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CONTAMINATION ASSESSMENT PLAN FOR TANK SITE 283 NS MAYPORT FL

5/1/2002

TETRA TECH NUS

Contamination Assessment Plan
for
Tank Site 283

Naval Station Mayport
Mayport, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0230

May 2002

02JAX0088

CONTAMINATION ASSESSMENT PLAN
FOR
TANK SITE 283

NAVAL STATION MAYPORT
MAYPORT, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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

Submitted by:
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MAY 2002

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ACRONYMS

AST	Aboveground Storage Tank
bls	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
CAP	Contamination Assessment Plan
COCs	Constituents of Concern
CompQAP	Comprehensive Quality Assurance Plan
CTO	Contract Task Order
DOT	Department of Transportation
DPT	Direct Push Technology
EDB	Ethylene Dibromide
EDC	Dichloroethane
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	Flame Ionization Detector
FL-PRO	Florida Petroleum Range Organics
FOL	Field Operations Leader
ft	Foot/Feet
GAG	Gasoline Analytical Group
IDW	Investigation Derived Waste
KAG	Kerosene Analytical Group\
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MTBE	Methyl-Tert-Butyl Ether
NAVSTA	Naval Station
Navy	United States Navy
OVA	Organic Vapor Analyzer
PAHs	Polynuclear Aromatic Hydrocarbons
ppm	Parts per Million
PPVOH	Priority Pollutant Volatile Organic Halocarbons
PVC	Polyvinyl Chloride
QC	Quality Control
SAR	Site Assessment Report
SOPs	Standard Operating Procedures
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
TCR	Tank Closure Report

ACRONYMS (Continued)

TOC	Top-Of-Casing
TOM	Task Order Manager
TRPH	Total Recoverable Petroleum Hydrocarbons
TtNUS	Tetra Tech NUS, Inc.
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
VOHs	Volatile Organic Hydrocarbons

1.0 INTRODUCTION

Tetra Tech NUS, Inc. (TtNUS) has prepared this Contamination Assessment Plan (CAP) for the Tank Site 283, Naval Station (NAVSTA) Mayport, Mayport, Florida. This CAP was prepared for the United States Navy (Navy) Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under Contract Task Order (CTO) 0230, for the Comprehensive Long-term Environmental Action Navy III Contract Number N62467-94-D-0888.

This investigation is intended to assist the Navy in completing their agreement as indicated in the discharge notification letter in Appendix A.

1.1 OBJECTIVE

The CAP provides the rationale and methodology for performing field activities to characterize soil and groundwater conditions at the referenced site. The objective of the proposed field investigation is to determine if soil and/or groundwater are adversely impacted by previous operations at the site. The data collected during the investigation will be used to prepare a Site Assessment Report (SAR) and subsequent corrective action documents, if required, in accordance with Chapter 62-770.600, Florida Administrative Code (FAC). The SAR will assimilate information from this investigation to provide a characterization of site conditions from which to base future courses of action.

2.0 SITE DESCRIPTION

NAVSTA Mayport is located within the corporate limits of the city of Jacksonville, Duval County, Florida, and approximately 12 miles to the northeast of downtown Jacksonville and adjacent to the town of Mayport (Figure 2-1). The station complex is located on the northern end of a peninsula bound by the Atlantic Ocean to the east and the St. Johns River to the north and west. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport located to the west between the station and the St. Johns River.

Tank Site 283 is located on the north side of Massey Avenue approximately 350 feet (ft) to the west of the south leg of the turning basin as seen on Figure 2-1. Since about 1992, the fuel systems, generator, and pump house at Tank Site 283 have been removed, but the large water tank (288) remains at the site (Figure 2-1). The area has become an open yard with mostly gravel-covered parking and some asphalt and grassy areas, which is used by private contractors as a work yard and general storage area. Several utilities may still traverse the site underground.

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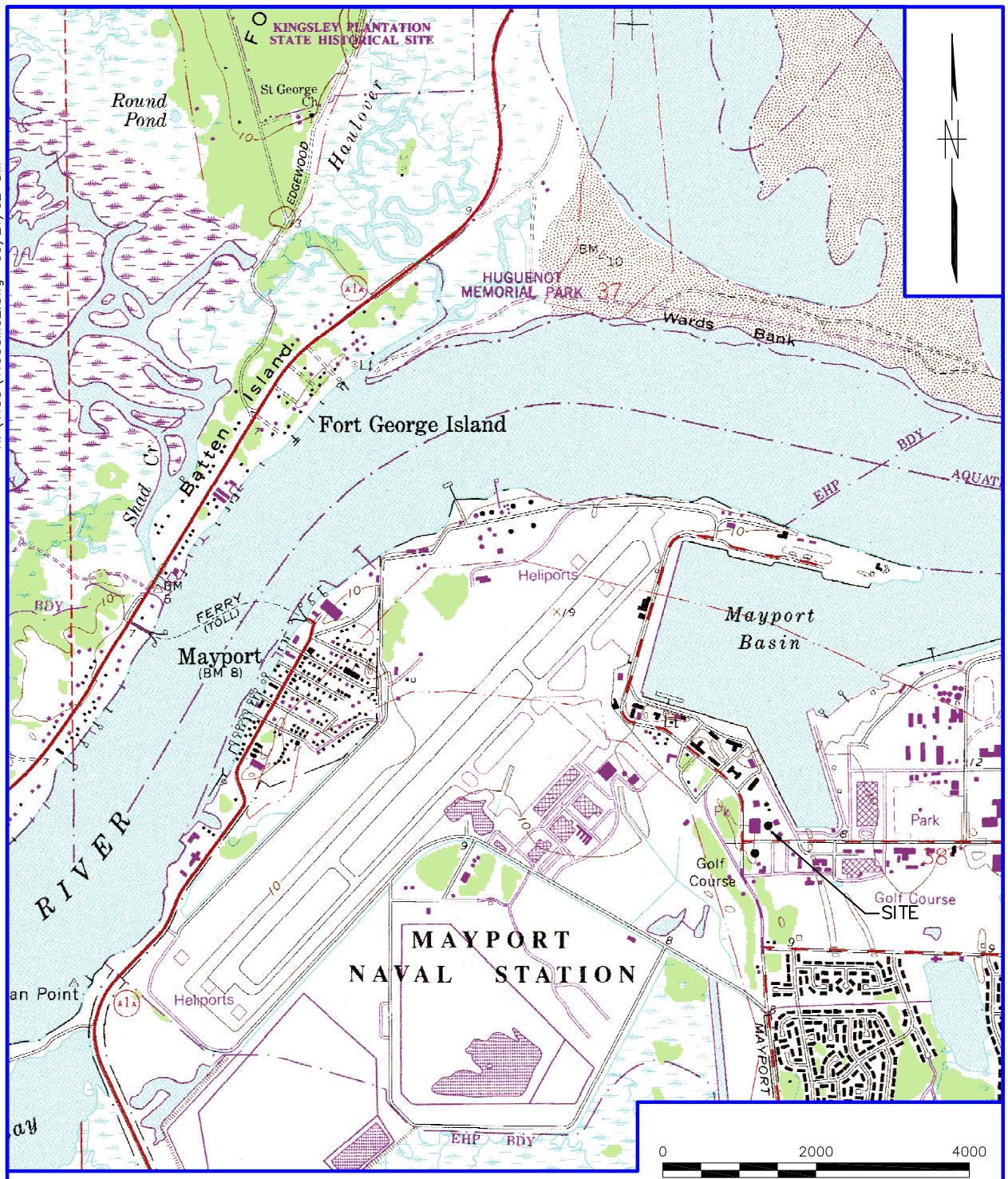

SOURCE: USGS MAYPORT, FLORIDA 7.5-MINUTE TOPOGRAPHIC QUADRANGLE, 1964 (PHOTO-REVISED 1992)

DRAWN BY DM	DATE 3/21/02	TOPOGRAPHIC MAP CONTAMINATION ASSESSMENT PLAN TANK SITE 283 U.S. NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NO. 4195
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COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 2-1 / REV. 0

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3.0 SITE HISTORY

The Tank Closure Report (TCR) (Hydro Terra, 1993) indicates that the site's diesel underground storage tank (UST) and an unleaded gasoline aboveground storage tank (AST) were removed on December 23, 1992. Both tanks were single-walled and made of steel, and the dates of installation are unknown. The removal work was performed in accordance with the then current regulation in Chapter 17-761, FAC.

Tank Site 283, located on Massey Avenue, consisted of a 2000-gallon diesel UST, which was connected via product lines to an AST, which was known as a day tank. A 300-gallon unleaded gasoline AST was also maintained at the site. The diesel UST and day tank appear to have supplied a generator, which supplied power to the Building 283 Pump House. The TCR also indicates that the gasoline AST, which had a capacity of 300 gallons served to supply fuel to an emergency generator. Figure 3-1 shows the former locations of the two fuel systems, generator, and pump house and nearby buildings.

The TCR indicates that only the UST was visually inspected for evidence of corrosion. Though there was some evidence of corrosion, no holes, cracks, or evidence of discharge were reported. During the tank removal eight samples were collected from the excavated soils. The reported soil vapor data indicated the presence of petroleum hydrocarbon vapors in five of the eight samples collected, ranging from 2 parts per million (ppm) to 25 ppm. In addition, they collected five samples from the sides and bottom of the open tank pit. Four of those five soil samples indicated the presence of petroleum hydrocarbon vapors, two of which were considered excessively contaminated in accord with the 50-ppm rule for kerosene-impacted soils. Reportedly, the two excessively contaminated samples were for samples collected below the water table. The water table was encountered at approximately 5 ft below land surface (bls) during the tank removal. Following the tank removal, the excavated soil was placed back into the excavation. According to the TCR, a groundwater sample was collected from a temporary well, located in the former tank pit. The sample was analyzed for United States Environmental Protection Agency (USEPA) Methods 602 [including methyl-tert-butyl ether (MTBE)] and 610. The TCR indicated that the current cleanup target levels for several USEPA Method 610 compounds had been exceeded.

During a site visit on December 13, 2001, the Navy supplied TtNUS personnel with a letter from the Florida Department of Environmental Protection (FDEP) that recognized the TCR as having adequately met the requirements of the FDEP's rules and guidelines for petroleum tank closure.

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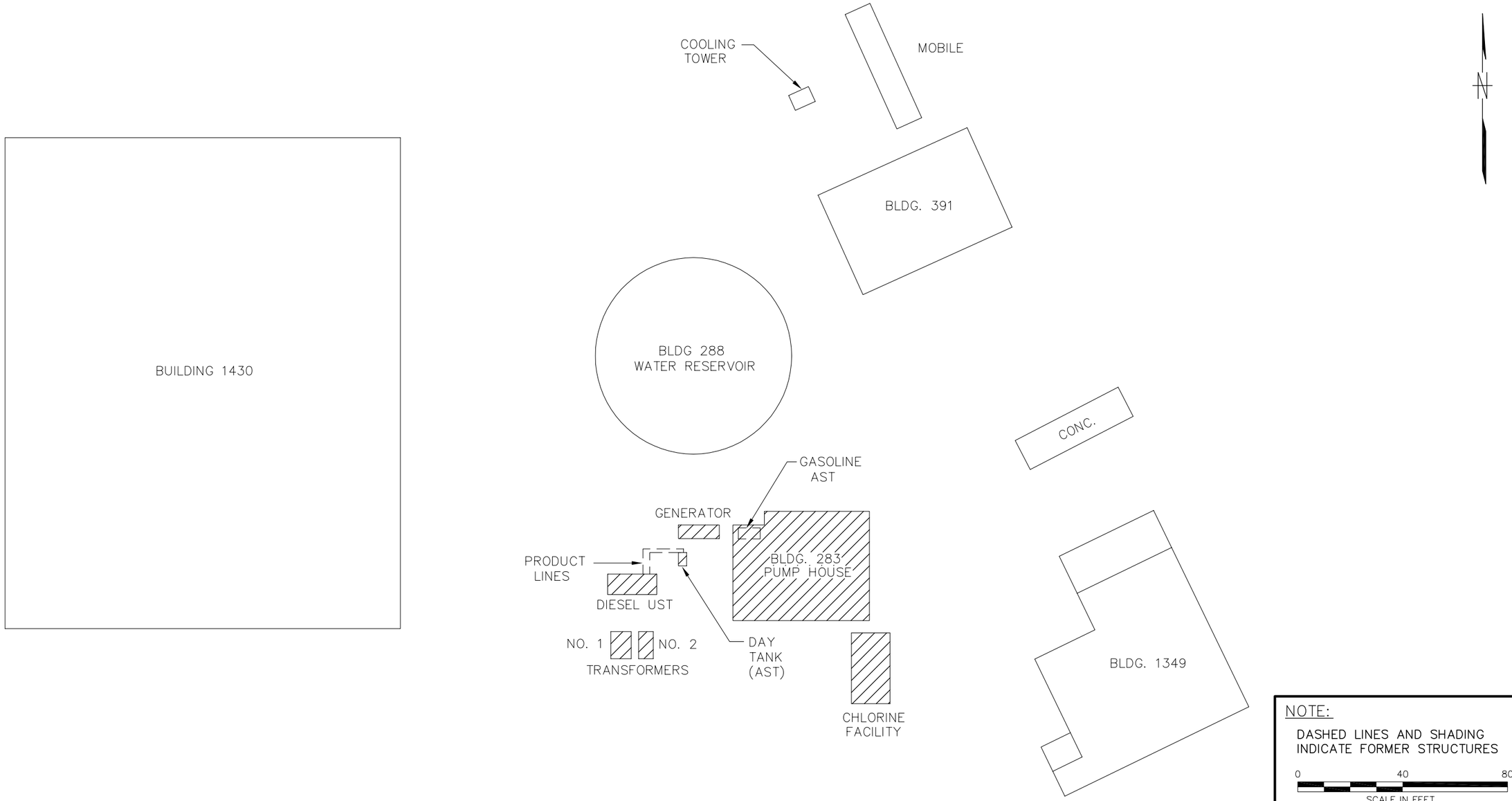

NOTE:

DASHED LINES AND SHADING INDICATE FORMER STRUCTURES

0 40 80

SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY DM DATE 3/21/02

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COST/SCHED–AREA

SCALE AS NOTED

SOUTHERN DIV. FACILITIES ENGINEERING COMMAND — DEPARTMENT OF THE NAVY

SITE AREA MAP
CONTAMINATION ASSESSMENT PLAN
BUILDING 283
MAYPORT NAVAL STATION
MAYPORT, FLORIDA

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DRAWING NO. FIGURE 3–1

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4.0 OBJECTIVE AND SCOPE OF PROPOSED ASSESSMENT

The objective of the proposed assessment described in this workplan is as follows:

- Determine if petroleum contamination exists in the soil and/or groundwater at the site.
- Meet the requirements of Chapter 62-770.600, FAC for completion of a SAR.
- Gather information to support a "No Further Action" proposal, Natural Attenuation Monitoring Plan, or Remedial Action Plan as required.

The work in the following sections will be completed in accordance with TtNUS' Comprehensive Quality Assurance Plan (CompQAP) (TtNUS, 1999) and FDEP Standard Operating Procedures (SOPs).

At the end of each day in the field, the Field Operations Leader (FOL) will complete a Daily Activities Record for any subcontractor activities (Appendix B).

4.1 SOIL INVESTIGATION AND DPT GROUNDWATER SCREENING

TtNUS proposes to conduct the investigation in two phases. During the first phase, direct push technology (DPT) techniques will be used to advance soil borings and to collect soil and groundwater samples for mobile laboratory analysis of benzene, toluene, ethylbenzene and total xylenes (BTEX), MTBE, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. A site plan showing proposed initial DPT locations is presented as Figure 4-1. Soil samples will be collected from each location beginning at approximately 1 ft bls and continue at 2-ft intervals until approximately 1 ft into the saturated zone. Soil samples collected during this effort will be field screened using an organic vapor analyzer (OVA) with flame ionization detector (FID). A split sample will be collected from the interval above the capillary fringe that exhibits the highest OVA response. In the absence of any OVA response, the split sample will be collected from approximately 1 ft above the water table. A soil-boring log will be maintained for each location with the OVA-FID data. Split samples from select locations will be submitted to the mobile laboratory for analysis as required by 62-770, FAC. Groundwater samples will be collected mostly from the shallow portions approximately 6 to 10 ft bls of the saturated zone. However, limited intermediate (approximately 20 to 24 ft bls) and deep (approximately 30 to 34 ft bls) samples will be collected to screen for vertical migration of contaminants.

At the end of the first phase of activities, confirmatory soil samples will also be collected and submitted to a fixed-based laboratory as required in Chapter 62-770, FAC. A soil and sediment sample log sheet will be maintained for each of these samples (Appendix B). These samples will be analyzed for the Gasoline Analytical Group (GAG) and Kerosene Analytical Group (KAG) constituents of concern (COCs) required in Chapter 62-770, FAC, and shown on Table 4-1. For the purposes of this investigation, Tank Site 283 will

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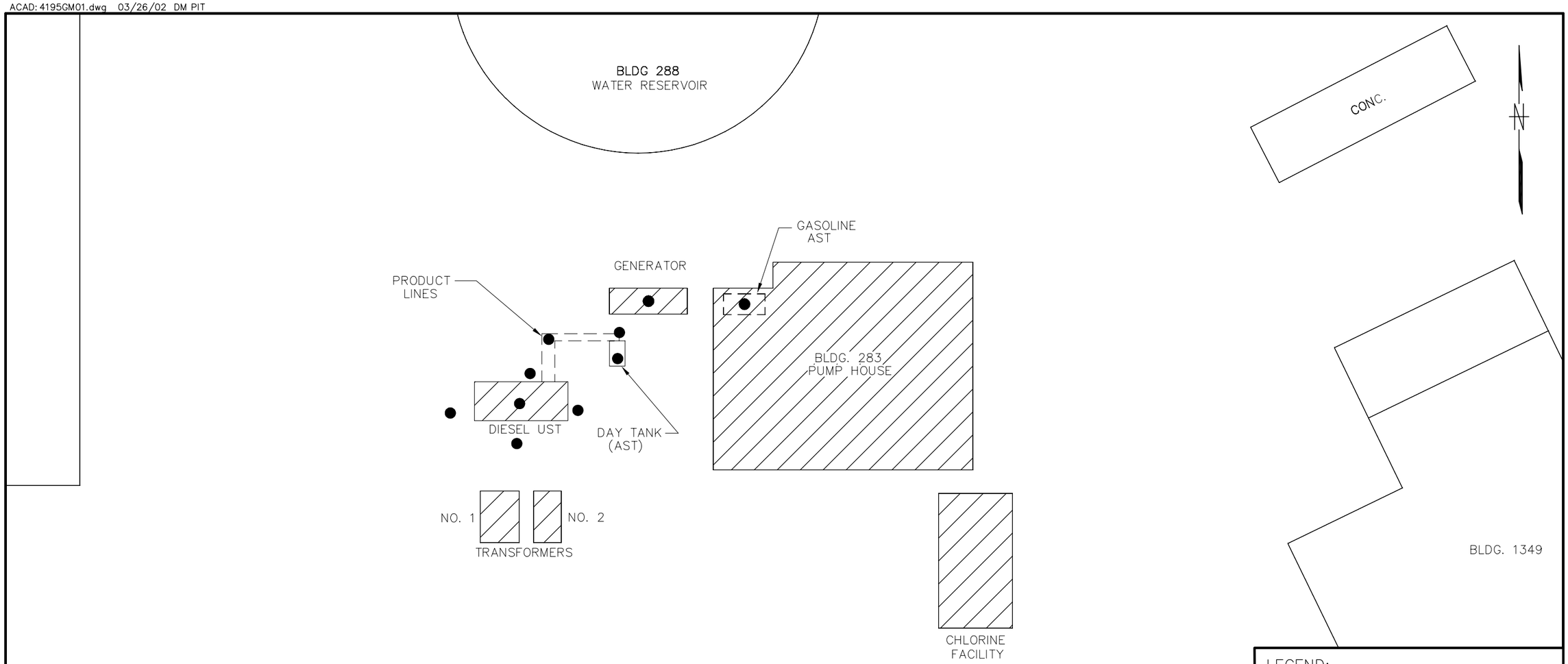

LEGEND:

● PROPOSED DPT LOCATION

NOTE:

DASHED LINES AND SHADING INDICATE FORMER STRUCTURES

0 20 40

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DEPARTMENT OF THE NAVY ★ CNO ★ SOUTHERN DIV FACILITIES ENGINEERING

PROPOSED INITIAL DPT BORING LOCATIONS
CONTAMINATION ASSESSMENT PLAN
BUILDING 283
MAYPORT NAVAL STATION
MAYPORT, FLORIDA

CONTRACT NO. 4195

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TABLE 4-1
FIXED-BASED LABORATORY SAMPLE SUMMARY

Contamination Assessment Plan
Tank Site 283
Naval Station Mayport
Mayport, Florida

Analyte	Proposed Method (1)	Environmental Samples (2)	IDW Samples (3)	Duplicate Samples	MS/MSD (4)	Equipment Blanks (Aqueous)	Trip Blanks (Aqueous)	Total Samples
GROUNDWATER								
BTEX, MTBE, PPVOHs, and 1,2-EDC	SW-846 USEPA 8021B or 8260B	5	0	1	1	1	1	9
PAH (6)	SW-846 USEPA 8310	5	0	1	1	1	0	8
LEAD, total	SW-846 USEPA 6010B	5	0	1	1	1	0	8
EDB	USEPA 504.1	5	0	1	1	1	0	8
TRPH	FL-PRO	5	0	1	1	1	0	8
SOIL								
BTEX and MTBE	SW-846 USEPA 8021B or 8260B	3	0	1	1	1	0	6
PAHs (6)	SW-846 USEPA 8310	3	0	1	1	1	0	6
VOHs	SW-846 USEPA 8021B	0	1	0	0	0	0	1
TRPH	FL-PRO	3	0	1	1	1	0	6
Metals (5)	SW846 USEPA 6010B	0	1	0	0	0	0	1

(1) Method referenced reflects FDEP requirements.
(2) Environmental samples include 5 groundwater well samples and 3 confirmatory soil samples.
(3) Investigation derived waste (IDW) sample numbers based upon disposing of twenty 55-gallon drums (one composite sample) of soil. Groundwater analyticals will be used to determine the appropriate disposal method of the development and purge water. Soil analytical for volatiles, polynuclear armoatic hydrocarbons (PAHs), and total recoverable petroleum hydrocarbons (TRPH) (collected from environmental samples) will be used to characterize soil for proper disposal. In accord with Chapter 62-713, FAC, an additional discrete and composite sample will be collected for volatile organic hydrocarbons (VOHs) and metals, respectively, from the soil IDW generated in order to complete the soil characterization for proper disposal.
(4) MS/MSD = Matrix Spike/Matrix Spike Duplicate.
(5) Total analyses for arsenic, cadmium, chromium, and lead.
(6) Includes 1-MN, 2-MN and 16 method-listed PAHs included in Table A of Chapter 62-770, FAC.
(7) PPVOHs = Priority Pollutant Volatile Organic Halocarbons.
(8) EDB = Ethylene Dibromide.
(9) EDC = Dichloroethane.
(10) FL-PRO = Florida Petroleum Range Organics.

be considered the sole source area requiring three soil samples [Chapter 62-770.600(3)(e), FAC] be collected from locations representing low, medium, and high field screening responses.

4.2 GROUNDWATER INVESTIGATION

The second phase of the investigation will be based on results of the first phase, and will involve the installation of four permanent shallow monitoring wells (approximately 15 ft deep) and one vertical extent well (approximately 30 ft deep) using a truck-mounted drill rig and hollow stem augers. The shallow wells will be positioned to intersect the water table such that about 3 ft of screen is exposed above the water table to allow for seasonal fluctuations. Locations of the shallow wells will be determined by the results of the DPT investigation. The vertical extent well will be installed immediately downgradient of the area of highest contamination as determined during the DPT phase of the investigation. A boring log, monitoring well sheet, and certificate of conformance will be maintained for each well installation (Appendix B).

Following well installation and development, a round of synoptic water levels will be collected from the monitoring wells. Afterward, groundwater samples will be collected from each of the new wells and delivered to a certified laboratory for analysis of the COCs included in the GAG and KAG. The quantity and type of groundwater samples to be analyzed are provided in Table 4-1. No sooner than one month later, a second round of synoptic water levels will be collected. A second round of groundwater samples may be collected, if deemed necessary, following review of the SAR by the FDEP.

A registered surveyor will survey the permanent monitoring wells installed during the site assessment. Horizontal positioning will be measured and plotted with respect to the Florida State Plane Coordinate System and the North American Datum of 1983. The top of casing (TOC) elevation of each permanent monitoring well will be surveyed with respect to the North American Vertical Datum of 1988 and referenced to site features (building corners, etc.). The TOC elevations will be used with the depth-to-water data previously mentioned to determine groundwater flow direction and gradient.

Aquifer testing will not be necessary to determine aquifer characteristics, since extensive aquifer data for NAVSTA Mayport has been obtained and documented by the United States Geological Survey. This data will be referenced and used if appropriate.

TtNUS will obtain information on potable wells in the vicinity from NAVSTA Mayport personnel.

4.3 MONITORING WELL CONSTRUCTION, DEVELOPMENT, AND SAMPLING

The drilling subcontractor, prior to initiation of drilling activities, will obtain well installation permits. TtNUS will also contact NAVSTA Mayport Environmental prior to drilling activities regarding planned well

placement, depths and method of installation. Permanent monitoring wells will be installed using hollow stem auger drilling techniques. Monitoring wells will be constructed of 2-inch inside diameter, Schedule 40, flush-joint polyvinyl chloride (PVC) riser and flush-joint 0.010-inch factory-slotted well screen. Shallow monitoring well screen sections will be approximately 10 ft in length and positioned to intersect the water table. Vertical extent monitoring wells will be single-cased and constructed with approximately 5 ft of 0.010-inch, factory-slotted, Schedule 40 PVC well screen and the necessary length of Schedule 40 PVC riser. After the borings are drilled to the desired depth, wells will be installed through the augers. A diagram showing typical well construction design is presented as Figure 4-2.

The monitoring wells will be developed no sooner than 24 hours after placement of grout to remove fine sediment from around the screened interval of the well. Wells will be developed by bailing and surging, or by pumping, as determined by the field geologist. Field parameters (pH, temperature, turbidity, and specific conductance) will be measured at equally spaced time intervals during well development. Wells will be developed a maximum of one hour or until the field measurements become stable and the development water is visibly clear. Water quality stabilization will be determined using the following criteria:

- Temperature, plus or minus 0.5º Celsius
- pH, plus or minus 0.1 unit
- Specific conductivity, plus or minus 10 microsiemens

These data will be recorded on a monitoring well development record (Appendix B). No sooner than 24 hours after development, groundwater samples will be collected from monitoring wells in accord with SOPs. Prior to obtaining samples, synoptic water levels and total well depths will be measured and recorded on a groundwater level measurement sheet (Appendix B). A second round of water levels will be collected approximately one month later on the same data sheet.

The wells will be purged with a peristaltic pump using low flow quiescent purging techniques. The data will be recorded on a low flow purge data sheet (Appendix B). Three to five well volumes will be purged. If wells are purged dry with less than three well volumes removed, the water level in the well will be allowed to recover at least 80 percent, then a sample will be collected. Field measurements of pH, temperature, turbidity, and specific conductance will be taken after each well volume of water is purged, or at 5- or 10-minute intervals, depending on the flow rate. Stabilization will be defined according to criteria stated in the previous paragraph. If stabilization is not achieved after three volumes, up to five volumes will be removed, after which samples will be collected in the appropriate (lab preserved) sample containers. Samples to be analyzed for volatile constituents shall be collected first and immediately sealed in 40-milliliter vials so that no headspace exists. Samples will be analyzed for compounds listed in

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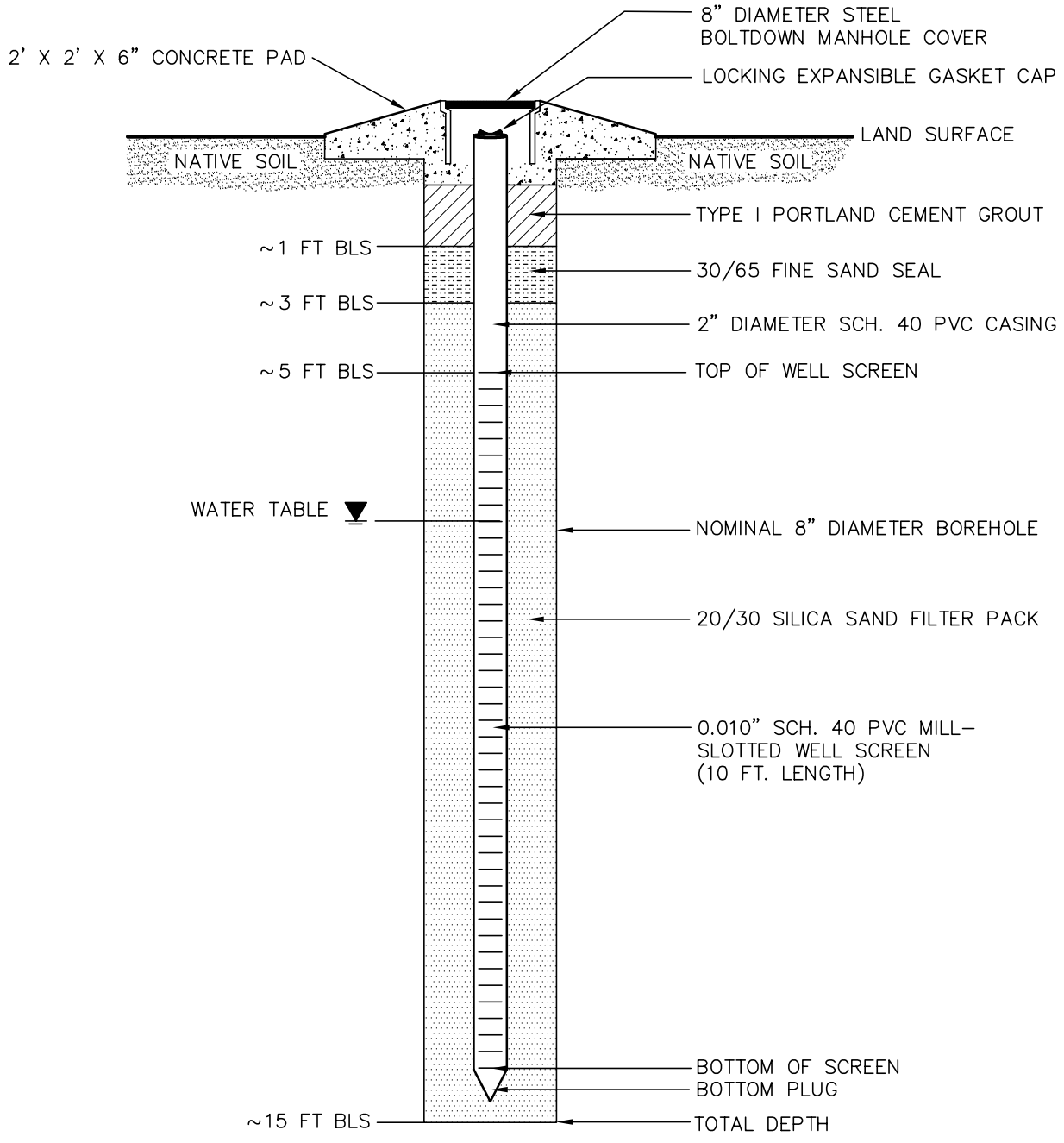

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Table 4-1. The data acquired during sampling will be recorded on a groundwater sample log sheet (Appendix B).

4.4 EQUIPMENT DECONTAMINATION

The equipment involved in well installation and well sampling activities will be decontaminated prior to and during the respective field activities in accordance with the FDEP SOPs and the TtNUS CompQAP.

4.5 WASTE HANDLING

Drill cuttings from the DPT screening survey and well installations, and water from the well development and purging and sampling will be collected and containerized in Department of Transportation approved (17-E or 17-H) 55-gallon drums. Each drum will be sealed, labeled, and transported to a drum staging area, pending IDW analytical results. For this investigation, the confirmatory soil sample analytical data will be used to characterize the soil IDW for disposal. In addition, to satisfy the requirements of Chapter 62 713, FAC, one discrete and one composite soil sample will be collected from the drums of soil IDW. Table 4-1 lists and describes the sample requirements for the soil IDW samples. Groundwater analytical results from the mobile and fixed-based laboratories will be used for aqueous IDW disposal. The method of off-site disposal will be determined by these analytical results. IDW will be transported to the IDW staging area at NAVSTA Mayport pending disposal arrangements.

A lined decontamination pad will be constructed and used to collect the water from steam cleaning of drilling equipment. Decontamination materials generated during the site investigation will be containerized for proper disposal.

4.6 SAMPLE HANDLING

Sample handling includes the selection of sample containers, preservatives, allowable holding times, and analytical methods. In addition, sample identification, packaging, and shipping will be addressed. Sample handling procedures will be in accordance with TtNUS' FDEP approved CompQAP Number 980038.

4.7 SAMPLE PACKAGING, SHIPPING, AND NOMENCLATURE

Samples will be packaged and shipped in accordance with TtNUS's CompQAP. The FOL will be responsible for completing the following forms when samples are collected for shipping:

- Sample labels
- Chain-of-Custody labels
- Appropriate labels applied to shipping coolers
- Chain-of Custody Forms
- Federal Express Air Bills

Each sample will be assigned a unique sample identification number. The unique label system established for this sampling event is as follows:

1	**2**	**3**	**4**
General Site Name	**Facility Number**	**Sample Identifier**	**Sequence Number**

Where:

1	General Site Name	MPT
2	Facility Number	283
3	Sample Identifier	DPT groundwater location number; monitoring well identification number; and, soil boring identification number
4	Sequence number	See below

TtNUS personnel will assign identification numbers to DPT locations, specifically for groundwater samples (e.g., DP01, etc.). They will also assign identification numbers to monitoring wells (e.g., 1S for first shallow well, 2S for second shallow well, 1I for intermediate well, etc.). Soil borings associated with this effort will begin at SB01 and continue numbering in a consecutive fashion (e.g., SB02, SB03, etc.).

For soil samples, the sequence number will be representative of the lower depth of the soil sample (e.g., a soil sample collected from the 1- to 3-ft interval of a soil boring will have a sequence number of 3, a sample from the 3- to 5-ft interval will have a sequence number of 5). For groundwater samples collected with the DPT equipment, the sequence number will be representative of the lower depth of the groundwater sample (e.g., a groundwater sample collected from the 6- to 10-ft interval would have a sequence number of 10). Groundwater samples collected from permanent monitoring wells will have a sequence number beginning at 01 and continuing consecutively, based on the sampling round. This assumes that if permanent wells are located during the screening effort, the samples collected for field

screening will have a sequence number 01 and the samples collected during the second phase of this investigation will have the sequence number 02.

For example, a groundwater sample collected from shallow monitoring well number eight at the site during the first groundwater sampling round would have the following nomenclature:

MPT-283-MW8S-01

A soil sample collected from the 3- to 5-ft interval at boring SB02 would have the following nomenclature:

MPT-283-SB02-05

4.8 SAMPLE CUSTODY

The chain-of-custody begins with the release of the empty sample bottles from the laboratory and must be documented and maintained from that point forward. To maintain custody of the sample bottles or samples, they must be in someone's physical possession, in a locked room or vehicle, or sealed with an intact custody seal. When the possession of the bottles or samples is transferred from one person to another it will be documented in the field logbook and on the chain-of-custody.

4.9 QUALITY CONTROL (QC) SAMPLES

In addition to periodic calibration of field equipment and appropriate documentation on a field calibration sheet (Appendix B), quality control (QC) samples will be collected or generated during environmental sampling activities. QC samples will be collected in accordance with the requirements established during the Plan of Action negotiations.

Trip Blanks – Trip Blank(s) are required if the samples will be analyzed for volatile organic compounds (VOCs). Trip Blanks are prepared by the laboratory providing the VOC vials and are prepared by filling the preserved vials with analyte-free water. Trip Blank frequency is given is Table 4-2.

Equipment Blanks – Equipment blanks are required for sampling equipment used during the investigation. At least one blank is required for each water and solid matrix. Equipment blank frequency is provided in Table 4-2.

Field Duplicate - Field duplicates are samples collected independently at a sample location during a single act of sampling under representative field conditions. Field duplicate sample frequencies are provided in

Table 4-2. The duplicates shall be analyzed for the same parameters in the laboratory as indicated in Table 4-1.

Matrix Spike (MS) – At least one sample in a sample set (or 5 percent, whichever is greater) with similar matrices shall be prepared and analyzed by the specified method. If a set contains samples of different matrices, MSs should be prepared and analyzed for each matrix type.

Matrix Spike Duplicate (MSD) – At least one sample or 5 percent of all sample in a sample sets with a similar matrix shall be selected and analyzed in duplicate. If a sample set contains samples of different matrices, (e.g., effluent and drinking water), the duplicates or MSDs should be analyzed for each matrix.

TABLE 4-2
QUALITY CONTROL SAMPLE FREQUENCY

Contamination Assessment Plan
Tank Site 283
Naval Station Mayport
Mayport, Florida

Number of Samples	Trip Blank (VOC)	Equipment Blank	Duplicate
10+	One per cooler	Minimum of 1 then 5%	Minimum of one then 10%
5-9	NR	One *	One
less than 5	NR	One *	NR

NR = Not required
* Note: For 9 or fewer samples, pre-cleaned equipment blank or a field cleaned equipment blank is required. Field-cleaned equipment blank must be collected if equipment is cleaned in the field.

4.10 SITE MANAGEMENT AND BASE SUPPORT

TtNUS will perform this project with support from the Navy. This section of the CAP describes the project contacts, support personnel, project milestones, and time frames of all major events.

Throughout the duration of the investigation activities, work at NAVSTA Mayport will be coordinated through SOUTHNAVFACENGCOM, FDEP, and NAVSTA Mayport personnel. The primary contacts are as follows:

1. SOUTHNAVFACENGCOM Engineer in Charge
   Ms. Beverly Washington
   (843) 820-5581

2. FDEP
Mr. Jim Cason
(850) 921-4230

3. NAVSTA Mayport Facilities
Mr. Scott Dombrosky
Public Works Center Jacksonville
NAS Jacksonville
(904) 542-3991 Ext. 322

NAVSTA Mayport personnel will provide the following support functions:

- Assist TtNUS in locating underground utilities prior to the commencement of drilling operations.
- Provide existing engineering plans, drawings, diagrams, files, etc. to facilitate evaluation of the sites under investigation.
- Provide all historical data, background geological and hydrogeological information, and initial site investigation documents.

NAVSTA Mayport personnel will aid in arranging the following:

- Personnel identification badges, vehicle passes, and/or entry permits.
- A secure staging area (approximately 2,000 square ft) for storing equipment and supplies.
- A supply (e.g., fire hydrant, stand pipe, etc.) of large quantities of potable water for equipment cleaning, sampling, etc.
- As required, provide escorts for contract personnel working in secured areas.

The project will be staffed with personnel from the TtNUS' Jacksonville, Florida office. During field activities, TtNUS will provide an FOL, who is familiar with the scope of work to be completed and requirements of working at NAVSTA Mayport. Additionally, TtNUS will supply one DPT rig with mobile laboratory, one hollow stem drill rig, and a TtNUS field crew to supervise drilling activities and sample the groundwater monitoring wells.

Mr. Mark Peterson, is the Task Order Manager (TOM) for CTO 0230 and will be the primary point of contact for the base and the FOL. He is responsible for cost and schedule control as well as technical performance. Mr. Peterson will provide senior level review and oversight during field activities.

4.10.1 Contingency Plan

In the event of problems that may be encountered during site activities, the SOUTHNAVFACENGCOM point of contact will be notified immediately, followed by the TtNUS TOM and the NAVSTA Mayport point of contact. The TOM will determine a course of action designed not to interfere with the schedule or budget. All contingency plans will be approved through the SOUTHNAVFACENGCOM point of contact before being enacted.

5.0 PROPOSED LABORATORY ANALYSIS

During the field-screening portion of this assessment, a mobile laboratory will analyze soil and groundwater samples for BTEX, MTBE, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

A fixed-based laboratory will be used to analyze soil and groundwater samples for constituents identified in Chapter 62-770.600(4), FAC and Table 4-1. Soil samples will be analyzed for the COCs of the GAG and KAG, which include BTEX and MTBE, 1-methylnaphthalene, 2-methylnaphthalene and the 16 method-listed PAHs included in Table A of 62-770, FAC, and TRPH. Groundwater samples from the monitoring wells will be analyzed for parameters in the GAG and KAG in accordance with Chapter 62-770.600(2), FAC. COCs included in these groups are BTEX and MTBE, 1-methylnaphthalene, 2-methylnaphthalene and the 16 method listed PAHs included in Table A of 62-770, FAC, 1,2-EDC and the other PPVOHs, total lead, EDB, and TRPH.

To comply with Chapter 62-713, FAC, a fixed-based laboratory will analyze additional soil IDW samples for VOHs and total metals (arsenic, cadmium, chromium, and lead). This data, combined with the soil confirmatory data will be used to characterize the soil IDW for proper disposal.

6.0 PROPOSED SCHEDULE

Field activities, including DPT soil and groundwater screening, monitoring well installation and development, sampling, surveying, aquifer testing, and IDW management at Tank Site 283 are proposed to begin in June 2002 and take approximately nine months to complete. The following is the anticipated schedule for activities associated with this investigation:

- Utility Clearances 1 week
- DPT and Mobile Lab Mobilization 1 day
- DPT and Mobile Lab Investigation 3 days
- Driller Coordination and Mobilization 2 days
- Monitoring Well Installation and Development 5 days
- Monitoring Well Sampling 2 days
- Monitoring Well Re-sampling (if needed) 2 days
- Off-site Laboratory Analyses 30 days
- IDW Management/Disposal 2 days

It is currently anticipated that tasks for this project will be completed with limited delays occurring during transition between tasks. However, delays during task transition are possible.

Assuming that nothing unusual is found during this scope of work, once the fieldwork is complete and the laboratory analytical data is received and processed, the SAR will be prepared.

REFERENCES

Hydro Terra Environmental Services, Inc. (Hydro Terra), 1993. Underground Storage Tank Closure Assessment Report of Building No. 283 Site Mayport Naval Base Mayport, Florida. United States Naval Station, Mayport, Florida, Engineering Department. January.

TtNUS (Tetra Tech NUS, Inc.), 1999. Comprehensive Quality Assurance Plan, Florida Department of Environmental Protection Comprehensive Quality Assurance Plan No. 980038, Revision 1. August.

APPENDIX A

DISCHARGE NOTIFICATION LETTER

12/29

Cheryl FYI

5090
Ser N4E/5452
31 Dec 92

Water Quality Division
Regulatory & Environmental Services
City of Jacksonville
421 West Church Street, Suite 412
Jacksonville, FL 32202-4111

Subj: DISCHARGE NOTIFICATION
FDER FACILITY 168626008

Gentlemen:

The enclosed Discharge Reporting Form is submitted for petroleum contamination discovered during removal of a 2,000 gallon underground diesel tank located at Building 283, Potable Water Treatment Plant. This site will be included in the Petroleum Contamination Agreement of October 1990, and a contamination assessment report and a remedial action plan will be performed.

If you have any questions, please contact Ms. Cheryl Mitchell or Mr. Michael Davenport, N4E, at 904-270-6730.

Sincerely,

CHRIS A. TAYLOR
Commander, CEC, U.S. Navy
Staff Civil Engineer
By direction of the
Commanding Officer

Encl:
(1) FDER Form 17-761.900(1)

Copy to:
SOUTHNAVFACENGCOM (Code 18237)
FDER Tallahassee (Mr. Eric Nuzie)

bc: N4E Chron

c:\wpdocs\DischNot.283/pl/12-23

APPENDIX B

FIELD FORMS

Tetra Tech NUS, Inc.

DAILY ACTIVITIES RECORD

PROJECT NAME:	Tank Site 283	**PROJECT NUMBER:**	N4195
CLIENT:	U.S. NAVY	**LOCATION:**	NAVSTA Mayport
DATE:		**ARRIVAL TIME:**	
Tt NUS PERSONNEL:		**DEPARTURE TIME:**	
CONTRACTOR:		**DRILLER:**	

ITEM	QUANTITY ESTIMATE	QUANTITY TODAY	PREVIOUS TOTAL QUANTITY	CUMULATIVE QUANTITY TO DATE

LOCATION	FOOTAGE			

COMMENTS:

APPROVED BY:

Tt NUS REPRESENTATIVE

DRILLER

DATE:

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NAVSTA Mayport
PROJECT NUMBER: N4195
DRILLING COMPANY:
DRILLING RIG:

BORING NUMBER:
DATE:
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAVSTA Mayport, Tank Site 283
Project No.: N4195

[] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.:
Sample Location:
Sampled By:
C.O.C. No.:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: / Time: / Method: / Monitor Reading (ppm):	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)

COMPOSITE SAMPLE DATA:

Date: / Method: / Monitor Readings (Range in ppm):	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
NA				
NA				
NA				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

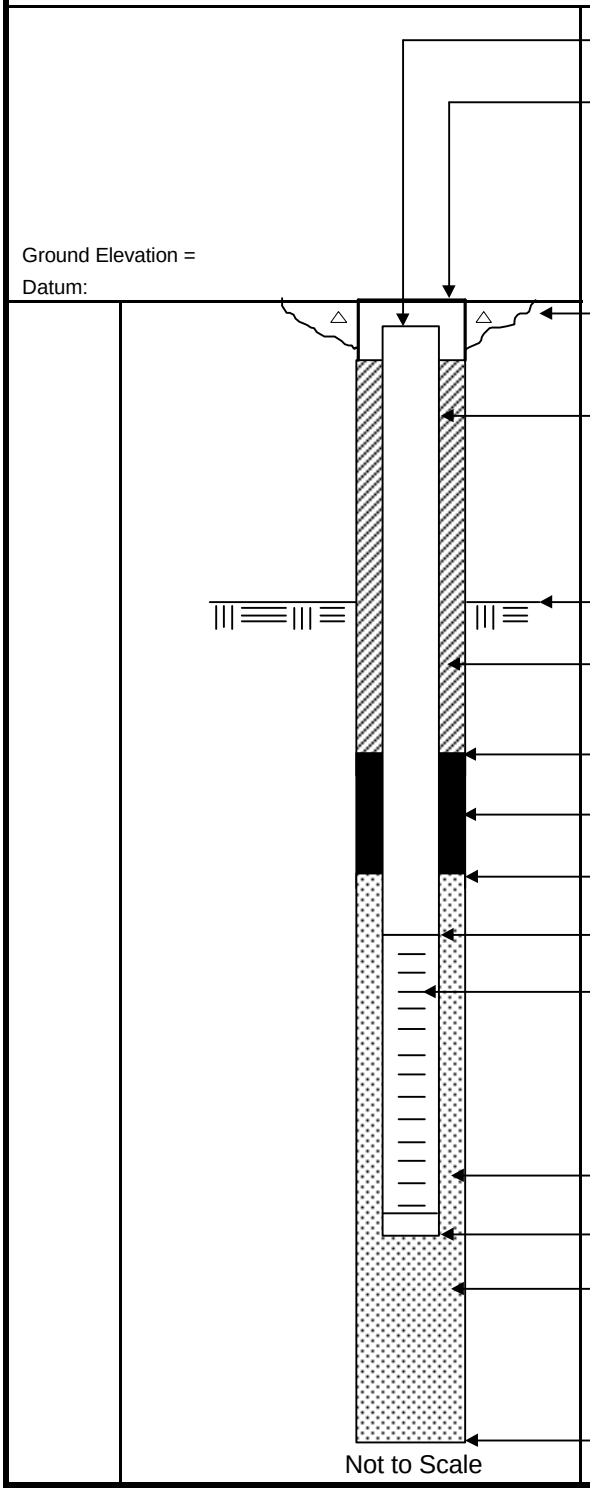
Signature(s):

Tetra Tech NUS, Inc.

WELL No.: _____

MONITORING WELL SHEET

PROJECT:	NAVSTA Mayport	DRILLING Co.:		BORING No.:	
PROJECT No.:	N4195	DRILLER:		DATE COMPLETED:	
SITE:	Tank Site 283	DRILLING METHOD:		NORTHING:	
GEOLOGIST:		DEV. METHOD:		EASTING:	



Elevation / Depth of Top of Riser: /

Elevation / Height of Top of Surface Casing: /

I.D. of Surface Casing: _____

Type of Surface Casing: Steel

Type of Surface Seal: _____

I.D. of Riser: _____

Type of Riser: PVC

Borehole Diameter: _____

Elevation / Depth Top of Rock: /

Type of Backfill: _____

Elevation / Depth of Seal: /

Type of Seal: 30/65 Sand

Elevation / Depth of Top of Filter Pack: /

Elevation / Depth of Top of Screen: /

Type of Screen: PVC

Slot Size x Length: _____

I.D. of Screen: _____

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: /

Elevation / Depth of Bottom of Filter Pack: /

Type of Backfill Below Well: _____

Elevation / Total Depth of Borehole: /

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: _____ Depth to Bottom (ft.): _____ Responsible Personnel: _____
Site: _____ Static Water Level Before (ft.): _____ Drilling Co.: _____
Date Installed: _____ Static Water Level After (ft.): _____ Project Name: NAVSTA Mayport
Date Developed: _____ Screen Length (ft.): _____ Project Number: N4195
Dev. Method: _____ Specific Capacity: _____
Pump Type: _____ Casing ID (in.): _____

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH (S.U.)	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Tank Site 283 **Project No.:** N4195

Location: NAVSTA Mayport **Personnel:**

Weather Conditions: **Measuring Device:**

Tidally Influenced: Yes __X__ No ___ **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

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: ***NAVSTA Mayport/ Tank Site 283***
Project No.: ***N4195***

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

Sample ID No.:
Sample Location:
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: / Time:	Visual	Standard	mS/cm	°C	NTU	mg/l	%	
Method: Low Flow Peristaltic								

PURGE DATA

Date:	**SEE LOW FLOW PURGE DATA SHEET**
Method: Low Flow Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter:	
Well Casing Material:	
Total Well Depth (TD):	
Static Water Level (WL):	
One Casing Volume(gal/L):	
Start Purge (hrs):	
End Purge (hrs):	
Total Purge Time (min):	
Total Vol. Purged (gal/L):	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected

OBSERVATIONS / NOTES

Laboratory:

phone:
fax:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: *NAVSTA Mayport/ Tank Site 283* **WELL ID.:** _____

PROJECT NUMBER: N4195 **DATE:** _____

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	Comments

SIGNATURE(S): _____

Tetra Tech NUS, Inc.

DOCUMENTATION OF FIELD CALIBRATION

PROJECT NAME : NAVSTA Mayport

SITE NAME: Tank Site 283

PROJECT No.: N4195

INSTRUMENT NAME/MODEL: ____________________

MANUFACTURER: ____________________

SERIAL NUMBER: ____________________

Date of Calibration	Instrument Name and Model	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		

-