-02-092303	PEN-681/682-MW2S-03	PEN-681/682-MW-2S-03	PEN-14-MW2S-05	681-82-3S-01	681-82-4S-01
SAMPLE DATE	11/19/02	01/08/03	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	10/26/99
DIBENZO(A,H)ANTHRACENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.10 U	0.10 U
DIBENZOFURAN	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--
FLUORANTHENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.10 U	0.10 U
FLUORENE	5.2 J	4.3 J	4.7	6.4 J	7.3	5.4	4.9	0.10 U	0.10 U
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
ISOPHORONE	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-N-PROPYLAMINE	--	--	--	--	--	--	--	--	--
N-NITROSODIMETHYLAMINE	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--
NAPHTHALENE	67 J	29	3.3 J	25	22	4.3	2.5	0.50 U	0.50 U
NITROBENZENE	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--
PHENANTHRENE	100 U	1.3 J	3.8 U	7.8 U	2.8 J	2	2.3	1 U	1 U
PHENOL	--	--	--	--	--	--	--	--	--
PYRENE	10 U	2 U	3.8 U	7.8 U	4.7 U	0.21 U	0.2 U	0.05 U	0.05 U
Pesticides/PCBs (ug/L)									
4,4'-DDD	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--
ALPHA-BHC	--	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW2S	NASP-681/682-MW3S	NASP-681/682-MW4S
SAMPLE ID	PEN-681/682-MW2S-02	PEN-681/682-MW2S-02R	PEN-681/682-MW2S-01	PEN-681/682-MW2S-02-092303	PEN-681/682-MW2S-03	PEN-681/682-MW-2S-03	PEN-14-MW2S-05	681-82-3S-01	681-82-4S-01
SAMPLE DATE	11/19/02	01/08/03	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04	10/26/99	10/26/99
Inorganics (ug/L)									
ALUMINUM	--	--	--	--	--	--	--	--	--
ANTIMONY	--	--	--	--	--	--	--	--	--
ARSENIC	--	--	--	--	--	--	--	--	--
BARIUM	--	--	--	--	--	--	--	--	--
BERYLLIUM	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--
CALCIUM	--	--	--	--	--	--	--	--	--
CHROMIUM	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	--	--	--	--	--	--
COPPER	--	--	--	--	--	--	--	--	--
CYANIDE	--	--	--	--	--	--	--	--	--
IRON	--	--	--	--	--	--	--	--	--
LEAD	--	--	--	--	--	--	--	5 U	5 U
MAGNESIUM	--	--	--	--	--	--	--	--	--
MANGANESE	--	--	--	--	--	--	--	--	--
MERCURY	--	--	--	--	--	--	--	--	--
NICKEL	--	--	--	--	--	--	--	--	--
POTASSIUM	--	--	--	--	--	--	--	--	--
SELENIUM	--	--	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--	--	--
SODIUM	--	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--	--
VANADIUM	--	--	--	--	--	--	--	--	--
ZINC	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons (mg/L)									
TOTAL PETROLEUM HYDROCARBONS	2.4	--	--	--	--	--	--	0.30 U	0.20 U
Miscellaneous Parameters (mg/L)									
ETHANE	--	--	--	--	--	--	--	--	0.001 U
ETHENE	--	--	--	--	--	--	--	--	0.001 U
METHANE	--	--	--	--	--	--	--	--	0.001 U
NITRATE	--	--	--	--	--	--	--	--	1.3
NITRITE	--	--	--	--	--	--	--	--	0.01 U
NITRITE/NITRATE	--	--	--	--	--	--	--	--	1.3
SULFATE	--	--	7.2	1 U	9.5	26	14	--	13
TOTAL ORGANIC CARBON	--	--	27	14	12	9.4	12	--	--

Notes:
- = Not analyzed
J = Estimated concentration
U = non-detect value
µg/L = micrograms per liter
mg/L = milligrams per liter
NS = Not sampled

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW5S	681-82-DD	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-MW4S	PEN-681/682-MW4S-02	PEN-14-MW4S-05	681-82-5S-01	681-82-DD-01	TW-4	NASP-681-682-TW4	NASP-681-682-TW4-D	NASP-681682-TW-4-20020312	NASP-681/682-TW4
SAMPLE DATE	08/12/02	11/19/02	06/08/04	10/26/99	10/26/99	11/06/00	08/25/01	08/25/01	03/12/02	08/12/02
Volatile Organics (ug/L)										
1,1,1-TRICHLOROETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	2 U	2 U	--	1 U	1 U	--	--
1,1,2-TRICHLOROETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,1-DICHLOROETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,1-DICHLOROETHENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	0.02 U	0.02 U	0.02 U	1 U	1 U	--	--
1,2-DICHLOROBENZENE	--	--	--	1 U	1 U	1 U	1 U	1 U	--	--
1,2-DICHLOROETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,2-DICHLOROPROPANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
1,3-DICHLOROBENZENE	--	--	--	--	1 U	1 U	1 U	1 U	--	--
1,4-DICHLOROBENZENE	--	--	--	1 U	1 U	1 U	1 U	1 U	--	--
2-BUTANONE	--	--	--	--	--	--	--	--	--	--
2-CHLOROETHYL VINYL ETHER	--	--	--	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--	--	--	--
BENZENE	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	--	1 U
BROMOCHLOROMETHANE	--	--	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
BROMOFOR	--	--	--	1 U	1 U	--	1 U	1 U	--	--
BROMOMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CHLOROBENZENE	--	--	--	1 U	1 U	1 U	1 U	1 U	--	--
CHLORODIBROMOMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CHLOROETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CHLOROFORM	--	--	--	1 U	2.5	--	1 U	1 U	--	--
CHLOROMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CIS-1,2-DICHLOROETHENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
DIBROMOCHLOROPROPANE	--	--	--	0.02 U	0.02 U	--	--	--	--	--
DICHLORODIFLUOROMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
ETHYLBENZENE	1 U	1 U	--	1 U	1 U	5.2	5	5.1	--	0.26 J
M+P-XYLENES	--	--	--	2 U	2 U	4	4.9	5.1	--	--
METHYL TERT-BUTYL ETHER	--	--	--	2 U	2 U	2 U	1 U	1 U	--	--
METHYLENE CHLORIDE	--	--	--	3 U	3 U	--	1.2 U	1 U	--	--
O-XYLENE	--	--	--	1 U	1 U	2	1.5	1.7	--	--
STYRENE	--	--	--	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
TOLUENE	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	--	1 U
TOTAL 1,2-DICHLOROETHENE	--	--	--	--	--	--	--	--	--	--
TOTAL XYLENES	3 U	1 U	--	--	--	--	--	--	--	3 U
TRANS-1,2-DICHLOROETHENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW5S	681-82-DD	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-MW4S	PEN-681/682-MW4S-02	PEN-14-MW4S-05	681-82-5S-01	681-82-DD-01	TW-4	NASP-681-682-TW4	NASP-681-682-TW4-D	NASP-681682-TW-4-20020312	NASP-681/682-TW4
SAMPLE DATE	08/12/02	11/19/02	06/08/04	10/26/99	10/26/99	11/06/00	08/25/01	08/25/01	03/12/02	08/12/02
TRICHLOROETHENE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
TRICHLOROFLUOROMETHANE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
VINYL CHLORIDE	--	--	--	1 U	1 U	--	1 U	1 U	--	--
Semivolatile Organics (ug/L)										
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
1,2-DIPHENYLHYDRAZINE	--	--	--	--	--	--	--	--	--	--
1-METHYLNAPHTHALENE	1 U	2 U	0.21 U	1 U	1 U	49	47	49.7	--	1 U
2,2'-OXYBIS(1-CHLOROPROPANE)	--	--	--	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	1 U	2 U	0.21 U	1 U	1 U	21	56.6	59	--	1 U
2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--	--	--	--
3&4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
3,3'-DICHLOROBENZIDINE	--	--	--	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	1 U	1 U	0.21 U	0.50 U	0.50 U	1.1 U	2.69	2.9	--	1 U
ACENAPHTHYLENE	1 U	1 U	0.21 U	1 U	1 U	2 U	0.111 U	0.105 U	--	1 U
ANTHRACENE	0.20 U	1 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
BENZIDINE	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
BENZO(A)PYRENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
BENZO(B)FLUORANTHENE	0.20 U	0.10 U	0.21 U	0.10 U	0.10 U	0.20 U	0.111 U	0.105 U	--	0.20 U
BENZO(G,H,I)PERYLENE	0.20 U	0.10 U	0.21 U	0.10 U	0.10 U	0.20 U	0.111 U	0.105 U	--	0.20 U
BENZO(K)FLUORANTHENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
BENZYL ALCOHOL	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--	--	--	--
CHRYSENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10	0.111 U	0.105 U	--	0.20 U
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW5S	681-82-DD	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-MW4S	PEN-681/682-MW4S-02	PEN-14-MW4S-05	681-82-5S-01	681-82-DD-01	TW-4	NASP-681-682-TW4	NASP-681-682-TW4-D	NASP-681682-TW-4-20020312	NASP-681/682-TW4
SAMPLE DATE	08/12/02	11/19/02	06/08/04	10/26/99	10/26/99	11/06/00	08/25/01	08/25/01	03/12/02	08/12/02
DIBENZO(A,H)ANTHRACENE	0.20 U	0.10 U	0.21 U	0.10 U	0.10 U	0.22 U	0.111 U	0.105 U	--	0.20 U
DIBENZOFURAN	--	--	--	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	0.20 U	0.10 U	0.21 U	0.10 U	0.10 U	0.20 U	0.111 U	0.105 U	--	0.20 U
FLUORENE	0.20 U	1 U	0.21 U	0.13	0.10 U	8.5	4.32	4.67	--	0.20 U
HEXACHLOROBENZENE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
ISOPHORONE	--	--	--	--	--	--	--	--	--	--
N-NITROSO-DI-N-PROPYLAMINE	--	--	--	--	--	--	--	--	--	--
N-NITROSODIMETHYLAMINE	--	--	--	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	1 U	2 U	0.21 U	0.50 U	0.50 U	24	18.2	18.2	--	1 U
NITROBENZENE	--	--	--	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	0.20 U	1 U	0.21 U	1 U	1 U	8.9	1.97	2.13	--	0.20 U
PHENOL	--	--	--	--	--	--	--	--	--	--
PYRENE	0.20 U	0.10 U	0.21 U	0.05 U	0.05 U	0.10 U	0.111 U	0.105 U	--	0.20 U
Pesticides/PCBs (ug/L)										
4,4'-DDD	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--	--	--	--
ALPHA-BHC	--	--	--	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW4S	NASP-681/682-MW5S	681-82-DD	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-MW4S	PEN-681/682-MW4S-02	PEN-14-MW4S-05	681-82-5S-01	681-82-DD-01	TW-4	NASP-681-682-TW4	NASP-681-682-TW4-D	NASP-681682-TW-4-20020312	NASP-681/682-TW4
SAMPLE DATE	08/12/02	11/19/02	06/08/04	10/26/99	10/26/99	11/06/00	08/25/01	08/25/01	03/12/02	08/12/02
Inorganics (ug/L)										
ALUMINUM	--	--	--	--	--	--	--	--	--	--
ANTIMONY	--	--	--	--	--	--	--	--	--	--
ARSENIC	--	--	--	--	--	--	--	--	--	--
BARIUM	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	--	--	--	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--	--	--	--
CALCIUM	--	--	--	--	--	--	--	--	--	--
CHROMIUM	--	--	--	--	--	--	--	--	--	--
COBALT	--	--	--	--	--	--	--	--	--	--
COPPER	--	--	--	--	--	--	5 U	5 U	--	--
CYANIDE	--	--	--	--	--	--	--	--	--	--
IRON	--	--	--	--	--	--	--	--	--	--
LEAD	--	--	--	5 U	5 U	10 U	2.35 J	2 U	--	--
MAGNESIUM	--	--	--	--	--	--	--	--	--	--
MANGANESE	--	--	--	--	--	--	--	--	--	--
MERCURY	--	--	--	--	--	--	--	--	--	--
NICKEL	--	--	--	--	--	--	--	--	--	--
POTASSIUM	--	--	--	--	--	--	--	--	--	--
SELENIUM	--	--	--	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--	--	--	--
SODIUM	--	--	--	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--	--	--	--
VANADIUM	--	--	--	--	--	--	--	--	--	--
ZINC	--	--	--	--	--	--	--	--	--	--
Petroleum Hydrocarbons (mg/L)										
TOTAL PETROLEUM HYDROCARBONS	0.30 U	0.30 U	--	0.20 U	0.20 U	8.8 J	10.5	14.9	18	0.30 U
Miscellaneous Parameters (mg/L)										
ETHANE	--	--	--	--	--	--	--	--	--	--
ETHENE	--	--	--	--	--	--	--	--	--	--
METHANE	--	--	--	--	--	--	--	--	--	--
NITRATE	--	--	--	--	--	--	--	--	--	--
NITRITE	--	--	--	--	--	--	--	--	--	--
NITRITE/NITRATE	--	--	--	--	--	--	--	--	--	--
SULFATE	--	--	11	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	--	--	3.8	--	--	--	--	--	--	--

Notes:
- = Not analyzed
J = Estimated concentration
U = non-detect value
µg/L = micrograms per liter
mg/L = milligrams per liter
NS = Not sampled

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-TW4-D	PEN-681/682-TW4-02	PEN-681/682-TW4-01	PEN-681/682-TW04-02	PEN-681/682-TW4-03	PEN-681/682-TW4-04	PEN-14-TW4-05
SAMPLE DATE	08/12/02	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
Volatile Organics (ug/L)							
1,1,1-TRICHLOROETHANE	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	--	--	--	--	--	--	--
1,1-DICHLOROETHENE	--	--	--	--	--	--	--
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--
1,2,4-TRIMETHYLBENZENE	--	--	--	--	--	--	--
1,2-DIBROMO-3-CHLOROPROPANE	--	--	--	--	--	--	--
1,2-DIBROMOETHANE	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	--	--	--	--	--	--	--
2-BUTANONE	--	--	--	--	--	--	--
2-CHLOROETHYL VINYL ETHER	--	--	--	--	--	--	--
2-HEXANONE	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	--	--	--	--	--	--	--
ACETONE	--	--	--	--	--	--	--
ACROLEIN	--	--	--	--	--	--	--
ACRYLONITRILE	--	--	--	--	--	--	--
BENZENE	1 U	0.87 J	--	--	--	--	--
BROMOCHLOROMETHANE	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	--	--	--	--	--	--	--
BROMOFOR	--	--	--	--	--	--	--
BROMOMETHANE	--	--	--	--	--	--	--
CARBON DISULFIDE	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	--	--	--	--	--	--	--
CHLOROBENZENE	--	--	--	--	--	--	--
CHLORODIBROMOMETHANE	--	--	--	--	--	--	--
CHLOROETHANE	--	--	--	--	--	--	--
CHLOROFORM	--	--	--	--	--	--	--
CHLOROMETHANE	--	--	--	--	--	--	--
CIS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--
DIBROMOCHLOROPROPANE	--	--	--	--	--	--	--
DICHLORODIFLUOROMETHANE	--	--	--	--	--	--	--
ETHYLBENZENE	1 U	6.2	--	--	--	--	--
M+P-XYLENES	--	--	--	--	--	--	--
METHYL TERT-BUTYL ETHER	--	--	--	--	--	--	--
METHYLENE CHLORIDE	--	--	--	--	--	--	--
O-XYLENE	--	--	--	--	--	--	--
STYRENE	--	--	--	--	--	--	--
TETRACHLOROETHENE	--	--	--	--	--	--	--
TOLUENE	1 U	0.75 J	--	--	--	--	--
TOTAL 1,2-DICHLOROETHENE	--	--	--	--	--	--	--
TOTAL XYLENES	3 U	5.8	--	--	--	--	--
TRANS-1,2-DICHLOROETHENE	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPENE	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-TW4-D	PEN-681/682-TW4-02	PEN-681/682-TW4-01	PEN-681/682-TW04-02	PEN-681/682-TW4-03	PEN-681/682-TW4-04	PEN-14-TW4-05
SAMPLE DATE	08/12/02	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
TRICHLOROETHENE	--	--	--	--	--	--	--
TRICHLOROFLUOROMETHANE	--	--	--	--	--	--	--
VINYL CHLORIDE	--	--	--	--	--	--	--
Semivolatile Organics (ug/L)							
1,2,4-TRICHLOROBENZENE	--	--	--	--	--	--	--
1,2-DIPHENYLHYDRAZINE	--	--	--	--	--	--	--
1-METHYLNAPHTHALENE	1 U	36	0.2 U	42	89	42	64
2,2'-OXYBIS(1-CHLOROPROPANE)	--	--	--	--	--	--	--
2,4,5-TRICHLOROPHENOL	--	--	--	--	--	--	--
2,4,6-TRICHLOROPHENOL	--	--	--	--	--	--	--
2,4-DICHLOROPHENOL	--	--	--	--	--	--	--
2,4-DIMETHYLPHENOL	--	--	--	--	--	--	--
2,4-DINITROPHENOL	--	--	--	--	--	--	--
2,4-DINITROTOLUENE	--	--	--	--	--	--	--
2,6-DINITROTOLUENE	--	--	--	--	--	--	--
2-CHLORONAPHTHALENE	--	--	--	--	--	--	--
2-CHLOROPHENOL	--	--	--	--	--	--	--
2-METHYLNAPHTHALENE	1 U	2 U	0.2 U	47	79	45	69
2-METHYLPHENOL	--	--	--	--	--	--	--
2-NITROANILINE	--	--	--	--	--	--	--
2-NITROPHENOL	--	--	--	--	--	--	--
3&4-METHYLPHENOL	--	--	--	--	--	--	--
3,3'-DICHLOROBENZIDINE	--	--	--	--	--	--	--
3-NITROANILINE	--	--	--	--	--	--	--
4,6-DINITRO-2-METHYLPHENOL	--	--	--	--	--	--	--
4-BROMOPHENYL PHENYL ETHER	--	--	--	--	--	--	--
4-CHLORO-3-METHYLPHENOL	--	--	--	--	--	--	--
4-CHLOROANILINE	--	--	--	--	--	--	--
4-CHLOROPHENYL PHENYL ETHER	--	--	--	--	--	--	--
4-METHYLPHENOL	--	--	--	--	--	--	--
4-NITROANILINE	--	--	--	--	--	--	--
4-NITROPHENOL	--	--	--	--	--	--	--
ACENAPHTHENE	1 U	1 U	0.2 U	7.5 U	5.6 J	1.4	7.8 U
ACENAPHTHYLENE	1 U	7.4	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
ANTHRACENE	0.20 U	1 U	0.2 U	7.5 U	7.5 U	0.2 U	0.27
BENZIDINE	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
BENZO(A)PYRENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
BENZO(B)FLUORANTHENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
BENZO(G,H,I)PERYLENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
BENZO(K)FLUORANTHENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
BENZYL ALCOHOL	--	--	--	--	--	--	--
BIS(2-CHLOROETHOXY)METHANE	--	--	--	--	--	--	--
BIS(2-CHLOROETHYL)ETHER	--	--	--	--	--	--	--
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--
BUTYL BENZYL PHTHALATE	--	--	--	--	--	--	--
CARBAZOLE	--	--	--	--	--	--	--
CHRYSENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
DI-N-BUTYL PHTHALATE	--	--	--	--	--	--	--
DI-N-OCTYL PHTHALATE	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

LOCATION	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-TW4-D	PEN-681/682-TW4-02	PEN-681/682-TW4-01	PEN-681/682-TW04-02	PEN-681/682-TW4-03	PEN-681/682-TW4-04	PEN-14-TW4-05
SAMPLE DATE	08/12/02	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
DIBENZO(A,H)ANTHRACENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
DIBENZOFURAN	--	--	--	--	--	--	--
DIETHYL PHTHALATE	--	--	--	--	--	--	--
DIMETHYL PHTHALATE	--	--	--	--	--	--	--
FLUORANTHENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
FLUORENE	0.20 U	0.17 J	0.2 U	7.5 U	8.1	2.2	6.6 J
HEXACHLOROBENZENE	--	--	--	--	--	--	--
HEXACHLOROBUTADIENE	--	--	--	--	--	--	--
HEXACHLOROCYCLOPENTADIENE	--	--	--	--	--	--	--
HEXACHLOROETHANE	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
ISOPHORONE	--	--	--	--	--	--	--
N-NITROSO-DI-N-PROPYLAMINE	--	--	--	--	--	--	--
N-NITROSODIMETHYLAMINE	--	--	--	--	--	--	--
N-NITROSODIPHENYLAMINE	--	--	--	--	--	--	--
NAPHTHALENE	1 U	2 U	0.2 U	29	58	19	41
NITROBENZENE	--	--	--	--	--	--	--
PENTACHLOROPHENOL	--	--	--	--	--	--	--
PHENANTHRENE	0.20 U	1 U	0.2 U	7.5 U	6.1 J	0.74	6.0 J
PHENOL	--	--	--	--	--	--	--
PYRENE	0.20 U	0.10 U	0.2 U	7.5 U	7.5 U	0.2 U	0.2 U
Pesticides/PCBs (ug/L)							
4,4'-DDD	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--
ALDRIN	--	--	--	--	--	--	--
ALPHA-BHC	--	--	--	--	--	--	--
ALPHA-CHLORDANE	--	--	--	--	--	--	--
AROCLOR-1016	--	--	--	--	--	--	--
AROCLOR-1221	--	--	--	--	--	--	--
AROCLOR-1232	--	--	--	--	--	--	--
AROCLOR-1242	--	--	--	--	--	--	--
AROCLOR-1248	--	--	--	--	--	--	--
AROCLOR-1254	--	--	--	--	--	--	--
AROCLOR-1260	--	--	--	--	--	--	--
BETA-BHC	--	--	--	--	--	--	--
DELTA-BHC	--	--	--	--	--	--	--
DIELDRIN	--	--	--	--	--	--	--
ENDOSULFAN I	--	--	--	--	--	--	--
ENDOSULFAN II	--	--	--	--	--	--	--
ENDOSULFAN SULFATE	--	--	--	--	--	--	--
ENDRIN	--	--	--	--	--	--	--
ENDRIN ALDEHYDE	--	--	--	--	--	--	--
ENDRIN KETONE	--	--	--	--	--	--	--
GAMMA-BHC (LINDANE)	--	--	--	--	--	--	--
GAMMA-CHLORDANE	--	--	--	--	--	--	--
HEPTACHLOR	--	--	--	--	--	--	--
HEPTACHLOR EPOXIDE	--	--	--	--	--	--	--
METHOXYCHLOR	--	--	--	--	--	--	--
TOXAPHENE	--	--	--	--	--	--	--

APPENDIX B
SUMMARY OF LABORATORY ANALYTICAL RESULTS
UST SITE 14
NAS PENSACOLA
PENSACOLA FLORIDA

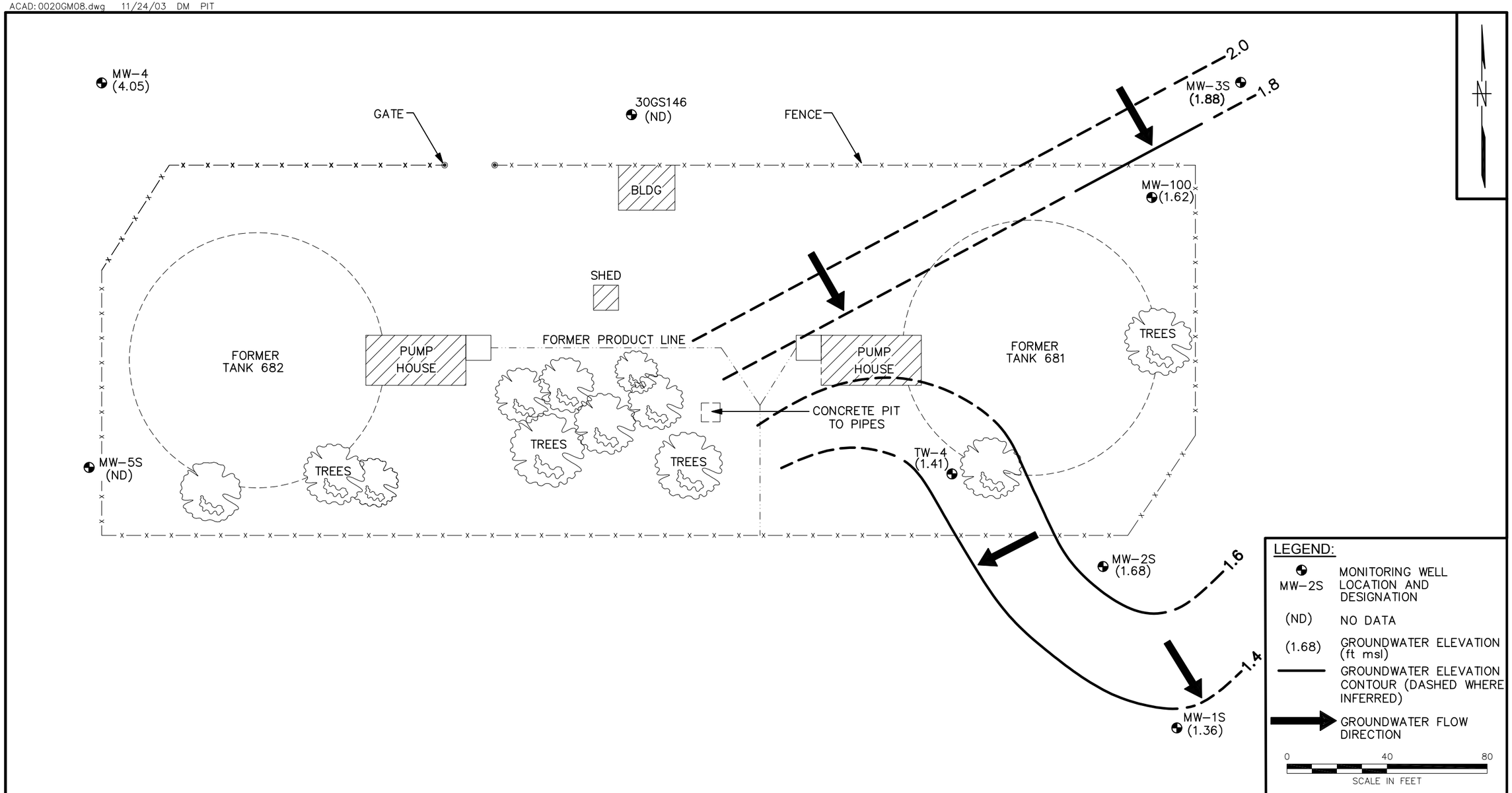
LOCATION	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4	NASP-681/682-TW4
SAMPLE ID	NASP-681/682-TW4-D	PEN-681/682-TW4-02	PEN-681/682-TW4-01	PEN-681/682-TW04-02	PEN-681/682-TW4-03	PEN-681/682-TW4-04	PEN-14-TW4-05
SAMPLE DATE	08/12/02	11/19/02	06/23/03	09/23/03	12/09/03	03/08/04	06/08/04
Inorganics (ug/L)							
ALUMINUM	--	--	--	--	--	--	--
ANTIMONY	--	--	--	--	--	--	--
ARSENIC	--	--	--	--	--	--	--
BARIUM	--	--	--	--	--	--	--
BERYLLIUM	--	--	--	--	--	--	--
CADMIUM	--	--	--	--	--	--	--
CALCIUM	--	--	--	--	--	--	--
CHROMIUM	--	--	--	--	--	--	--
COBALT	--	--	--	--	--	--	--
COPPER	--	--	--	--	--	--	--
CYANIDE	--	--	--	--	--	--	--
IRON	--	--	--	--	--	--	--
LEAD	--	--	--	--	--	--	--
MAGNESIUM	--	--	--	--	--	--	--
MANGANESE	--	--	--	--	--	--	--
MERCURY	--	--	--	--	--	--	--
NICKEL	--	--	--	--	--	--	--
POTASSIUM	--	--	--	--	--	--	--
SELENIUM	--	--	--	--	--	--	--
SILVER	--	--	--	--	--	--	--
SODIUM	--	--	--	--	--	--	--
THALLIUM	--	--	--	--	--	--	--
VANADIUM	--	--	--	--	--	--	--
ZINC	--	--	--	--	--	--	--
Petroleum Hydrocarbons (mg/L)							
TOTAL PETROLEUM HYDROCARBONS	0.30 U	0.31	--	--	--	--	--
Miscellaneous Parameters (mg/L)							
ETHANE	--	--	--	--	--	--	--
ETHENE	--	--	--	--	--	--	--
METHANE	--	--	--	--	--	--	--
NITRATE	--	--	--	--	--	--	--
NITRITE	--	--	--	--	--	--	--
NITRITE/NITRATE	--	--	--	--	--	--	--
SULFATE	--	--	3.2	1 U	1 U	6.1	7.0
TOTAL ORGANIC CARBON	--	--	2 U	15	16	14	20

Notes:
- = Not analyzed
J = Estimated concentration
U = non-detect value
µg/L = micrograms per liter
mg/L = milligrams per liter
NS = Not sampled

APPENDIX C

HISTORICAL POTENTIOMETRIC SURFACE MAPS

ACAD:0020GM08.dwg 11/24/03 DM PIT



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

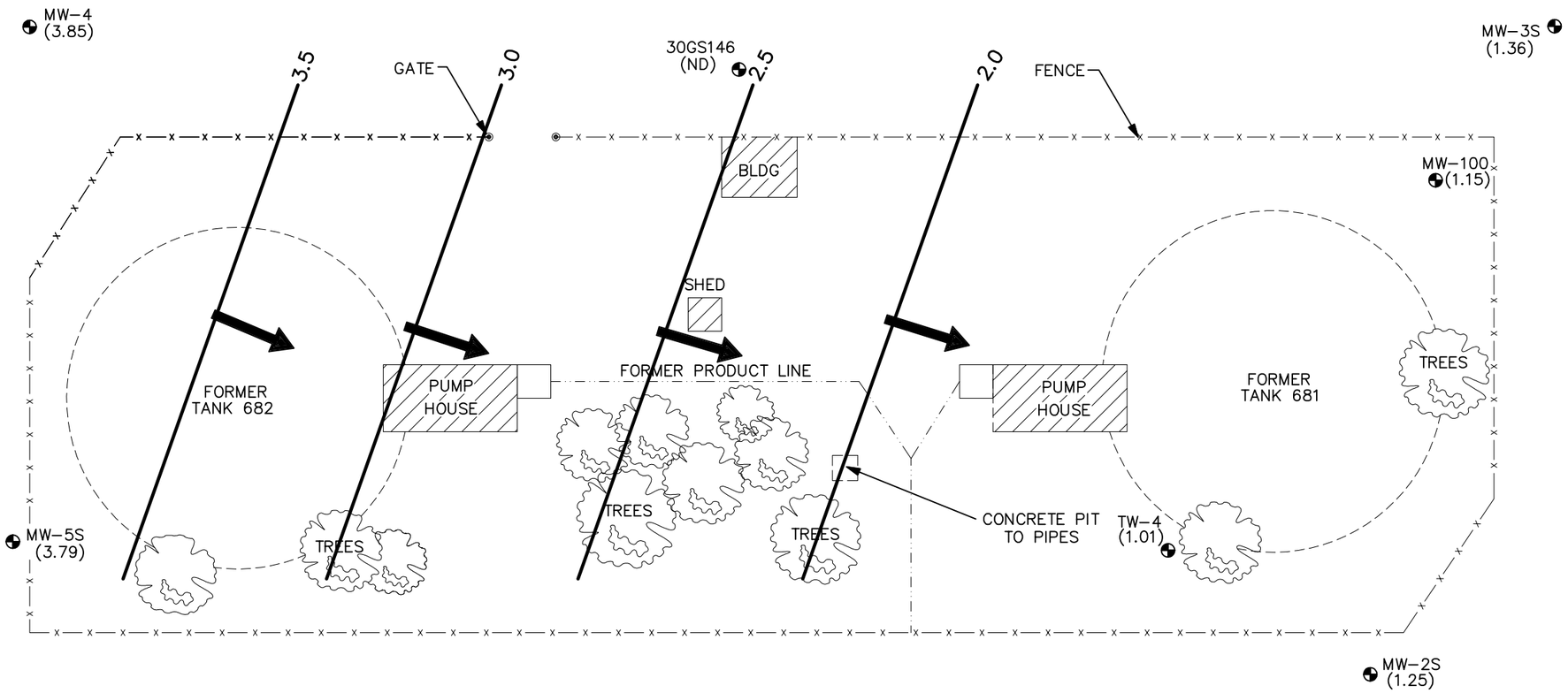
DRAWN BY DATE: DM 11/24/03
CHECKED BY DATE
COST/SCHED-AREA
SCALE: AS NOTED

GROUNDWATER ELEVATIONS SEPT. 24, 2003
UST SITE 14
FIRST QUARTER GROUNDWATER SAMPLING EVENT
NAS PENSACOLA
PENSACOLA, FLORIDA

CONTRACT NO. 5967
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 4
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

ACAD: 5967CM07.dwg 02/12/04 HJB PIT



LEGEND:

MW-2S	MONITORING WELL LOCATION AND DESIGNATION
2.0	GROUNDWATER ELEVATIONS CONTOURS
(ND)	NO DATA
(1.68)	GROUNDWATER ELEVATION (ft msl)
	ESTIMATED GROUNDWATER FLOW DIRECTION

0 40 80
SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

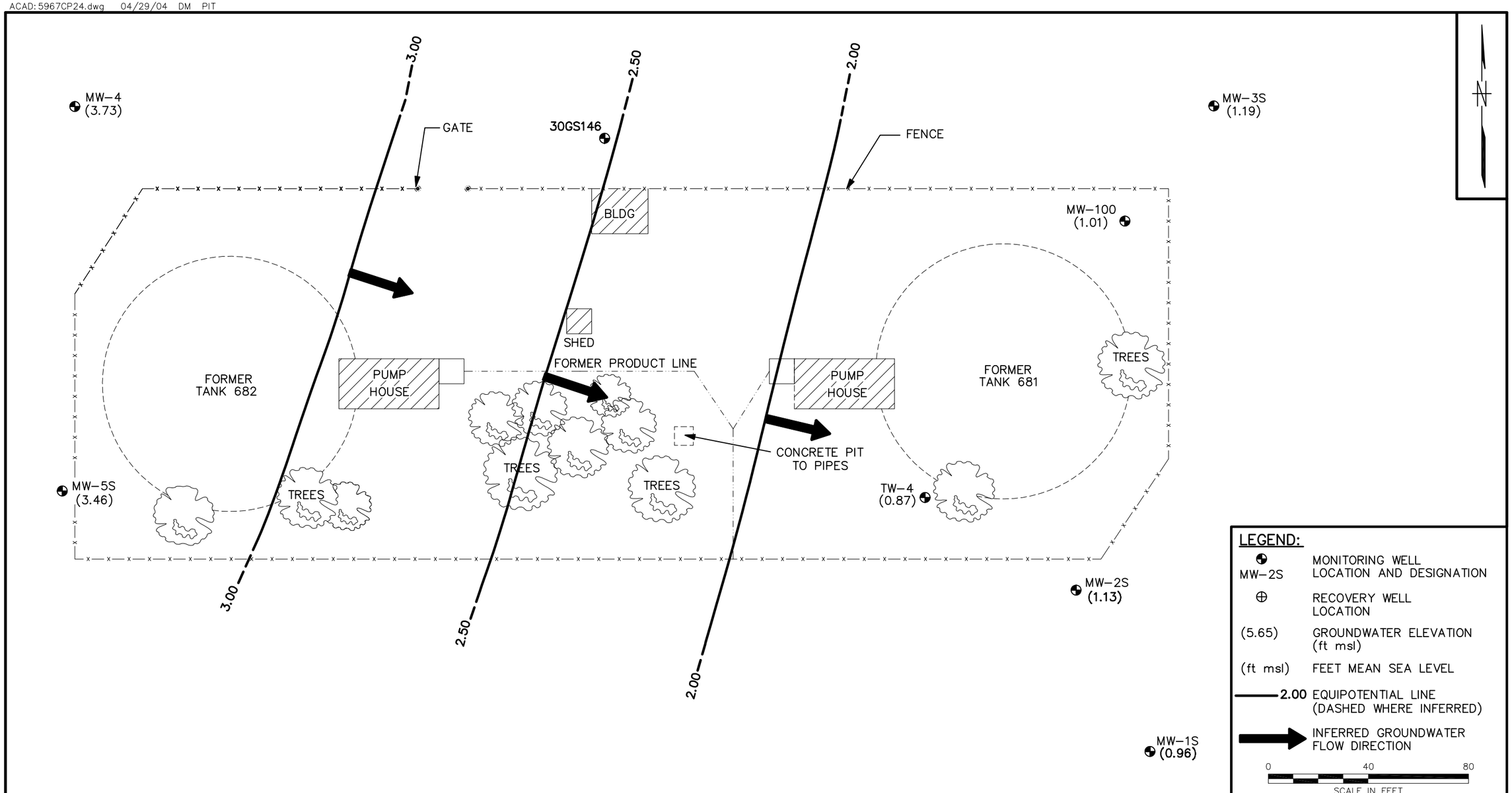
DRAWN BY DATE: DM 2/2/04
CHECKED BY DATE
COST/SCHED-AREA
SCALE: AS NOTED

GROUNDWATER ELEVATIONS DEC. 9, 2003
UST SITE 14
SECOND QUARTER GROUNDWATER SAMPLING EVENT
NAS PENSACOLA
PENSACOLA, FLORIDA

CONTRACT NO. 5967
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 4
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98

ACAD: 5967CP24.dwg 04/29/04 DM PIT



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY DATE: DM 4/29/04
CHECKED BY DATE
COST/SCHED-AREA
SCALE: AS NOTED

GROUNDWATER ELEVATIONS APRIL 20, 2004
UST SITE 14
THIRD QUARTER GROUNDWATER SAMPLING EVENT
NAS PENSACOLA
PENSACOLA, FLORIDA

CONTRACT NO. 5967
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 4
REV. 0

FORM CADD NO. SDIV_BH.DWG – REV 0 – 1/20/98