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Letter of Transmittal

To:	See Distribution List Below	Date:	September 25, 2003
		File:	1033-005
		Re:	N62467-03-G-0111 0002

Enclosed please find:

_X_herewith ___under separate cover: ___drawings ___descriptive literature ___letters

If all information listed is not received, please contact us immediately.

Quantity	Title	Comments
1	Final Site Specific Sampling and Analysis Plan for LTM Site 11 – Area B and Site 15 – Area G, AS/SVE O&M – Site 48 (Building 106), Naval Air Station, Jacksonville, Florida	For your records

*Comment letter code:
R-Reviewed **N**-Reviewed and Noted **I**-For your Information **Y**-For your approval

Very truly yours,
APEX ENVIRONMENTAL ENGINEERING & COMPLIANCE, INC.

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Managing Engineer

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NAVAL FACILITIES ENGINEERING COMMAND

NAVAL AIR STATION
Jacksonville, Florida

FINAL
SITE SPECIFIC
SAMPLING AND ANALYSIS PLAN
FOR

LTM SITE 11 - AREA B AND SITE 15 - AREA G
AS/SVE O&M – SITE 48 (BUILDING 106)

Contract N62467-03-G-0111
Delivery Order 0002

September 2003

FINAL
SITE SPECIFIC SAMPLING AND ANALYSIS PLAN

LTM SITE 11 - AREA B AND SITE 15 - AREA G
AS/SVE O&M – SITE 48 (BUILDING 106)

Prepared for:

NAVAL AIR STATION
Jacksonville, Florida

Southern Division
Naval Facilities Engineering Command
Contract N62467-03-G-0111
Delivery Order 0002

Prepared By:

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SECTION 1
INTRODUCTION

Apex Environmental Engineering & Compliance, Inc. (Apex) has been contracted by the Department of the Navy, Southern Division Naval Facilities Engineering Command (Southern Division, NAVFAC), to prepare this Site-Specific Sampling and Analysis Plan under the Contract No. N62467-03-G-0111, Contract Task Order (CTO) No. 002. Apex is preparing this Sampling and Analysis Plan as part of a contract transition of Long Term Monitoring (LTM) and O&M activities from Tetra Tech NUS, Inc. and CH2MHill Constructors, Inc./J.A. Jones, Inc. The purpose of this Sampling and Analysis Plan is to outline the procedures to be used to perform monitoring activities at Site 11 - Area B, Site 15 – Area G, and Site 48 (Building 106) located at Naval Air Station (NAS) Jacksonville, Jacksonville, Florida. Site maps for all three sites are presented in **Appendix A**. This Sampling and Analysis Plan serves as a site-specific supplement to the NAS Jacksonville Base wide Work Plan.

The activities addressed by this Sampling and Analysis plan include:

- Long Term Monitoring (LTM) of groundwater at Site 11 - Area B, Site 15 – Area G, and Site 48 (Building 106);
- Operational monitoring (air sampling) of the air sparge/soil vapor extraction (AS/SVE) system located at Site 48 (Building 106);
- Disposal of IDW purge water and condensate wastewater from the SVE system at Site 48 (Building 106);
- Preparation of quarterly and annual O&M monitoring reports for Site 48 (Building 106); and
- Semi-annual and annual LTM reports for Site 11 – Area B and Site 15 – Area G.

It should be noted that the on-going Operation and Maintenance (O&M) activities for the Site 48 (Building 106) air sparge/vapor extraction remedial system are addressed and will continue to be conducted in accordance with "*Operation and Maintenance Manual for Building 106 Soil Vapor Extraction and Air Sparging Remediation Treatment System, Final Revision A, June 1998, Fluor Daniel GTI.*"

1.1 SITE HISTORY

1.1.1 Site 11 - Area B and Site 15 – Area G

Site 11 and Site 15 are contained within the 134-acre Operable Unit 3 (OU 3) which consists mainly of the activities associated with the Naval Aviation Depot (NADEP) which is the largest tenant command at NAS Jacksonville. NADEP has been the major industrial complex at the facility since 1940. Additionally, NADEP provides maintenance for various ground operating equipment.

There are seven primary areas of groundwater contamination at OU 3, two of which are Areas B and G. Area B consists of an area of groundwater contamination located at the southwest corner of Building 840. Investigations conducted as part of the Remedial Investigation Report for OU 3 identified volatile organic compounds (VOCs) at concentrations exceeding FDEP Cleanup Target Levels (GCTLs) in the intermediate zone of the Surficial aquifer at a depth of about 38 feet. Based on a risk evaluation conducted during the RI/FS, additional action was recommended to address only the VOCs.

Area G consists of PSC 15, which is a former solvent and paint sludge disposal area. A radiological survey of the area identified radium-226 in shallow soils, which resulted in a removal action. Although the removal action was designed to address radium-226, soils impacted with VOCs were also removed. Due to concerns for structural stability, some impacted soils were left in place beneath utilities and a nearby concrete pad. Subsequent investigations of groundwater at OU 3 identified VOCs at PSC 15. The most recent of these investigations has delineated the plume horizontally indicating that the highest levels of contamination are found at approximately 20-25 feet deep. VOCs decrease in concentrations by two orders of magnitude with depth but remain above FDEP GCTLs at the 40 foot depth below land surface within the Surficial aquifer.

Remedial Action Objectives (RAOs) for OU 3 are addressed in the Record of Decision (ROD), which was signed by the Navy in September 2000. The RAOs include implementation of groundwater use restrictions and additional assessment, remediation, and/or monitoring at Areas B, C, D, F, and G. The selected remedy for Areas B and G is periodic monitoring of natural attenuation (NA) processes (e.g. biodegradation, dispersion, dilution, sorption, volatilization, chemical or biological stabilization, transformation, or destruction). Groundwater modeling performed by the United States Geological Survey (USGS) predicted that State and

Federal drinking water standards would be achieved by NA in 41 years at Area B and in 39 years at Area G, thus establishing a timeframe for attaining remedial action goals.

Components of the chosen alternative identified in the ROD are as follows:

- Semi-annual sampling for NA parameters and COCs for two years and then annually for three years
- Five-year review
- After the five-year review, biannual sampling as necessary until the remedial goals are met.

Additional details regarding the monitoring plan components are provided in Section 2.0 of the "*Long Term Monitoring Plan for Areas B and G, Operable Unit 3, August 2001, Tetra Tech NUS*." The first semi-annual sampling event was conducted in July 2002 by Tetra Tech NUS and reported in the report "*Semi-Annual Sampling Report for Areas B and G, OU-3, May 2003, Tetra Tech NUS*." This event was followed by an annual sampling event in January of 2003 also conducted by Tetra Tech NUS. This Sampling and Analysis Plan will address sampling activities starting with the 2003 semi-annual sampling event (3rd event).

1.1.2 Site 48 (Building 106)

The Building 106 area is within PSC 48 and has housed a dry cleaning facility since 1962. From 1962 to 1990, the dry cleaning operation consisted of one dry cleaning machine and one post cleaning drying machine. The system was upgraded in 1990 to a single machine that performs both dry cleaning and drying processes, referred to as a "dry-to-dry" system. Both the current and former system configurations used tetrachloroethene (also known as perchloroethylene or PCE), which was stored in a variety of manners within Building 106.

In 1995, the Navy and its Comprehensive Long-Term Environmental Action Navy (CLEAN) contractor performed a study that resulted in publication of an EE/CA. Various concentrations of chlorinated volatile organic compounds (VOCs) were detected in the soil and groundwater at the Building 106 study areas. Historical information suggests that substances were most likely released by spills and past operational practices.

Site assessment activities were performed by the CLEAN contractor to delineate the extent of the soil and groundwater contamination at the site. A final remedial design was subsequently submitted in December 1995 which specified AS and SVE as the chosen remedial alternatives to address the soil and groundwater contamination at the site. AS and SVE was then specified as the selected final remedy for the site in the Record of Decision for Operable Unit 3, dated September 2000.

The AS/SVE remediation system was constructed by Bechtel Environmental, Inc. (BEI) and startup occurred in March 1998. The AS/SVE remedial system consists of subsurface slotted horizontal air extraction piping and vertical air injection (sparge) wells. The AS system consists of 11 air injection (sparge) wells, labeled as AIW-1061 through AIW-10611, which are typically screened from 13.5 to 15 feed below land surface. In addition to the sparge wells the system includes a positive displacement rotary low pressure blower, inlet air filter and associated piping and instrumentation. The air sparge system is designed for a total combined flow to the sparging wells of 100 standard cubic feet per minute (scfm) or 81 actual cubic feet per minute (acfm). The SVE system at Building 106 consists of two horizontal laterals, labeled as 106-1 (north lateral) and 106-2 (south lateral). In addition to the laterals, the system includes a regenerative type vacuum blower, a moisture separator, inlet air filter, and associated piping and instrumentation. Prior to being discharged to the atmosphere, the extracted vapors are treated by two 5,000-pound granular activated carbon (GAC) units place in series. The SVE system is designed for a total combined flow from both extraction trenches of 300 scfm or 326 acfm. Groundwater monitoring at Site 48 is accomplished through the monitoring of eight piezometers, labeled PZ-1061 through PZ1068, and one monitoring well labeled U3MW028.

BEI operated and maintained the system from startup through March 2000. CH2M HILL Constructors, Inc. (CCI) operated the system from April 2000 through July 2003. Operation of the system will transition to Apex during August of 2003.

1.2 PROJECT OBJECTIVES

The objective of the Long Term Monitoring (LTM) program at Site 11 – Area B and Site 15 – Area G and operational monitoring of the Site 48 (Building 106) AS/SVE system is to evaluate the performance of the selected remedy to meet the goals of protection of human health and the environment. The specific objectives are as follows:

- Assure the public, the regulators, and the scientific community that the selected remedy is working as expected and continues to be protective of human health and the environment;

- Collect sufficient groundwater and air quality data to enable reliable assessment of data trends and projections of time to reach remedial goals defined by FDEP GCTLs and Federal Maximum Contaminant Levels (MCLs) for drinking water;

- Provide early warning of migration of Constituents of Concern (COCs) into potential receptors;

- Make timely decisions of the need for implementing contingent actions and/or modifying the Sampling and Analysis Plan; and

- Assess the progress for the cleanup against the exit strategy.

1.3 SCOPE OF WORK

The project scope of work addressed by this Sampling and Analysis Plan includes the following activities:

1. Collection of groundwater monitoring well and SVE system air samples from Site 48 (Building 106) for laboratory analyses in accordance with Section 2.0 of this plan to monitor treatment system performance.

2. Collection of groundwater monitoring well samples from Site 11 – Area B and Site 15 – Area G for laboratory analyses in accordance with Section 2.0 of this plan to monitor Natural Attenuation performance.

3. Collection of water level measurements and field analyses of groundwater samples for pH, temperature, conductivity, oxidation/reduction potential, dissolved oxygen, and turbidity at Site 11, Site 15 and Site 48 in accordance with Section 2.0 of this plan.

4. Characterization, transportation, and disposal of generated wastes in accordance with Section 2.0 of this plan.

5. Preparation of quarterly and annual reports for Site 48 (Building 106) to document system performance and sample results.

6. Preparation of annual and semi-annual reports for Site 11 and Site 15 to document NA performance and sample results.

1.4 PROJECT SCHEDULE

A detailed project schedule for sampling activities and reporting is provided in **Appendix B.**

SECTION 2
SAMPLING AND ANALYSIS PROGRAM

The Sampling and Analysis Program provided in this plan outlines the required sampling activities associated with Apex's assumption of the operational monitoring of the AS/SVE system at Site 48 (Building 106) and LTM sampling activities at Site 11 – Area B and Site 15 – Area G at NAS Jacksonville. This SAP outlines the required locations, frequency, and analyses for the groundwater monitoring well and SVE air samples. In addition, this SAP provides the required analyses for disposal characterization for wastes generated during project activities.

Sampling methodology including sample handling, labeling, and chain-of-custody will be conducted in accordance with the DEP-SOP-001/01 and DEP QA-001/92. Laboratory reporting will include an Electronic Data Deliverable (EDD).

2.1 DATA QUALITY OBJECTIVES/SAMPLING REQUIREMENTS

The data quality objectives for each sampling tasks described above are listed below. The sampling and analytical requirements, along with the required level of quality and data packages are listed in **Table 2-1**. The project-specific quality control objectives for the groundwater and air are listed in **Tables 2-2** and **2-3**, respectively. These include the quantitation, project action, accuracy, precision, and completeness limits by which the data will be evaluated. A Navy - approved laboratory will be used for all sample analyses. In addition, the laboratory will also have a FL-COMPQAP.

Data Quality Objectives

Sampling Activity	Data Quality Objective Category
SVE system sampling (Summa Canisters to off site lab)	Definitive
Groundwater Sampling (off site laboratory analyses of COCs and NA parameters)	Definitive
Groundwater Sampling (field measurements including NA field parameters, temperature, pH, conductivity, turbidity, DO, ORP and water level measurements for all wells)	Screening
Waste characterization of the contaminated aqueous waste (off site laboratory analyses)	Definitive

2.2 SITE 48 (BUILDING 106) OPERATIONAL MONITORING

To evaluate the effectiveness of the AS/SVE system and the overall status of groundwater remediation at Site 48 (Building 106), groundwater samples will be collected in accordance with the FDEP SOPs for Laboratory Operations and Sample Collection Activities, DEP-QA-001/92 and analyzed in accordance with **Table 2-1**. Florida Department of Environmental Protection Standard Operating Procedures DEP-SOP-001/01 outline the sample collection methodology including sample handling, labeling, and required collection of quality assurance and quality control samples. Groundwater level measurements will be performed on all site wells on a quarterly basis. A summary of field activities is presented below.

Field Activities – Site 48 (Building 106)

Field Activity	Frequency	Equipment	Sample Point
Groundwater elevation measurements; groundwater sampling field measurements; groundwater COC sampling	Quarterly	water level indicator; thermometer, pH meter, turbidity meter, conductivity meter (combination meter)	PZ-1061 through PZ-1068 and MW-28
Volatiles in Air	Monthly	Laboratory analysis (TO14)	SVE Lateral 1 and SVE Lateral 2
Volatiles in Air	Quarterly	Laboratory analysis (TO14)	Mid Carbon and Post Carbon

Air samples will be collected at the two sample ports on the SVE system as well as in-between, and after the two activated carbon units in accordance with **Table 2-1**.

These samples will be collected according to the following procedures.

Procedure for Summa Canister Sampling

1. Connect a piece of ¼ inch Teflon tubing to the sample port.
2. Allow the probe and tubing to purge for one minute and then connect the other end of the Teflon tubing to the Summa canister.
3. Open the valve on the canister and allow the sample to flow into the canister.
4. Close the valve when the canister's gauge goes to zero.

5. Turn off the valve at the sample port and release the tube from the canister.

6. Label and package the canister for shipment to the laboratory.

Note: If the sample port does not have the pressure to fill the canister, collect the sample from the port using a Tedlar bag and a vacuum box as described in the manufacturer's manual. Then transfer the contents of the Tedlar bag into the canister.

2.3 SITE 11 – AREA B MONITORING

To evaluate the effectiveness of Natural Attenuation at Site 11 – Area B groundwater samples will be collected in accordance with the FDEP SOPs for Laboratory Operations and Sample Collection Activities, DEP-QA-001/92 and analyzed in accordance with **Table 2-1**. Florida Department of Environmental Protection Standard Operating Procedures DEP-SOP-001/01 outline the sample collection methodology including sample handling, labeling, and required collection of quality assurance and quality control samples. Groundwater level measurements will be performed on all site wells during the semi-annual and annual sampling events. A summary of field activities is presented below.

Field Activities – Site 11 – Area B

Field Activity	Frequency	Equipment	Sample Point
Groundwater elevation measurements; groundwater sampling field measurements; groundwater COC and NA sampling	Semi-Annual Event (COCs Only) Annual Event (COCs and NA Parameters)	water level indicator; thermometer, pH meter, turbidity meter, conductivity meter, DO, ORP (combination meter) NA Field Analyses Kits (See Table 2-2) Laboratory Analysis (See Table 2-2)	JAX-OU3-B1 (Interval 3) JAX-OU3-B2 (Convention Well) JAX-OU3-B3 (Conventional Well)

2.4 SITE 15 – AREA G MONITORING

To evaluate the effectiveness of Natural Attenuation at Site 15 – Area G groundwater samples will be collected in accordance with the FDEP SOPs for Laboratory Operations and Sample Collection Activities, DEP-QA-001/92 and analyzed in accordance with **Table 2-1**. Florida

Department of Environmental Protection Standard Operating Procedures DEP-SOP-001/01 outline the sample collection methodology including sample handling, labeling, and required collection of quality assurance and quality control samples. Groundwater level measurements will be performed on all site wells during the semi-annual and annual sampling events. A summary of field activities is presented below.

Field Activities – Site 15 – Area G

Field Activity	Frequency	Equipment	Sample Point
Groundwater elevation measurements; groundwater sampling field measurements; groundwater COC and NA sampling	Semi-Annual Event (COCs Only) Annual Event (COCs and NA Parameters)	water level indicator; thermometer, pH meter, turbidity meter, conductivity meter, DO, ORP (combination meter) NA Field Analyses Kits (See Table 2-2) Laboratory Analysis (See Table 2-2)	JAX-OU3-G1 (Int 3) JAX-OU3-G2 (Int 5) JAX-OU3-G3 (Int 3) JAX-OU3-G4 (Int 4) JAX-OU3-G5 (Int 3) JAX-OU3-G6 (Int 3) JAX-OU3-G7 (Int 3) JAX-OU3-G8 (Int 5)

2.5 WASTESTREAM SAMPLING AND ANALYSIS

Wastewater generated by the Site 48 SVE system will be disposed through the Ground Water Treatment (GWT) system at Building 780 and discharged. Investigation Derived Waste (groundwater purge water) generated from Site 11 – Area B and Site 15 – Area G will be containerized and proper disposal coordinated through the Navy Public Works Center (PWC) following Navy procedures. However, the following procedures are included if procedures change.

Waste characterization samples will be collected to evaluate the handling, transportation, and disposal requirements of generated contact water, decontamination water, monitoring well purge water, and recovered water from the SVE system. Water samples will be collected and delivered to a Navy-approved and FDEP-certified laboratory, and analyzed for the parameters listed on **Table 2-1**.

Hazardous wastes will be removed within 90 days from generation and other wastes will be removed from the site as soon as possible. The date of generation is the day that a waste is first

placed in a container. Off site treatment or disposal facilities will use the waste profile and supporting documentation (e.g., analytical data) to determine if they will accept a waste. Hazardous wastes will be sent to the appropriate Resource Conservation and Recovery Act (RCRA) Subtitle C treatment, storage, or disposal facility. Non-hazardous wastes will be disposed at a Subtitle D facility or a municipal landfill, as appropriate. The treatment or disposal facility will be responsible for providing a copy of the final waste manifest and for providing a certificate of treatment or disposal for each load of waste received.

SECTION 3
REPORTING

3.1 REPORTING REQUIREMENTS - SITE 11 AND SITE 15

Semi –Annual and Annual Monitoring reports will be prepared for Site 11 – Area B and Site 15 – Area G. The reports will contain all monitoring data to date, including tables and graphs, and will contain the following sections:

- Introduction: This section shall describe the field activities, including date, weather conditions, monitoring points sampled, and any unusual occurrences during the sampling;
- Data Presentations: This section shall include physical information for each well such as total depth, depth to water, speed of recharge after purging, general condition of the well, etc. It also shall include tables of all data with the current sampling event highlighted;
- Data Assessment: This section should discuss the data and trends and what they mean in terms of contaminant migration and attenuation, track changes in plume size and shape; evaluate COC movement toward potential receptors, evaluate NA data to identify degradation pathways and identify evidence of degradation; note significant changes; and evaluate data trends; and
- Recommendations: Recommendations regarding the need for continued monitoring and/or changes to the LTM plan. Particular attention shall be focused on opportunities to further enhance and optimize data collection shall be made. Recommendations for modifications to monitoring activities should be presented to ensure adequate and cost effective data collection.

3.2 REPORTING REQUIREMENTS – SITE 48 (BUILDING 106)

For each year of operation three Quarterly reports and one Annual O&M report will be prepared that contains a summary of activities completed and documents the AS/SVE operational monitoring data (air and groundwater sampling). The Quarterly O&M report will consist of a letter report with attached figures and tables. The Annual O&M report will contain the following sections:

- Introduction: This section shall describe the program objectives and remedial system;
- System Performance Monitoring: This section shall provide a summary of operational efficiencies, maintenance and system downtime, flow rate monitoring data, and water level measurements;

- Summary of Sampling and Laboratory Analytical Results: This section should discuss the results of air and groundwater monitoring, note significant changes and evaluate data trends; and

- Conclusions and Recommendations: Recommendations regarding the need for monitoring and/or changes to the monitoring plan. Particular attention shall be focused on opportunities to further enhance and optimize data collection shall be made. Recommendations for modifications to monitoring activities should be presented to ensure adequate and cost effective data collection.

SECTION 4
REFERENCES

"*Long Term Monitoring Plan for Areas B and G, Operable Unit 3*," prepared for Southern Division, Naval Facilities Engineering Command, August 2001, Tetra Tech NUS, Inc.

"*Semi-Annual Sampling Report for Areas B and G, Operable Unit 3*," prepared for Southern Division, Naval Facilities Engineering Command, May 2003, Tetra Tech NUS, Inc.

"*Operation and Maintenance Manual for Building 106 Soil Vapor Extraction and Air Sparging Remediation Treatment System, Final Revision A,*" prepared for Southern Division, Naval Facilities Engineering Command, June 1998, Fluor Daniel GTI.

"*Annual Operations and Maintenance Status Report, Air Sparge and Soil Vapor Extraction System, Building 106*," prepared for Southern Division, Naval Facilities Engineering Command, June 2003, CH2M Hill Constructors, Inc.

TABLES

TABLE 2-1

Sampling and Analytical Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method (Note 1)	Sampling Equipment (Note 1)	TAT[2]	DQO Level	Required Analysis[3]	Analytical Method	Holding Time	Sample Preservation	Containers
SITE 48 (BUILDING 106)													
SVE System Sampling													
Performance sampling of SVE system	Mid Carbon and Post Carbon	Air	Quarterly	2 x 4 events Total = 8	Grab	Summa Canister	14 days	Level II	Volatiles	USEPA Method 18/TO14	14 days	none	1 summa canister
Performance sampling of SVE system	SVE Lateral 1 and SVE Lateral 2	Air	Monthly	2 x 12 events Total = 24	Grab	Summa Canister	14 days	Level II	Volatiles	USEPA Method 18/TO14	14 days	none	1 summa canister
Groundwater Sampling													
Groundwater Sampling	PZ-1061 PZ-1062 PZ-1063 PZ-1064 PZ-1065 PZ-1066 PZ-1067 PZ-1068 MW-28	Water	Quarterly	9 x 4 events Total = 44	Grab	Low Flow Peristaltic Pump with Teflon Tubing	14 days	Level II	Volatiles	EPA 624 or 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
	Equipment Blank or Dup	Water	1 per 10 samples	1 per event	Prepared in Field	DI Water	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
	Trip Blank	Water	1 per cooler containing volatile samples	1	Prepared by Lab	N/A	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
SITE 11 - AREA B													
Groundwater Sampling													
Groundwater Sampling	JAX-OU3-B1 (MCW Interval 3) (29.3-30.3 ft bls) JAX-OU3-B2 (Conventional Well) JAX-OU3-B3 (Conventional Well)	Water	Semi-Annual (COCs Only) and Annual Event (COCs & NA*)	COCs (3 x 2 events Total = 6) NA (3 x 1 event Total = 3)	Grab	Low Flow Peristaltic Pump with Teflon Tubing	14 days	Level II	Volatiles (COCs)	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
									Alkalinity*	310.1	14 days	Cool to 4°C	(1) 500ml HDPE
									Nitrate-Nitrogen*	300.0	2 days	Cool to 4°C	(1) 500ml HDPE
									Chloride*	300.0	28 days	Cool to 4°C	(1) 100ml HDPE
									Sulfate*	300.0	28 days	Cool to 4°C	(1) 100ml HDPE
									MEE*	RSK 147/175	7 days	Cool to 4°C	(2) 40 ml vial
									TOC*	9060	28 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
								Field Analyses	Dissolved Oxygen*	Field - CHEMetrics K7501/K7512	-	-	-
									Sulfide*	Field Hach 8131	-	-	-
									Ferrous Iron*	Field - Hach DR 890 (low range) and portable colorimeter (high range)	-	-	-
									Manganese*	Field - Hach DR 890	-	-	-
									Hydrogen Sulfide*	Field Hach HS-C	-	-	-
									Carbon Dioxide*	Field - 1910/1920/1925	-	-	-
									Dissolved Inorg. Carbon as Alkalinity*	Field - Hach 8203	-	-	-
									pH, specific conductivity, temp, turbidity, DO, ORP	Water Quality Meter	-	-	-
	Equipment Blank or Dup	Water	1 per 10 samples	1 per event	Prepared in Field	DI Water	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
	Trip Blank	Water	1 per cooler containing volatile samples	1	Prepared by Lab	N/A	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial

Notes:

1) In accordance with FDEP SOPs

2) TAT is in calendar days

3) NA parameters to be collected during the annual sampling event are denoted by a *.

TABLE 2-1

Sampling and Analytical Summary

Sample Task	Sample Point	Matrix	Sampling Frequency	Approx Sample No	Sampling Method (Note 1)	Sampling Equipment (Note 1)	TAT[2]	DQO Level	Required Analysis[3]	Analytical Method	Holding Time	Sample Preservation	Containers
SITE 15 - AREA G													
Groundwater Sampling													
Groundwater Sampling	JAX-OU3-G1 (MCW Interval 3) (18.6-19.6 ft bls) JAX-OU3-G2 (MCW Interval 5) (37.8-38.8 ft bls) JAX-OU3-G3 (MCW Interval 3) (18.7-19.7 ft bls) JAX-OU3-G4 (MCW Interval 4) (30.5-31.5 ft bls) JAX-OU3-G5 (MCW Interval 3) (25.8-26.8 ft bls) JAX-OU3-G6 (MCW Interval 3) (18.3-19.3 ft bls) JAX-OU3-G7 (MCW Interval 3) (16.4-17.4 ft bls) JAX-OU3-G8	Water	Semi-Annual (COCs Only) and Annual Event (COCs & NA*)	COCs (3 x 2 events Total = 6) NA (3 x 1 event Total = ٣١	Grab	Low Flow Peristaltic Pump with Teflon Tubing	14 days	Level II	Volatiles (COCs)	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
									Alkalinity*	310.1	14 days	Cool to 4°C	(1) 500ml HDPE
									Nitrate-Nitrogen*	300.0	2 days	Cool to 4°C	(1) 500ml HDPE
									Chloride*	300.0	28 days	Cool to 4°C	(1) 100ml HDPE
									Sulfate*	300.0	28 days	Cool to 4°C	(1) 100ml HDPE
									MEE*	RSK 147/175	7 days	Cool to 4°C	(2) 40 ml vial
									TOC*	9060	28 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
								Field Analyses	Dissolved Oxygen*	Field - CHEMetrics K7501/K7512	-	-	-
									Sulfide*	Field Hach 8131	-	-	-
									Ferrous Iron*	Field - Hach DR 890 (low range) and portable colorimeter (high range)	-	-	-
									Manganese*	Field - Hach DR 890	-	-	-
									Hydrogen Sulfide*	Field Hach HS-C	-	-	-
									Carbon Dioxide*	Field - 1910/1920/1925	-	-	-
									Dissolved Inorg. Carbon as Alkalinity*	Field - Hach 8203	-	-	-
									pH, specific conductivity, temp, turbidity, DO, ORP	Water Quality Meter	-	-	-
	Equipment Blank or Dup	Water	1 per 10 samples	1 per event	Prepared in Field	DI Water	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
	Trip Blank	Water	1 per cooler containing volatile samples	1	Prepared by Lab	N/A	14 days	Level II	Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
Disposal of Aqueous Waste													
Disposal of Aqueous Waste from purge water, and recovered SVE water, etc	Aqueous disposal material	Water	As required by disposal facility	1	Grab	Drum thief or dip jar	14 days	Level II	TCL Volatiles	EPA 8260B	14 days	HCl pH< 2; Cool to 4°C	(2) 40 ml vial
									TCL Semi-volatiles	8270C	14 days ext; 40 days analysis	Cool to 4°C	(3) 1L amber glass
									TCL Pesticides	8081A	14 days ext; 40 days analysis		
									TCL PCBs	8082	14 days ext; 40 days analysis		
									TAL Metals	6010B/7470A	6 months/Hg = 28 days	HNO3 pH< 2; Cool to 4°C	(1) 500ml HDPE
									Cyanide	335.3	14 days	Cool to 4°C NaOH pH>12	(1) 1L HDPE
									Reactivity	1010/1020A	ASAP	Cool to 4°C	(1) 500ml HDPE
									Ignitability	9040B	ASAP		
									Corrosivity	Chapter 7.3	ASAP		
									pH	150.1	ASAP	Cool to 4°C	(1) 100ml HDPE

Notes:

1) In accordance with FDEP SOPs

2) TAT is in calendar days

3) NA parameters to be collected during the annual sampling event are denoted by a *.

TABLE 2-2
Project Quality Control Objectives for Groundwater

Method No[1]	Analyte / Component	Project Action Limits Water	Minimum PQL Water	Accuracy Limits LCS Recoveries Water	Precision Limits Field Dup Deviation Water	Completeness Limits Water
VOLATILES BY GC/MS		ug/L	ug/L	%	%	%
8260B	1,1,1,2-Tetrachloroethane	NS	2.5	62-108	<50	95
8260B	1,1,1-Trichloroethane	NS	4	65-135	<50	95
8260B	1,1,2,2-Tetrachloroethane	NS	2	64-135	<50	95
8260B	1,1,2-Trichloroethane	NS	5	65-135	<50	95
8260B	1,1-Dichloroethane	NS	2	62-135	<50	95
8260B	1,1-Dichloroethene	NS	6	65-135	<50	95
8260B	1,1-Dichloropropane	NS	5	65-135	<50	95
8260B	1,2,3-Trichlorobenzene	NS	1.5	65-147	<50	95
8260B	1,2,3-Trichloropropane	NS	16	65-135	<50	95
8260B	1,2,4-Trichlorobenzene	NS	2	65-145	<50	95
8260B	1,2,4-Trimethylbenzene	NS	6.5	65-135	<50	95
8260B	1,2-Dichloroethane	NS	3	58-137	<50	95
8260B	1,2-Dichlorobenzene	NS	1.5	65-135	<50	95
8260B	1,2-Dibromo-3-chloropropane	NS	13	49-135	<50	95
8260B	1,2-Dichloropropane	NS	2	60-135	<50	95
8260B	1,2-Ethylene Dibromide	NS	3	65-135	<50	95
8260B	1,3,5-Trimethylbenzene	NS	2.5	62-135	<50	95
8260B	1,3-Dichlorobenzene	NS	6	65-135	<50	95
8260B	1,3-Dichloropropane	NS	2	65-135	<50	95
8260B	1,4-Dichlorobenzene	NS	1.5	65-135	<50	95
8260B	1-Chlorohexane	NS	2.5	65-135	<50	95
8260B	2,2-Dichloropropane	NS	17.5	65-135	<50	95
8260B	2-Chlorotoluene	NS	2	63-135	<50	95
8260B	4-Chlorotoluene	NS	3	64-135	<50	95
8260B	Benzene	NS	2	65-135	<50	95
8260B	Bromobenzene	NS	1.5	65-135	<50	95
8260B	Bromochloromethane	NS	2	63-135	<50	95
8260B	Bromodichloromethane	NS	4	65-135	<50	95
8260B	Bromoform	NS	6	65-135	<50	95
8260B	Bromomethane	NS	5.5	62-135	<50	95
8260B	Carbon Tetrachloride	NS	10.5	52-135	<50	95
8260B	Chlorobenzene	NS	2	65-135	<50	95
8260B	Chloroethane	NS	5	55-135	<50	95
8260B	Chloroform	NS	1.5	64-135	<50	95
8260B	Chloromethane	NS	6.5	65-135	<50	95
8260B	Cis-1,2-Dichloroethene	NS	6	65-135	<50	95
8260B	Cis-1,3-Dichloropropene	NS	5	64-135	<50	95
8260B	Dibromochloromethane	NS	2.5	63-135	<50	95
8260B	Dibromomethane	NS	12	59-137	<50	95
8260B	Dichlorodifluoromethane	NS	5	65-135	<50	95
8260B	Ethylbenzene	NS	3	65-135	<50	95
8260B	Hexachlorobutadiene	NS	5.5	65-135	<50	95
8260B	Isopropylbenzene	NS	2.5	65-135	<50	95
8260B	m-Xylene	NS	2.5	65-135	<50	95
8260B	Methylene Chloride	NS	1.5	65-135	<50	95
8260B	n-Butylbenzene	NS	5.5	65-135	<50	95
8260B	n-Propylbenzene	NS	2	65-135	<50	95
8260B	Naphthalene	NS	2	65-135	<50	95
8260B	o-Xylene	NS	5.5	65-135	<50	95
8260B	p-Isopropyltoluene	NS	6	65-135	<50	95

Notes:
1) SW-846 Methods unless otherwise noted

NS = Not Specified
NA = Not Applicable

TABLE 2-2
Project Quality Control Objectives for Groundwater

Method No[1]	Analyte / Component	Project Action Limits Water	Minimum PQL Water	Accuracy Limits LCS Recoveries Water	Precision Limits Field Dup Deviation Water	Completeness Limits Water
8260B	p-Xylene	NS	6.5	65-135	<50	95
8260B	Sec-Butylbenzene	NS	6.5	65-135	<50	95
8260B	Styrene	NS	2	65-135	<50	95
8260B	Trichloroethylene	NS	5	61-135	<50	95
8260B	Tert-Butylbenzene	NS	7	65-135	<50	95
8260B	Tetrachloroethylene	NS	7	61-135	<50	95
8260B	Toluene	NS	5.5	64-135	<50	95
8260B	Trans-1,2-Dichloroethene	NS	3	65-135	<50	95
8260B	Trans-1,3-Dichloropropene	NS	5	56-135	<50	95
8260B	Trichlorofluoromethane	NS	4	57-135	<50	95
8260B	Vinyl Chloride	NS	5.5	36-144	<50	95
8260B	Dibromofluoromethane (surr)	NS	NA	NA	NA	95
8260B	Toluene-d8 (surr)	NS	NA	NA	NA	95
8260B	4-Bromofluorobenzene (surr)	NS	NA	NA	NA	95
8260B	1,2-Dichloroethane-d4 (surr)	NS	NA	NA	NA	95

Notes:
1) SW-846 Methods unless otherwise noted

NS = Not Specified
NA = Not Applicable

TABLE 2-3
PROJECT QUALITY CONTROL OBJECTIVES FOR AIR

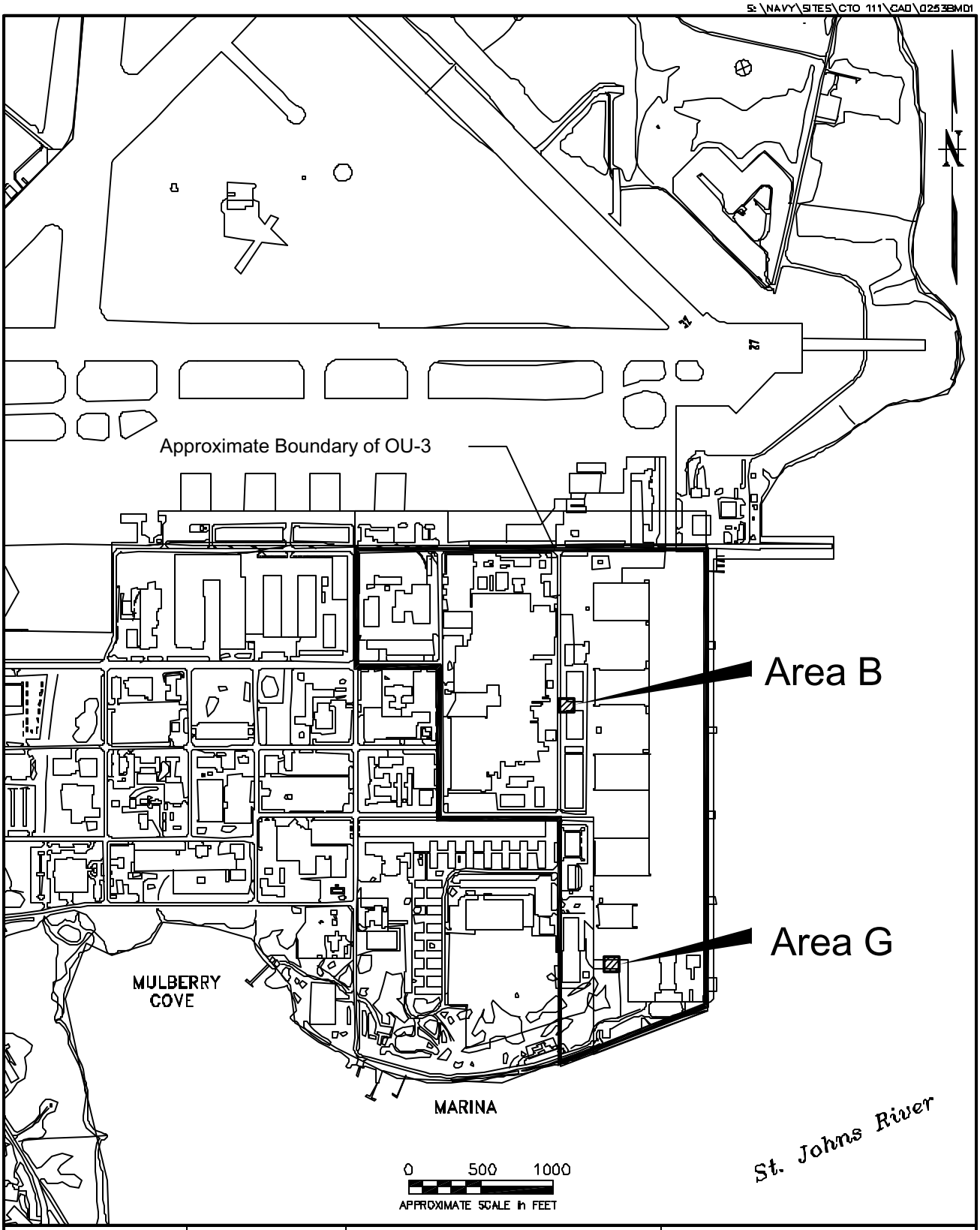
		Project Action Limits	Minimum PQL	Accuracy Limits Audit Accuracy Recoveries	Precision Limits Field Dup Deviation	Completeness Limits
Method No[1]	Analyte / Component	Air	Air	Air	Air	Air
TO-14A List		ppbv	ppbv	%	%	%
TO-14A	Benzene	NS	0.34	70-130	<30	95
TO-14A	Carbon Tetrachloride	NS	0.42	70-130	<30	95
TO-14A	Chlorobenzene	NS	0.34	70-130	<30	95
TO-14A	Chloroform	NS	0.25	70-130	<30	95
TO-14A	1,3-Dichlorobenzene	NS	0.36	70-130	<30	95
TO-14A	1,4-Dichlrobenzene	NS	0.7	70-130	<30	95
TO-14A	1,2-Dichlorobenzene	NS	0.44	70-130	<30	95
TO-14A	1,1-Dichloroethane	NS	0.27	70-130	<30	95
TO-14A	1,2-Dichloroethane	NS	0.24	70-130	<30	95
TO-14A	Methylene Chloride	NS	1.38	70-130	<30	95
TO-14A	1,2-Dichloropropane	NS	0.21	70-130	<30	95
TO-14A	Cis-1,3-Dichloropropene	NS	0.36	70-130	<30	95
TO-14A	Trans-1,3-Dichloropropene	NS	0.22	70-130	<30	95
TO-14A	Ethylbenzene	NS	0.27	70-130	<30	95
TO-14A	Chloroethane	NS	0.19	70-130	<30	95
TO-14A	Bromomethane	NS	0.53	70-130	<30	95
TO-14A	Chloromethane	NS	0.4	70-130	<30	95
TO-14A	Styrene	NS	1.64	70-130	<30	95
TO-14A	1,1,2,2-Tetrachloroethane	NS	0.28	70-130	<30	95
TO-14A	Tetrachloroethylene	NS	0.75	70-130	<30	95
TO-14A	Toluene	NS	0.99	70-130	<30	95
TO-14A	1,1,1-Trichloroethane	NS	0.62	70-130	<30	95
TO-14A	1,1,2-Trichloroethane	NS	0.5	70-130	<30	95
TO-14A	Trichloroethylene	NS	0.45	70-130	<30	95
TO-14A	Vinyl Chloride	NS	0.33	70-130	<30	95
TO-14A	m-p-Xylene	NS	0.76	70-130	<30	95
TO-14A	o-Xylene	NS	0.57	70-130	<30	95

Notes:
1) SW-846 Methods unless otherwise noted

NS = Not Specified
NA = Not Applicable

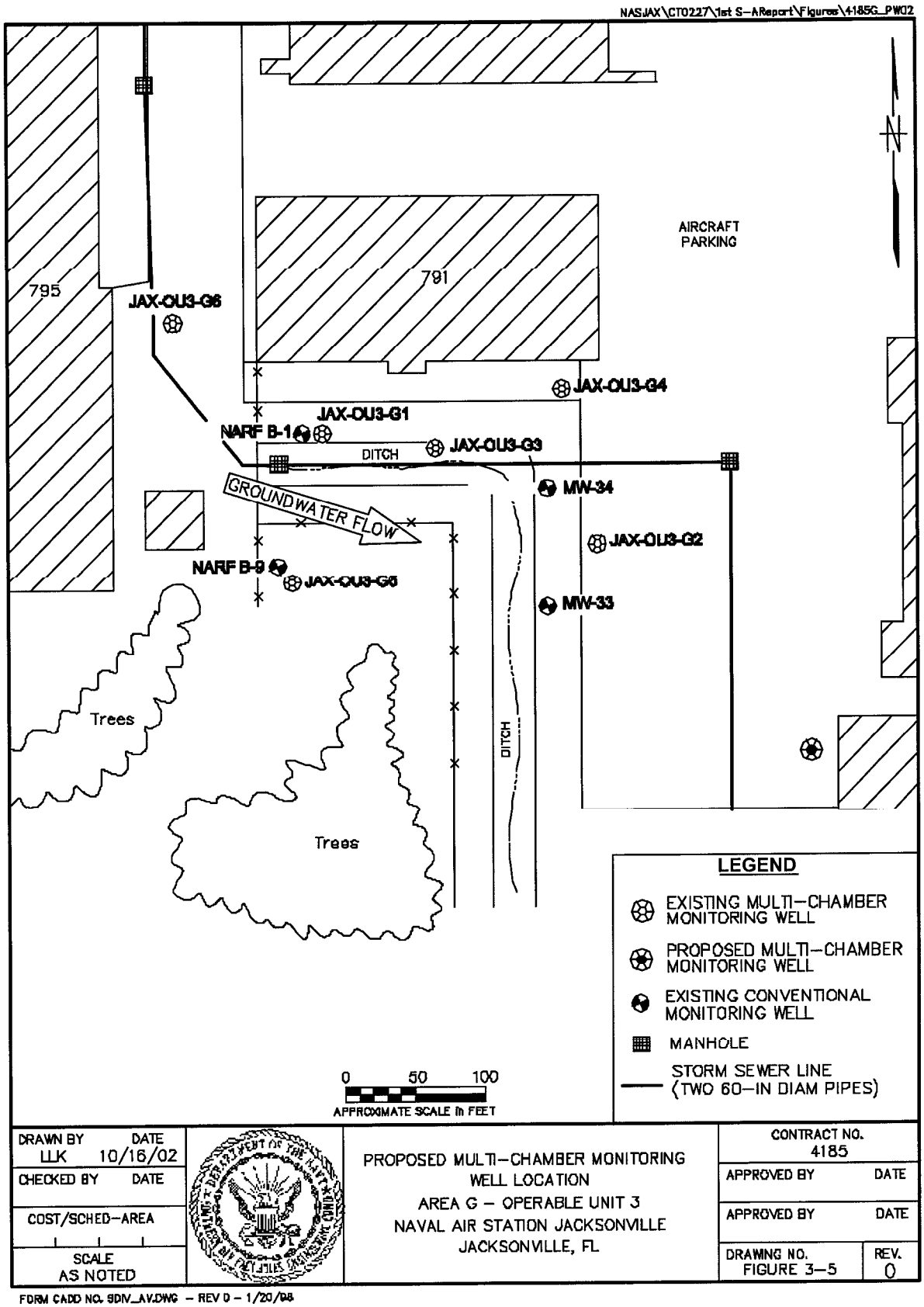
APPENDIX A
SITE MAPS

S:\NAVY\SITE5\CTO 111\CAD\0253BM01



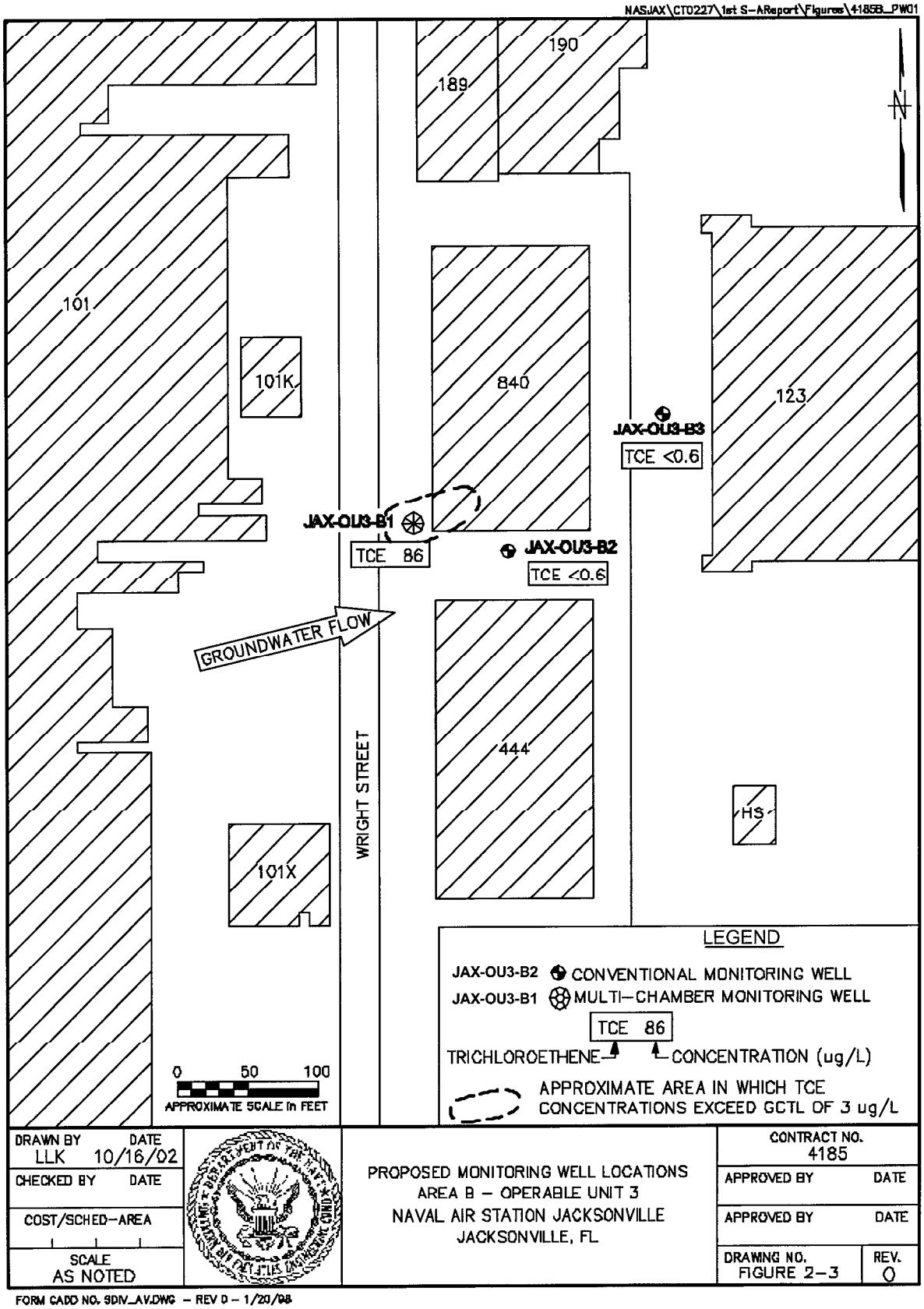
DRAWN BY LLK DATE 5/10/01		SITE LOCATION MAP AREAS B and G (OU3) NAS JACKSONVILLE JACKSONVILLE, FLORIDA	CONTRACT NO. N4018
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED–AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1–1 REV. 0

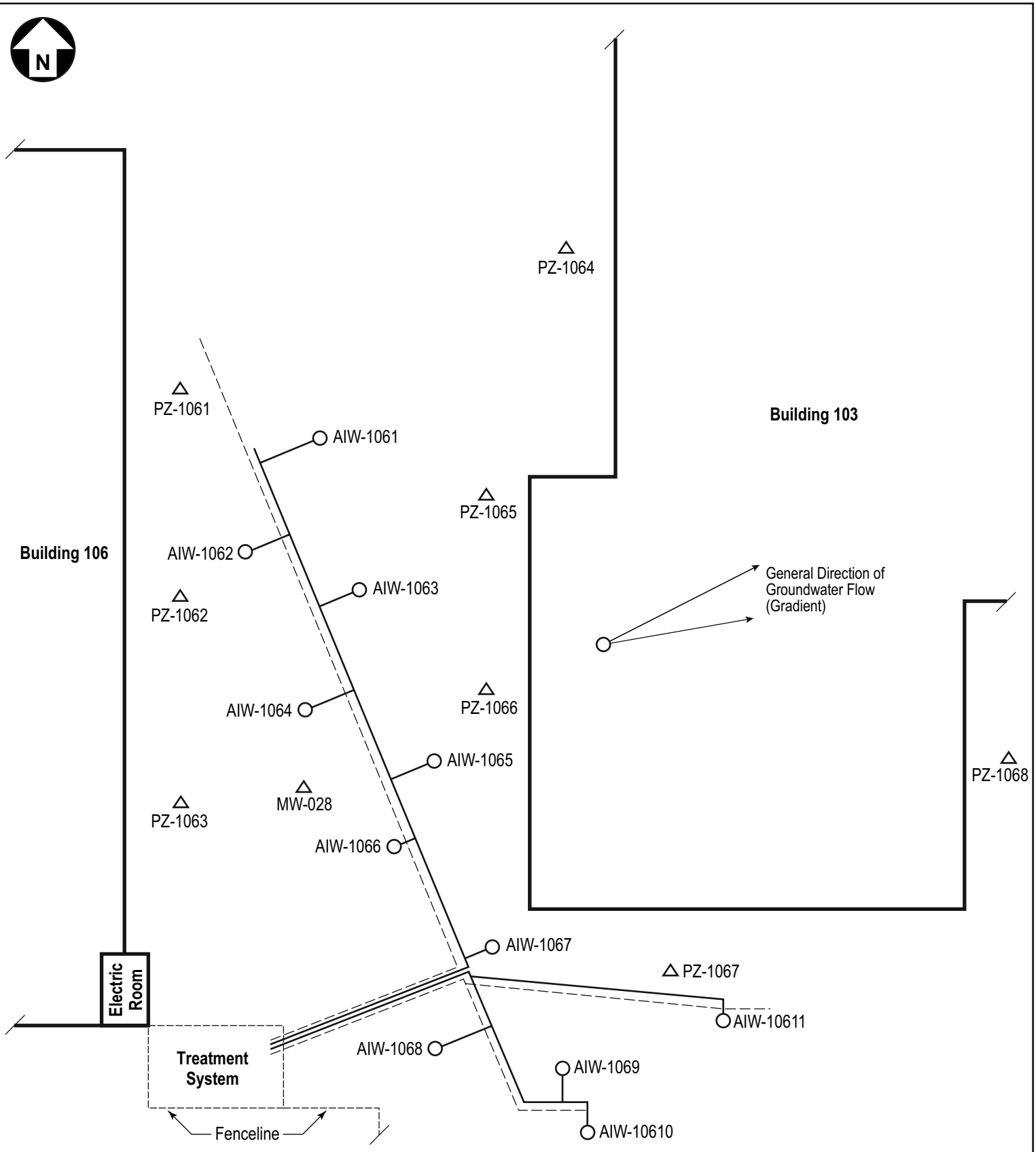
FORM CADD NO. SDIV_AV.DWG – REV 0 – 1/20/98



DRAWN BY LLK DATE 10/16/02		PROPOSED MULTI-CHAMBER MONITORING WELL LOCATION AREA G - OPERABLE UNIT 3 NAVAL AIR STATION JACKSONVILLE JACKSONVILLE, FL	CONTRACT NO. 4185
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-5 / REV. 0

FORM CADD NO. 9DIV_AV.DWG - REV 0 - 1/20/98


NASJAX\CTO227\1st S-AReport\Figures\41858_PW01
190
189
101
101K
840
123
JAX-OU3-B3
TCE <0.6
JAX-OU3-B1
TCE 86
JAX-OU3-B2
TCE <0.6
GROUNDWATER FLOW
WRIGHT STREET
444
HS
101X
LEGEND
JAX-OU3-B2 CONVENTIONAL MONITORING WELL
JAX-OU3-B1 MULTI-CHAMBER MONITORING WELL
TCE 86
TRICHLOROETHENE
CONCENTRATION (ug/L)
APPROXIMATE AREA IN WHICH TCE CONCENTRATIONS EXCEED GCTL OF 3 ug/L
0 50 100
APPROXIMATE SCALE In FEET
DRAWN BY LLK DATE 10/16/02
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED
PROPOSED MONITORING WELL LOCATIONS
AREA B - OPERABLE UNIT 3
NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FL
CONTRACT NO. 4185
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2-3
REV. 0
FORM CADD NO. 9DIV_AV.DWG - REV D - 1/20/98



LEGEND	Site Map		
△ PIEZOMETERS AND VAPOR PROBES			
○ AIR INJECTION WELLS	NAVAL AIR STATION JACKSONVILLE BUILDING 106 TREATMENT SYSTEM — SITE PLAN		
—— AIR SPARGING HEADERS			
– – – HORIZ. VAPOR EXTRACTION WELL	OPERATIONS REPORT	APPENDIX A-1 — DRAWINGS AND FIGURES	
A052003001ATL\NAS100.ai	SCALE: 1 in. = 30 ft.	Injection, Collection and Treatment System Site Layout	Figure 1-1

APPENDIX B
PROJECT SCHEDULE

GENERAL SCHEDULE OF PLANNED PERFORMANCE OF WORK

Natural Attenuation Monitoring & Air Sparging/Soil Vapor Extraction O&M, NAS Jacksonville, Florida
Contract N62467-03-G-0111 DO 0002

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Period of Performance Start**	0 days	Fri 6/27/03	Fri 6/27/03	
2	**Contract Award Date**	0 days	Wed 7/9/03	Wed 7/9/03	
3	**General Schedule/Ins Cert/HSP Submission**	0 days	Tue 7/29/03	Tue 7/29/03	2SF+15 days
4	**Sampling and Analysis Plan Development**	**46 days**	**Fri 7/25/03**	**Mon 9/29/03**	
5	**Draft Sampling and Analysis Plan Development**	**46 days**	**Fri 7/25/03**	**Mon 9/29/03**	
6	Receipt of Electronic Doc Files from Navy	1 day	Fri 7/25/03	Fri 7/25/03	
7	Draft S&A Plan Development	15 days	Mon 7/28/03	Fri 8/15/03	6
8	Submission of Draft S&A to Partnering Team	0 days	Fri 8/15/03	Fri 8/15/03	7
9	Review and Comment on Draft S&A	20 days	Mon 8/18/03	Mon 9/15/03	8
10	Apex Preparation of Final S&A Plan	5 days	Tue 9/16/03	Mon 9/22/03	9
11	Submission of Final S&A Plan to Partnering Team	0 days	Mon 9/22/03	Mon 9/22/03	10
12	Receipt of Regulatory Approval of Final S&A Plan	5 days	Tue 9/23/03	Mon 9/29/03	11
13	**Site 48 (Building 106) O&M and Reporting Activities**	**306 days**	**Fri 6/27/03**	**Mon 9/6/04**	
14	**O&M Transition Program**	**7 days**	**Wed 7/23/03**	**Fri 8/1/03**	
15	On-Site Transition Review with JA Jones,PWC & Facility Contacts	3 days	Wed 7/23/03	Fri 7/25/03	
16	Ramp Training and Review of Base Procedures with A. Long	1 day	Wed 7/23/03	Wed 7/23/03	
17	O&M Takeover Date (transfer Telemetry Notification #s and Ph Bill)	0 days	Fri 8/1/03	Fri 8/1/03	
18	**Weekly O&M Activities (week day performed subject to adjustment)**	**224 days**	**Mon 8/4/03**	**Mon 6/21/04**	
19	Weekly O&M Activities 1	1 day	Mon 8/4/03	Mon 8/4/03	
20	Weekly O&M Activities 2	1 day	Mon 8/11/03	Mon 8/11/03	
21	Weekly O&M Activities 3	1 day	Mon 8/18/03	Mon 8/18/03	
22	Weekly O&M Activities 4	1 day	Mon 8/25/03	Mon 8/25/03	
23	Weekly O&M Activities 5	1 day	Tue 9/2/03	Tue 9/2/03	
24	Weekly O&M Activities 6	1 day	Mon 9/8/03	Mon 9/8/03	
25	Weekly O&M Activities 7	1 day	Mon 9/15/03	Mon 9/15/03	
26	Weekly O&M Activities 8	1 day	Mon 9/22/03	Mon 9/22/03	
27	Weekly O&M Activities 9	1 day	Mon 9/29/03	Mon 9/29/03	
28	Weekly O&M Activities 10	1 day	Mon 10/6/03	Mon 10/6/03	
29	Weekly O&M Activities 11	1 day	Mon 10/13/03	Mon 10/13/03	
30	Weekly O&M Activities 12	1 day	Mon 10/20/03	Mon 10/20/03	
31	Weekly O&M Activities 13	1 day	Mon 10/27/03	Mon 10/27/03	

Apex Enviromental Engineering & Compliance, Inc.

ID	Task Name	Duration	Start	Finish	Predecessors
32	Weekly O&M Activities 14	1 day	Mon 11/3/03	Mon 11/3/03	
33	Weekly O&M Activities 15	1 day	Mon 11/10/03	Mon 11/10/03	
34	Weekly O&M Activities 16	1 day	Mon 11/17/03	Mon 11/17/03	
35	Weekly O&M Activities 17	1 day	Mon 11/24/03	Mon 11/24/03	
36	Weekly O&M Activities 18	1 day	Mon 12/1/03	Mon 12/1/03	
37	Weekly O&M Activities 19	1 day	Mon 12/8/03	Mon 12/8/03	
38	Weekly O&M Activities 20	1 day	Mon 12/15/03	Mon 12/15/03	
39	Weekly O&M Activities 21	1 day	Mon 12/22/03	Mon 12/22/03	
40	Weekly O&M Activities 22	1 day	Mon 12/29/03	Mon 12/29/03	
41	Weekly O&M Activities 23	1 day	Mon 1/5/04	Mon 1/5/04	
42	Weekly O&M Activities 24	1 day	Mon 1/12/04	Mon 1/12/04	
43	Weekly O&M Activities 25	1 day	Mon 1/19/04	Mon 1/19/04	
44	Weekly O&M Activities 26	1 day	Mon 1/26/04	Mon 1/26/04	
45	Weekly O&M Activities 27	1 day	Mon 2/2/04	Mon 2/2/04	
46	Weekly O&M Activities 28	1 day	Mon 2/9/04	Mon 2/9/04	
47	Weekly O&M Activities 29	1 day	Mon 2/16/04	Mon 2/16/04	
48	Weekly O&M Activities 30	1 day	Mon 2/23/04	Mon 2/23/04	
49	Weekly O&M Activities 31	1 day	Mon 3/1/04	Mon 3/1/04	
50	Weekly O&M Activities 32	1 day	Mon 3/8/04	Mon 3/8/04	
51	Weekly O&M Activities 33	1 day	Mon 3/15/04	Mon 3/15/04	
52	Weekly O&M Activities 34	1 day	Mon 3/22/04	Mon 3/22/04	
53	Weekly O&M Activities 35	1 day	Mon 3/29/04	Mon 3/29/04	
54	Weekly O&M Activities 36	1 day	Mon 4/5/04	Mon 4/5/04	
55	Weekly O&M Activities 37	1 day	Mon 4/12/04	Mon 4/12/04	
56	Weekly O&M Activities 38	1 day	Mon 4/19/04	Mon 4/19/04	
57	Weekly O&M Activities 39	1 day	Mon 4/26/04	Mon 4/26/04	
58	Weekly O&M Activities 40	1 day	Mon 5/3/04	Mon 5/3/04	
59	Weekly O&M Activities 41	1 day	Mon 5/10/04	Mon 5/10/04	
60	Weekly O&M Activities 42	1 day	Mon 5/17/04	Mon 5/17/04	
61	Weekly O&M Activities 43	1 day	Mon 5/24/04	Mon 5/24/04	
62	Weekly O&M Activities 44	1 day	Mon 5/31/04	Mon 5/31/04	

GENERAL SCHEDULE OF PLANNED PERFORMANCE OF WORK

Natural Attenuation Monitoring & Air Sparging/Soil Vapor Extraction O&M, NAS Jacksonville, Florida
Contract N62467-03-G-0111 DO 0002

ID	Task Name	Duration	Start	Finish	Predecessors
63	Weekly O&M Activities 45	1 day	Mon 6/7/04	Mon 6/7/04	
64	Weekly O&M Activities 46	1 day	Mon 6/14/04	Mon 6/14/04	
65	Weekly O&M Activities 47	1 day	Mon 6/21/04	Mon 6/21/04	
66	**Monthly and Quarterly Monitoring Events**	**230 days**	**Mon 8/25/03**	**Mon 7/19/04**	
67	**Aug 03 Monthly Event**	**21 days**	**Mon 8/25/03**	**Tue 9/23/03**	
68	Monthly Sampling Field Event	1 day	Mon 8/25/03	Mon 8/25/03	22SS
69	Lab Analysis and submission of Lab Report	10 days	Tue 8/26/03	Tue 9/9/03	68
70	Review of Lab Data	10 days	Wed 9/10/03	Tue 9/23/03	69
71	Email Submission of Lab Data to Tetratech	0 days	Tue 9/23/03	Tue 9/23/03	70
72	**Sept 03 - 3rd Quarter 03 Event**	**22 days**	**Mon 9/29/03**	**Tue 10/28/03**	
73	Quarterly Sampling Field Event	2 days	Mon 9/29/03	Tue 9/30/03	27SS
74	Lab Analysis and submission of Lab Report	10 days	Wed 10/1/03	Tue 10/14/03	73
75	Review of Lab Data	10 days	Wed 10/15/03	Tue 10/28/03	74
76	Email Submission of Lab Data to Tetratech	0 days	Tue 10/28/03	Tue 10/28/03	75
77	**Oct 03 Monthly Event**	**21 days**	**Mon 10/27/03**	**Mon 11/24/03**	
78	Monthly Sampling Field Event	1 day	Mon 10/27/03	Mon 10/27/03	31SS
79	Lab Analysis and submission of Lab Report	10 days	Tue 10/28/03	Mon 11/10/03	78
80	Review of Lab Data	10 days	Tue 11/11/03	Mon 11/24/03	79
81	Email Submission of Lab Data to Tetratech	0 days	Mon 11/24/03	Mon 11/24/03	80
82	**Nov 03 Monthly Event**	**21 days**	**Mon 11/24/03**	**Mon 12/29/03**	
83	Monthly Sampling Field Event	1 day	Mon 11/24/03	Mon 11/24/03	35SS
84	Lab Analysis and submission of Lab Report	10 days	Tue 11/25/03	Wed 12/10/03	83
85	Review of Lab Data	10 days	Thu 12/11/03	Mon 12/29/03	84
86	Email Submission of Lab Data to Tetratech	0 days	Mon 12/29/03	Mon 12/29/03	85
87	**Dec 03 - 4th Quarter 03 Event**	**21 days**	**Mon 12/29/03**	**Tue 1/27/04**	
88	Quarterly Sampling Field Event	1 day	Mon 12/29/03	Mon 12/29/03	40SS
89	Lab Analysis and submission of Lab Report	10 days	Tue 12/30/03	Tue 1/13/04	88
90	Review of Lab Data	10 days	Wed 1/14/04	Tue 1/27/04	89
91	Email Submission of Lab Data to Tetratech	0 days	Tue 1/27/04	Tue 1/27/04	90
92	**Jan 03 Monthly Event**	**21 days**	**Mon 1/26/04**	**Mon 2/23/04**	
93	Monthly Sampling Field Event	1 day	Mon 1/26/04	Mon 1/26/04	44SS

GENERAL SCHEDULE OF PLANNED PERFORMANCE OF WORK

Natural Attenuation Monitoring & Air Sparging/Soil Vapor Extraction O&M, NAS Jacksonville, Florida
Contract N62467-03-G-0111 DO 0002

ID	Task Name	Duration	Start	Finish	Predecessors
94	Lab Analysis and submission of Lab Report	10 days	Tue 1/27/04	Mon 2/9/04	93
95	Review of Lab Data	10 days	Tue 2/10/04	Mon 2/23/04	94
96	Email Submission of Lab Data to Tetratech	0 days	Mon 2/23/04	Mon 2/23/04	95
97	**Feb 03 Monthly Event**	**21 days**	**Mon 2/23/04**	**Mon 3/22/04**	
98	Monthly Sampling Field Event	1 day	Mon 2/23/04	Mon 2/23/04	48SS
99	Lab Analysis and submission of Lab Report	10 days	Tue 2/24/04	Mon 3/8/04	98
100	Review of Lab Data	10 days	Tue 3/9/04	Mon 3/22/04	99
101	Email Submission of Lab Data to Tetratech	0 days	Mon 3/22/04	Mon 3/22/04	100
102	**Mar 04 - 1st Quarter 04 Event**	**22 days**	**Mon 3/29/04**	**Tue 4/27/04**	
103	Quarterly Sampling Field Event	2 days	Mon 3/29/04	Tue 3/30/04	53SS
104	Lab Analysis and submission of Lab Report	10 days	Wed 3/31/04	Tue 4/13/04	103
105	Review of Lab Data	10 days	Wed 4/14/04	Tue 4/27/04	104
106	Email Submission of Lab Data to Tetratech	0 days	Tue 4/27/04	Tue 4/27/04	105
107	**Apr 04 Monthly Event**	**21 days**	**Mon 4/26/04**	**Mon 5/24/04**	
108	Monthly Sampling Field Event	1 day	Mon 4/26/04	Mon 4/26/04	57SS
109	Lab Analysis and submission of Lab Report	10 days	Tue 4/27/04	Mon 5/10/04	108
110	Review of Lab Data	10 days	Tue 5/11/04	Mon 5/24/04	109
111	Email Submission of Lab Data to Tetratech	0 days	Mon 5/24/04	Mon 5/24/04	110
112	**May 04 Monthly Event**	**21 days**	**Mon 5/24/04**	**Mon 6/21/04**	
113	Monthly Sampling Field Event	1 day	Mon 5/24/04	Mon 5/24/04	61SS
114	Lab Analysis and submission of Lab Report	10 days	Tue 5/25/04	Mon 6/7/04	113
115	Review of Lab Data	10 days	Tue 6/8/04	Mon 6/21/04	114
116	Email Submission of Lab Data to Tetratech	0 days	Mon 6/21/04	Mon 6/21/04	115
117	**June 04 - 2nd Quarter 03 Event**	**22 days**	**Mon 6/21/04**	**Mon 7/19/04**	
118	Quarterly Sampling Field Event	2 days	Mon 6/21/04	Tue 6/22/04	65SS
119	Lab Analysis and submission of Lab Report	10 days	Wed 6/23/04	Mon 7/5/04	118
120	Review of Lab Data	10 days	Tue 7/6/04	Mon 7/19/04	119
121	Email Submission of Lab Data to Tetratech	0 days	Mon 7/19/04	Mon 7/19/04	120
122	**Scheduled Maintenance Events (TO BE DETERMINED & UPDATED)**	**1 day**	**Fri 6/27/03**	**Fri 6/27/03**	
123	SVE Blower Bearing Replacement (Every 15-20K hrs)	1 day	Fri 6/27/03	Fri 6/27/03	
124	SVE & AS In-line filter Replacements (Annually)	1 day	Fri 6/27/03	Fri 6/27/03	

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ID	Task Name	Duration	Start	Finish	Predecessors
125	AS Blower Gearbox Oil Flush and Refill (Every 4500-7500 hrs)	1 day	Fri 6/27/03	Fri 6/27/03	
126	AS Blower Grease Drive End Bearings (Every 500 hrs)	1 day	Fri 6/27/03	Fri 6/27/03	
127	Soap Test Piping for Leaks (Annually)	1 day	Fri 6/27/03	Fri 6/27/03	
128	PLC Panel Function Test (Semi-Annually)	1 day	Fri 6/27/03	Fri 6/27/03	
129	Telemetry System Test (Annually)	1 day	Fri 6/27/03	Fri 6/27/03	
130	**Site 48 (Building 106) Reporting**	**219 days**	**Wed 10/29/03**	**Mon 9/6/04**	
131	**3rd Quarter 03 Status Report (Jul 03 through Sept 03)**	**35 days**	**Wed 10/29/03**	**Thu 12/18/03**	
132	**Draft Report Development**	**20 days**	**Wed 10/29/03**	**Tue 11/25/03**	
133	Apex Draft Report Development	15 days	Wed 10/29/03	Tue 11/18/03	75
134	Apex Internal Review and Finalization of Draft Report	5 days	Wed 11/19/03	Tue 11/25/03	133
135	Submission of Draft Report to Navy for Review and Comment	0 days	Tue 11/25/03	Tue 11/25/03	134
136	Navy Review and Comment	10 days	Wed 11/26/03	Thu 12/11/03	135
137	Apex Preparation of Final Report	5 days	Fri 12/12/03	Thu 12/18/03	136
138	Submission of Final Quarterly Report to DEP/EPA	0 days	Thu 12/18/03	Thu 12/18/03	137
139	**4th Quarter 03 Status Report (Oct 03 through Dec 03)**	**35 days**	**Wed 1/28/04**	**Tue 3/16/04**	
140	**Draft Report Development**	**20 days**	**Wed 1/28/04**	**Tue 2/24/04**	
141	Apex Draft Report Development	15 days	Wed 1/28/04	Tue 2/17/04	90
142	Apex Internal Review and Finalization of Draft Report	5 days	Wed 2/18/04	Tue 2/24/04	141
143	Submission of Draft Report to Navy for Review and Comment	0 days	Tue 2/24/04	Tue 2/24/04	142
144	Navy Review and Comment	10 days	Wed 2/25/04	Tue 3/9/04	143
145	Apex Preparation of Final Report	5 days	Wed 3/10/04	Tue 3/16/04	144
146	Submission of Final Quarterly Report to DEP/EPA	0 days	Tue 3/16/04	Tue 3/16/04	145
147	**Annual Status Report (Apr 03 through Mar 04)**	**40 days**	**Wed 4/28/04**	**Tue 6/22/04**	
148	**Draft Report Development**	**25 days**	**Wed 4/28/04**	**Tue 6/1/04**	
149	Apex Draft Report Development	20 days	Wed 4/28/04	Tue 5/25/04	105
150	Apex Internal Review and Finalization of Draft Report	5 days	Wed 5/26/04	Tue 6/1/04	149
151	Submission of Draft Report to Navy for Review and Comment	0 days	Tue 6/1/04	Tue 6/1/04	150
152	Navy Review and Comment	10 days	Wed 6/2/04	Tue 6/15/04	151
153	Apex Preparation of Final Report	5 days	Wed 6/16/04	Tue 6/22/04	152
154	Submission of Final Annual Report to DEP/EPA	0 days	Tue 6/22/04	Tue 6/22/04	153
155	**2nd Quarter 04 Status Report (Apr 04 through Jun 04)**	**35 days**	**Tue 7/20/04**	**Mon 9/6/04**	

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ID	Task Name	Duration	Start	Finish	Predecessors
156	**Draft Report Development**	**20 days**	**Tue 7/20/04**	**Mon 8/16/04**	
157	Apex Draft Report Development	15 days	Tue 7/20/04	Mon 8/9/04	120
158	Apex Internal Review and Finalization of Draft Report	5 days	Tue 8/10/04	Mon 8/16/04	157
159	Submission of Draft Report to Navy for Review and Comment	0 days	Mon 8/16/04	Mon 8/16/04	158
160	Navy Review and Comment	10 days	Tue 8/17/04	Mon 8/30/04	159
161	Apex Preparation of Final Report	5 days	Tue 8/31/04	Mon 9/6/04	160
162	Submission of Final Quarterly Report to DEP/EPA	0 days	Mon 9/6/04	Mon 9/6/04	161
163	**Long Term Monitoring Activities - Site 11 Area B and Site 15 Area G**	**122 days**	**Tue 9/30/03**	**Thu 3/25/04**	
164	**Semi Annual Monitoring and Reporting Event (COC Only)**	**62 days**	**Tue 9/30/03**	**Wed 12/31/03**	
165	Sampling Field Event	2 days	Tue 9/30/03	Wed 10/1/03	12
166	Lab Analysis and submission of Lab Report	10 days	Thu 10/2/03	Wed 10/15/03	165
167	Review of Lab Data	10 days	Thu 10/16/03	Wed 10/29/03	166
168	Email Submission of Lab Data to Tetratech	0 days	Wed 10/29/03	Wed 10/29/03	167
169	**Draft Report Development**	**25 days**	**Thu 10/30/03**	**Fri 12/5/03**	
170	Apex Draft Report Development	20 days	Thu 10/30/03	Wed 11/26/03	167
171	Apex Internal Review and Finalization of Draft Report	5 days	Mon 12/1/03	Fri 12/5/03	170
172	Submission of Draft Report to Navy for Review and Comment	0 days	Fri 12/5/03	Fri 12/5/03	171
173	Navy Review and Comment	10 days	Mon 12/8/03	Fri 12/19/03	172
174	Apex Preparation of Final Report	5 days	Mon 12/22/03	Wed 12/31/03	173
175	Submission of Final Semi Annual Report to DEP/EPA	0 days	Wed 12/31/03	Wed 12/31/03	174
176	**Annual Monitoring and Reporting Event (COC & NA Parameters)**	**62 days**	**Tue 12/30/03**	**Thu 3/25/04**	
177	Sampling Field Event	2 days	Tue 12/30/03	Wed 12/31/03	88
178	Lab Analysis and submission of Lab Report	10 days	Fri 1/2/04	Thu 1/15/04	177
179	Review of Lab Data	10 days	Fri 1/16/04	Thu 1/29/04	178
180	Email Submission of Lab Data to Tetratech	0 days	Thu 1/29/04	Thu 1/29/04	179
181	**Draft Report Development**	**25 days**	**Fri 1/30/04**	**Thu 3/4/04**	
182	Apex Draft Report Development	20 days	Fri 1/30/04	Thu 2/26/04	179
183	Apex Internal Review and Finalization of Draft Report	5 days	Fri 2/27/04	Thu 3/4/04	182
184	Submission of Draft Report to Navy for Review and Comment	0 days	Thu 3/4/04	Thu 3/4/04	183
185	Navy Review and Comment	10 days	Fri 3/5/04	Thu 3/18/04	184
186	Apex Preparation of Final Report	5 days	Fri 3/19/04	Thu 3/25/04	185

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ID	Task Name	Duration	Start	Finish	Predecessors
187	Submission of Final Report to DEP/EPA	0 days	Thu 3/25/04	Thu 3/25/04	186
188	**Living CD Submissions**	**227 days**	**Fri 10/17/03**	**Mon 9/6/04**	
189	3rd Quarter 2003	0 days	Fri 10/17/03	Fri 10/17/03	
190	4th Quarter 2003	0 days	Fri 1/16/04	Fri 1/16/04	
191	1st Quarter 2004	0 days	Fri 4/16/04	Fri 4/16/04	
192	2nd Quarter 2004	0 days	Mon 9/6/04	Mon 9/6/04	162SS
193	**Partnering Meetings (To be Added When Scheduled for Apex Attendance)**	0 days	Fri 6/27/03	Fri 6/27/03	
194	**Period of Performance End**	0 days	Sat 6/26/04	Sat 6/26/04	