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FINAL CORRECTIVE MEASURES STUDY/SITE REHABILITATION COMPLETION REPORT REVISION 2 FOR SOLID WASTE MANAGEMENT UNITS 18, 20, 21 AND 52 NS MAYPORT FL

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TETRA TECH

Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62467-04-D-0055

Rev. 2
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Correctives Measures Study/Site Rehabilitation Completion Report

Solid Waste Management Units 18, 20, 21, and 52

Naval Station Mayport
Jacksonville, Florida

Contract Task Order 0033

January 2014

NAVFAC
Naval Facilities Engineering Command
NAVFAC SOUTHEAST

NAS Jacksonville
Jacksonville, Florida 32212-0030

TETRA TECH

CORRECTIVE MEASURES STUDY/SITE REHABILITATION COMPLETION REPORT FOR SOLID WASTE MANAGEMENT UNITS 18, 20, 21, AND 52

NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command
Southeast
NAS Jacksonville
Jacksonville, Florida 32212-0030

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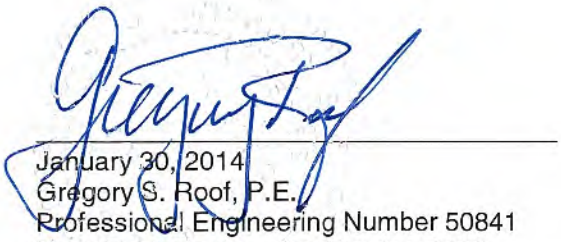
The professions opinions rendered in this decision document identified as the *Corrective Measures Study/Site Rehabilitation Completion Report, Revision 2, for Solid Waste Management Units 18, 20, 21, and 52, Naval Station Mayport, Jacksonville, Florida*, dated January 30, 2014, were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. This document was prepared under the supervision of the signing engineer and is based in part on information obtained from others. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this document.



January 30, 2014
Gregory S. Roof, P.E.
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FOREWORD

To meet its mission objectives, the United States Navy performs a variety of operations, some requiring the use, handling, storage, or disposal of hazardous materials. Through accidental spills and leaks and conventional methods of past disposal, hazardous materials may have entered the environment in ways unacceptable by today's standards. With growing knowledge of the long-term effects of hazardous materials on the environment, the Department of Defense initiated various programs to investigate and remediate conditions related to suspect past releases of hazardous materials at their facilities.

One of these programs is the Installation Restoration (IR) Program. This program complies with the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act. The acts, passed by Congress in 1980 and 1986, respectively, established the means to assess and clean up hazardous waste sites for both private-sector and federal facilities. These acts are the basis for what is commonly known as the Superfund program.

Originally, the Navy's part of this program was called the Navy Assessment and Control of Installation Pollutants (NACIP) Program. Early reports reflect the NACIP process and terminology. The Navy eventually adapted the program structure and terminology of the standard IR Program.

A second program to address present hazardous material management is the Resource Conservation and Recovery Act (RCRA) Corrective Action Program. This program is designed to identify and clean up releases of hazardous substances at RCRA-permitted facilities. RCRA ensures that solid and hazardous wastes are managed in an environmentally sound manner. The law applies primarily to facilities that generate or handle hazardous waste.

The RCRA program is conducted in the following three stages:

- The RCRA Facility Assessment identifies Solid Waste Management Units, evaluates the potential for releases of contaminants, and determines the need for future investigations.

- The RCRA Facility Investigation then determines the nature, extent, and fate of contaminant releases.

- The Corrective Measures Study identifies and recommends measures to correct the release.

The hazardous waste investigations at Naval Station (NAVSTA) Mayport are presently being conducted under the RCRA Corrective Action Program. Earlier preliminary investigations had been conducted at NAVSTA Mayport under the Navy's NACIP Program and IR Program following Superfund guidelines. In

1988, in coordination with the United States Environmental Protection Agency (USEPA) and the Florida Department of Environmental Regulation, now known as the Florida Department of Environmental Protection (FDEP), the hazardous waste investigations were formalized under the RCRA Program.

NAVSTA Mayport is conducting the cleanup at their facility by working through the Naval Facilities Engineering Command Southeast. The USEPA and the FDEP oversee the Navy environmental program. All aspects of the program are conducted in compliance with state and federal regulations, as ensured by the participation of these regulatory agencies.

Questions regarding the RCRA Program at NAVSTA Mayport should be addressed to Ms. Cheryl Mitchell (Code N4E) (904) 270-6070.

TABLE OF CONTENTS

TABLES

NUMBER **PAGE**

FIGURES

NUMBER **PAGE**

ACRONYMS AND ABBREVIATIONS

ABB-ES	ABB Environmental Services, Inc.
AOC	Area of Concern
bgs	below ground surface
BSV	Background Screening Value
CAMP	Corrective Action Management Plan
CAO	Corrective Action Objective
CAS	Chemical Abstract Service
CMS	Corrective Measures Study
COC	contaminant of concern
COI	contaminant of interest
COPC	contaminant of potential concern
CTL	Cleanup Target Level
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FFTA	Firefighting Training Area
FTC	Fleet Training Center
GCTL	Groundwater Cleanup Target Level
GIR	General Information Report
HSWA	Hazardous and Solid Waste Amendment
IR	Installation Restoration
µg/kg	microgram per kilogram
µg/L	microgram per liter
MCO	Media Cleanup Objective
mg/kg	milligram per kilogram
NACIP	Navy Assessment and Control of Installation Pollutants
NAVSTA	Naval Station
NFA	No Further Action
Partnering Team	NAVSTA Mayport Installation Restoration Partnering Team
PCB	polychlorinated biphenyl
PWD	Public Works Department
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation

ACRONYMS AND ABBREVIATIONS (CONTINUED)

SCTL	Soil Cleanup Target Level
SRCO	Site Rehabilitation Completion Order
SRCR	Site Rehabilitation Completion Request
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TPH	total petroleum hydrocarbon
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
VSI	Visual Site Inspection

EXECUTIVE SUMMARY

This Corrective Measures Study (CMS)/Site Rehabilitation Completion Report (SRCR) was prepared for Solid Waste Management Units (SWMUs) 18, 20, 21, and 52 at Naval Station (NAVSTA) Mayport in Jacksonville, Florida, by the Naval Facilities Engineering Command Southeast pursuant to the Resource Conservation and Recovery Act (RCRA). This CMS/SRCR was conducted in accordance with the Hazardous and Solid Waste Amendments (HSWA) permit FL9 170 024 260, issued by the Florida Department of Environmental Protection (FDEP) on March 25, 1988, and revised and reissued on August 17, 2009. The HSWA/RCRA Program is designed to identify and clean up releases of hazardous substances at RCRA-permitted facilities. RCRA ensures that solid and hazardous wastes are managed in an environmentally sound manner. The law applies primarily to facilities that generate or handle hazardous waste.

The RCRA Program is conducted in the following three stages:

1. The RCRA Facility Assessment (RFA) identifies SWMUs, evaluates the potential for releases of contaminants, and determines the need for future investigations.
2. The RCRA Facility Investigation (RFI) then determines the nature, extent, and fate of contaminant releases.
3. The CMS identifies and recommends measures to correct the releases.

The RFA Report for SWMUs 20, 21, and 52 was issued in August 1997. The RFI Report for SWMU 18 was issued in December 1996. This report presents the results of the CMS/SRCR, including the following:

- Selection of contaminants of concern (COCs) using the recently approved regulation Chapter 62-777, Florida Administrative Code (F.A.C.).
- Determination of areas and volumes of impacted media exceeding the state of Florida 62-777, F.A.C., respective Cleanup Target Levels (CTLs).
- Development, screening, and evaluation of corrective measure alternatives.
- Recommendation of corrective action to address contaminated media.

This CMS/SRCR contains the results of the identification, screening, and evaluation of corrective measure alternatives for all media at the following sites:

- SWMU 18, Fleet Training Center (FTC) Diesel Generator Sump
- SWMUs 20 and 21, Hobby Shop Drain and Hobby Shop Scrap Storage Area

- SWMU 52, Public Works Department (PWD) Service Station Storage Area

Though limited data was obtained during the RFI, it was collected based upon an appropriate sampling rationale at the time. In addition, assessments of the current boundaries and conditions at SWMUs 18, 20, 21, and 52 were made and it was deemed appropriate to use the data collected during the RFI for the CMS evaluation because it was still representative of the SWMUs today.

SWMU 18 – Fleet Training Center Diesel Generator Sump

SWMU 18, the FTC Diesel Generator Sump Area, is located at the Firefighting Training Area, which is part of the FTC due south of the St. Johns River, approximately 1,000 feet west of the Atlantic Ocean in the northeastern portion of NAVSTA Mayport.

SWMU 18 consists of a concrete containment structure in which a diesel generator is located. The generator has been at this location since approximately 1982. The concrete sump is approximately 5 feet wide by 10 feet long with 6-inch high sides.

A SWMU boundary evaluation was performed at SWMU 18 in response to a November 2004 NAVSTA Mayport Installation Restoration Partnering Team (Partnering Team) meeting. As a result of the SWMU boundary evaluation and soil analysis, it was decided that the original boundary of SWMU 18 evaluated during the RFI was incorrect.

Originally, samples were collected in the former SWMU 18 boundary because it was believed that activities associated with SWMU 18 extended throughout the larger boundary. Based upon the November 2004 evaluation, however, it was concluded that the area immediately surrounding SWMU 18 did not contain any detections believed to have been associated with activities in the generator sump area exceeding FDEP Residential Direct Exposure Soil Cleanup Target Levels or FDEP Groundwater Cleanup Target Levels (GCTLs). Therefore, the boundary of SWMU 18 was reduced to the generator sump pump area. The discussion of the revised boundary for SWMU 18 is documented in the January 2005 Partnering Team meeting minutes included in Appendix A.

As a result of the revised SWMU 18 boundary, a smaller number of soil and groundwater samples, which specifically related to SWMU activities, were considered for this CMS. Due to the relatively small size of the SWMU, 50 square feet, and the fact that full delineation of the media surrounding SWMU 18 had been performed, it was considered reasonable to limit the data set to only include these locations.

Surface Soil

No surface soil COCs identified for SWMU 18 exceeded residential or industrial Cleanup Target Levels. Therefore, No Further Action (NFA) is recommended for surface soil at SWMU 18.

Groundwater

No groundwater COCs were identified for SWMU 18. Therefore, NFA is recommended for the groundwater at SWMU 18.

Request for Site Rehabilitation Completion Order (SRCO)

SWMU 18 meets the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport Background Screening Values (BSVs) are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMU 18.

SWMUs 20 and 21 – Hobby Shop Drain and the Hobby Shop Scrap Storage Area

SWMUs 20 and 21, the Hobby Shop Drain and the Hobby Shop Scrap Storage Area, respectively, are located adjacent to Building 414 in the southeastern portion of NAVSTA Mayport near the Mayport Turning Basin. The facility contained scrap metal, engine parts, open gas cylinders and a Freon 22™ container, an automotive battery, old appliances, and other scrap metal items that were ultimately collected by the Defense Reutilization and Marketing Office for resale. The Hobby Shop Drain was located on the soil adjacent to a sloped concrete apron leading from the raised concrete floor of Building 1965 to the concrete storm swale in front of the building. The Hobby Shop Scrap Storage Area, approximately 20 square feet, was located adjacent to the southern side of the eastern wing of Building 414, and surrounded by fencing with an entrance gate on the southern side.

In 1991, the Hobby Shop area underwent renovations, which included construction of a new Building 1965, installation of a new drain system (connected to an oil-water separator) to intercept discharge from the garage bays and surrounding parking lot, and new concrete pavement across the entire site. On May 5, 1994, ABB Environmental Services, Inc. (ABB-ES) conducted a site visit at SWMUs 20 and 21 and reported that the conditions (i.e., stained soils and oily engine parts) described during the 1989 RFA-Visual Site Inspection (VSI) were no longer applicable. A small waste oil storage area and a new scrap storage area were observed near the Hobby Shop. A valved drainpipe located at the waste oil storage area drained to an adjacent grassy area. The drain was used to remove accumulated rainwater from within the curbed area. No oily scrap materials and no other signs of a release were observed.

Limited confirmatory sampling was conducted by ABB-ES in May of 1995 at SWMUs 20 and 21 as part of the RFA-VSI. Field activities included the collection of eight surface and six subsurface soil samples and the installation and sampling of six shallow groundwater monitoring wells.

Surface Soil

No surface soil COCs were identified for SWMUs 20 and 21 under either an industrial or residential direct exposure scenario. Therefore, No Action is recommended for surface soil at SWMUs 20 and 21.

Subsurface Soil

No subsurface soil COCs were identified for SWMUs 20 and 21 under either an industrial or residential direct exposure scenario. Therefore, NFA is recommended for subsurface soil at SWMUs 20 and 21.

Groundwater

The groundwater sample result for manganese exceeded the FDEP GCTL; however, it did not exceed the approved NAVSTA Mayport BSV and is not considered a COC. No groundwater COCs were identified for SWMUs 20 and 21; therefore, NFA is recommended for the groundwater at SWMUs 20 and 21.

Request for SRCO

SWMUs 20 and 21 meet the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport BSVs are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMUs 20 and 21.

SWMU 52 – Public Works Department Service Station Storage Area

SWMU 52, the PWD Service Station Storage Area, is located at Building 25 near the central portion of NAVSTA Mayport near the Mayport Turning Basin. The PWD Service Station Storage Area is located on and adjacent to a concrete slab that is 30 feet long by 20 feet wide and is situated along the northeastern wall of Building 25. There is a drain in the concrete slab that discharges to a nearby oil-water separator.

During the site visit by ABB-ES personnel on May 5, 1994, the site generally appeared as described in the 1989 RFA. No drums were present on the pad and in place of the bowser, however, there was a small above ground tank (approximately 250 gallons) within a metal containment tub. No staining of the pavement was observed in the area of the tank. A small pipe extended from the building wall above the concrete pad. The pipe discharged condensate water from an air compressor in the building. The condensate water would ultimately get discharged into the drain and would get processed through the oil-water separator. The oil in the separator was periodically collected for recycling, and water from the effluent discharged into the sanitary sewer system.

Limited confirmatory sampling was conducted by ABB-ES in May of 1995 at SWMU 52 as part of the RFA-VSI. Field activities included the collection of one surface and one subsurface soil sample and the installation and sampling of one shallow groundwater monitoring well. The total area of SWMU 52 is only 0.016 acre. No additional sampling was conducted due to the relatively small size of the SWMU.

Surface Soil

No surface soil COCs were identified for SWMU 52 under either an industrial or residential exposure scenario. Therefore, No Action is recommended for surface soil at SWMU 52.

Subsurface Soil

No subsurface soil COCs were identified for SWMU 52 under either an industrial or residential exposure scenario. Therefore, No Action is recommended for subsurface soil at SWMU 52.

Groundwater

No groundwater COCs were identified for SWMU 52. Therefore, No Action is recommended for the groundwater at SWMU 52.

Request for SRCO

SWMU 52 meets the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport BSVs are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMU 52.

1.0 INTRODUCTION

This Corrective Measures Study (CMS)/Site Rehabilitation Completion Report (SRCR) was prepared for Solid Waste Management Units (SWMUs) 18, 20, 21, and 52 at Naval Station (NAVSTA) Mayport, in Jacksonville, Florida, by the United States Navy pursuant to the Resource Conservation and Recovery Act (RCRA). Tetra Tech, Inc. was contracted by Naval Facilities Engineering Command Southeast to complete a CMS/SRCR under the Comprehensive Long-term Environmental Action Navy Contract Number N62467-04-D-0055. This report presents the results of the CMS/SRCR, including the following:

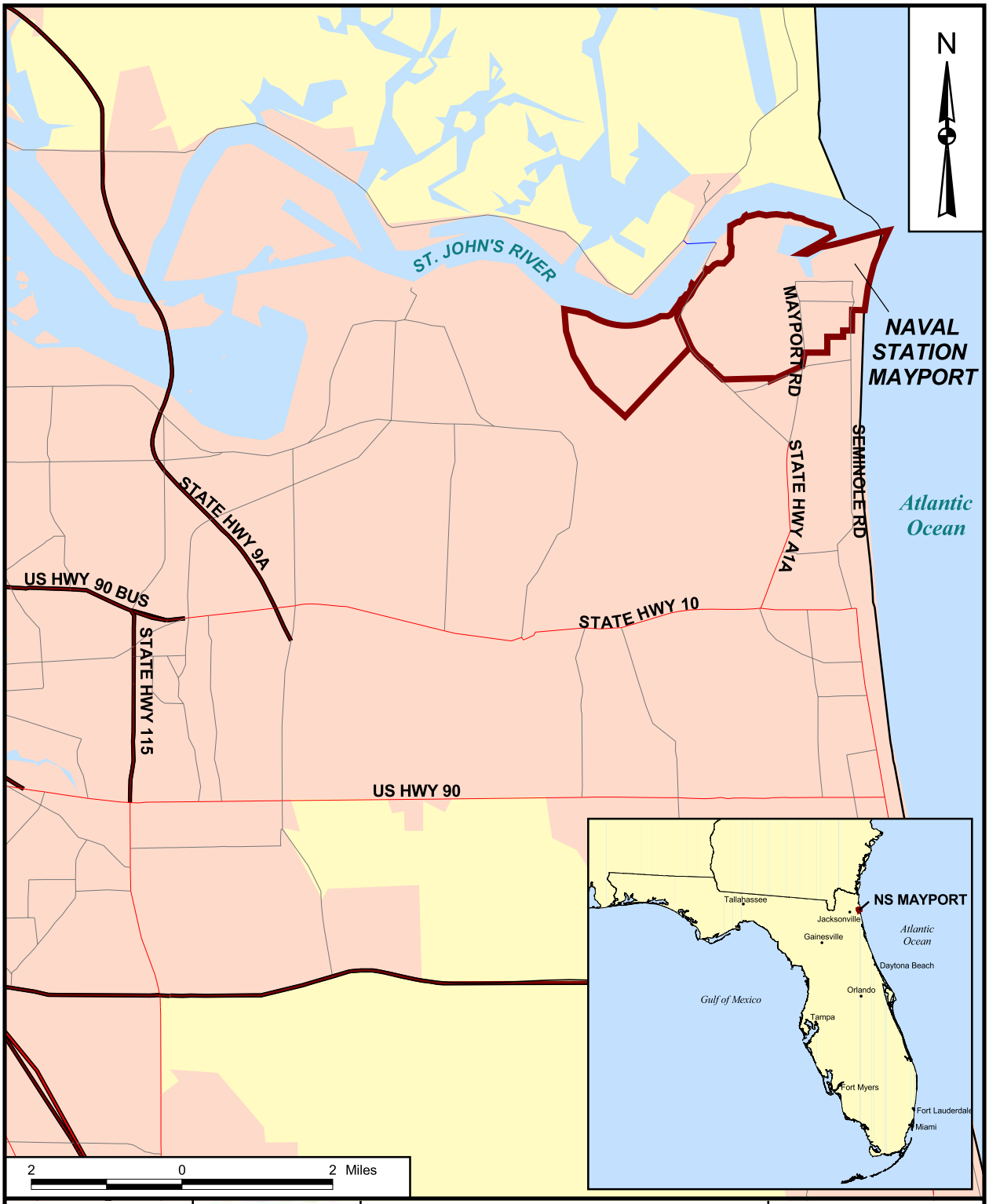
- Selection of contaminants of concern (COCs).
- Determination of areas of impacted media exceeding levels in Chapter 62-777, Florida Administrative Code (F.A.C.).
- Development, screening, and evaluation of corrective measure alternatives.
- Recommendation of corrective action as necessary to address contaminated media at SWMUs 18, 20, 21, and 52.

1.1 FACILITY DESCRIPTION

NAVSTA Mayport is located near the town of Mayport within the city limits of Jacksonville, Florida, in northeastern Duval County on the southern shore of the confluence of the St. Johns River and the Atlantic Ocean (see Figure 1-1). A SWMU location map is provided as Figure 1-2.

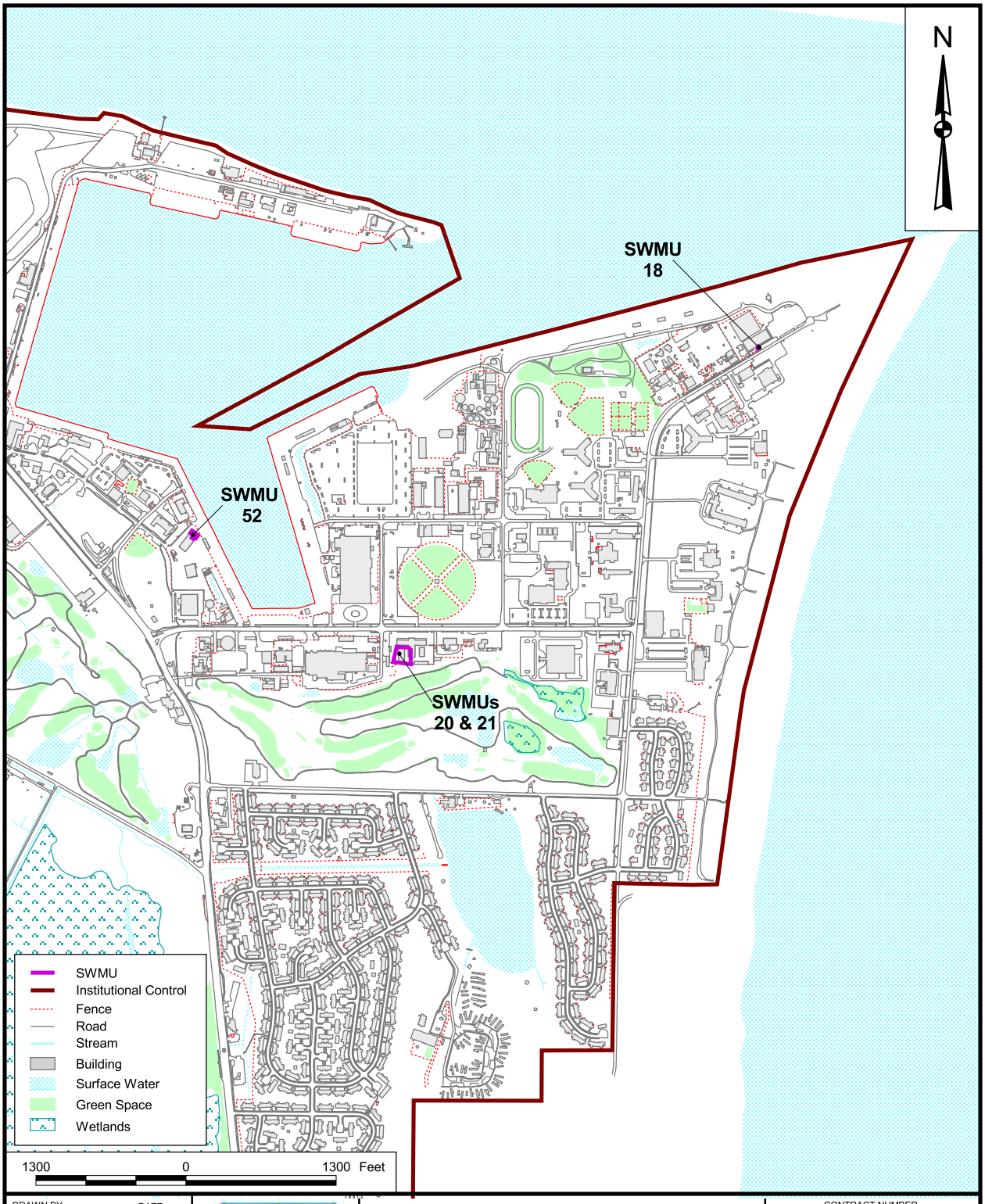
A RCRA Facility Assessment (RFA)-Visual Site Inspection (VSI) for NAVSTA Mayport was conducted for the United States Environmental Protection Agency (USEPA) Region 4 in 1989 (Kearny, 1989). The RFA-VSI identified 56 SWMUs and 2 Areas of Concern (AOCs) at NAVSTA Mayport. These SWMUs and AOCs were included in the Hazardous and Solid Waste Amendment (HSWA) permit. Fifteen of these SWMUs were determined to require No Further Action (NFA). Twenty-three of the remaining SWMUs and the two AOCs were determined to require further investigation by conducting RFA sampling visits, referred to in the current HSWA permit as confirmatory sampling. The remaining 18 SWMUs (including SWMUs 18, 20, 21, and 52) were determined to require a RCRA Facility Investigation (RFI).

Due to the number of SWMUs, the diversity of their past and present operations, and the magnitude of the permit requirements, the USEPA recommended that a phased approach be used to implement the RFI and other corrective action activities at NAVSTA Mayport. A Corrective Action Management Plan (CAMP) was prepared in response to the USEPA recommendation and describes the strategy used to implement the RCRA corrective action program at NAVSTA Mayport (ABB Environmental Services, Inc. [ABB-ES], 1995b).



DRAWN BY S. PAXTON	DATE 2/28/07	FACILITY LOCATION MAP SWMUs 18, 20, 21, AND 52 CORRECTIVE MEASURE STUDY NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NUMBER CTO 0033
CHECKED BY K. WIMBLE	DATE 3/29/07		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1 - 1 REV 0

P:\GIS\MAYPORT_NS\MAPDOCS\APR\STATEMENT_BASIS.APR SITE LOCATION LAYOUT WITH TITLE BLOCK 3/29/07 SP



DRAWN BY S. STROZ	DATE 9/20/06	SITE VICINITY MAP SWMUs 18, 20, 21, AND 52 NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NUMBER CTO 0033
CHECKED BY S. BALLARD	DATE 12/08/06		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. / REV 0

P:\GIS\MAYPORT_NS\APR\2868.APR REVISED SITE VINCINITY LAYOUT 12/08/06 SS

The corrective action program at NAVSTA Mayport described in the CAMP invoked a phased approach to assure collection of adequate site characterization data to support the selection of effective corrective measures. The structure of the corrective action program at NAVSTA Mayport is based on the establishment of four SWMU groups (Groups I, II, III, and IV) based on the past use of the SWMU. The corrective action activities at each SWMU group are being implemented in phases.

This CMS/SRCR is for SWMUs 18, 20, 21, and 52 at NAVSTA Mayport, which belong to Group III. The RFA Report for SWMUs 20, 21, and 52 and the RFI Report for Group III SWMUs (ABB-ES, 1997 and 1996b, respectively) contain pertinent information about the site background, environmental setting, nature and extent of contamination, COCs, and the results of remedial measures that have reduced or eliminated risks or exposure pathways between certain media and potential receptors for SWMUs 18, 20, 21, and 52.

The information presented in this CMS/SRCR has been gathered from all of the aforementioned reports to describe the current conditions of each SWMU presented in Sections 2.0 through 4.0 of this document.

1.2 ORGANIZATION OF THIS REPORT

This CMS/SRCR consists of four sections that describe SWMUs 18, 20, 21, and 52, summarize the RFI findings pertinent to conducting the CMS/SRCR, identify the contaminants and media that exceed Cleanup Target Levels (CTLs) established by the Florida Department of Environmental Protection (FDEP), and evaluate and recommend potential corrective measures for addressing those risks. Section 1.0 includes a general facility description, identifies the primary sources of information, describes the physical and environmental setting of the SWMUs of interest, presents the general methodology used in the CMS to identify contaminants and media of concern, and presents the general methodology used to evaluate the corrective measures. Sections 2.0 through 4.0 describe the current conditions for each SWMU, present the evaluation and selection of COCs, identify and evaluate potential corrective measure alternatives, and select the recommended alternative for soil and groundwater at each SWMU. Appendix A contains the NAVSTA Mayport Installation Restoration Partnering Team (Partnering Team) meeting minutes applicable to SWMUs 18, 20, 21, and 52. Appendix B contains the CMS Data Set for SWMUs 18, 20, 21, and 52.

1.3 PHYSICAL CHARACTERISTICS OF SWMUs 18, 20, 21, AND 52

A detailed description of the physical characteristics of NAVSTA Mayport including topography, climate, soil types, and regional hydrogeology has been presented in Sections 1.0 and 3.0 of the NAVSTA Mayport General Information Report (GIR) (ABB-ES, 1995c). The following sections also provide summaries of the geologic and hydrologic data collected at the Group III SWMUs

(ABB-ES, 1996b), specifically for SWMUs 18, 20, 21, and 52 that were presented in the RFA Report (ABB-ES, 1997).

1.3.1 Soils and Geology

During construction of NAVSTA Mayport in the 1940s, dredge material from construction of the turning basin was placed on the facility to fill in low-lying areas. In the areas where SWMUs 18, 20, 21, and 52 are located, dredge material overlies undifferentiated post-Hawthorn deposits to depths of approximately 8 to 16 feet below ground surface (bgs). The thickness of the dredge material is a result of variations in the original topographic contour of the near-shore environments in which the dredge material was placed. The dredge material consists predominantly of fine-grained, well-sorted sands that may include marine shell fragments. Underlying the dredge materials are sediments that comprise the undifferentiated post-Hawthorn deposits. These sediments primarily consist of fairly uniform, well-sorted, fine-grained sand with a Unified Soil Classification System designation of "SP." However, the undifferentiated deposits ("CH" or "MH" visual classification) frequently include a very soft gray to dark gray silt clay layer that is 3 to 7 feet thick and likely represents recent estuarine deposition. This layer appears to be restricted to more landward, lower-energy depositional zones and is not found in former high-energy beach or river channel deposits. The undifferentiated post-Hawthorn deposits are likely the product of Miocene to Holocene fluvial and marine deposition and the erosion and redeposition of Hawthorn Group sediments. The top of the Upper Hawthorn deposits was estimated to be at a depth of approximately 70 to 72 feet bgs in the Group III area. Lithologically, the Hawthorn Group is quite variable and consists of calcareous, phosphatic sandy clays and clayey sands interbedded with thin discontinuous lenses of phosphatic sand, sandy limestone, limestone, and dolostone. The contact between the Hawthorn and the overlying undifferentiated Miocene and Pliocene deposits is marked by an unconformity expressed by coarse phosphatic sand and a gravel bed.

Shallow soil in the SWMU 18 area typically consists of various shades ranging from light-tan to brown, dark-gray, or black, fine-grained sand or silty sand. Minor amounts of shell material were present in some of the borings. Borings drilled for wells located along the northern perimeter of SWMU 18, nearest to the St. Johns River, revealed an increased layering of fine sands, a 6-inch clay layer, and a generally higher silt content in the soil that were not observed at locations further inland (e.g., beneath the SWMU proper). These variations were attributed to subaqueous deposition by marine process along the former shoreline of the St. Johns River.

Shallow soil in the SWMUs 20, 21, and 52 area consists of relatively uniform, light-tan to tan, brown to dark-brown, or gray, very fine to fine-grained sand and silty sand with shell fragments that may make up to approximately 20 percent of the soil sample. These sands are primarily dredge material with a minor amount of engineered fill material deposited over the last 55 years.

1.3.2 Hydrogeology

The following three primary aquifer systems are recognized beneath NAVSTA Mayport (in descending order): the surficial aquifer, the Intermediate Hawthorn Aquifer, and the Floridan Aquifer System. The surficial aquifer, which extends from near the surface to a depth of nearly 100 feet bgs at NAVSTA Mayport, is the uppermost aquifer beneath SWMUs 18, 20, 21, and 52 and is the groundwater zone considered in this CMS. It includes all of the undifferentiated post-Hawthorn deposits (see Section 1.3.1) and consists of unconsolidated sand, shell, and clay, which vary horizontally and vertically in lithology, thickness, and permeability. It is recharged primarily by precipitation at a county-wide estimated rate of 10 to 16 inches per year. Discharge in the vicinity of NAVSTA Mayport is primarily by seepage into surface water bodies and evapotranspiration. At SWMUs 18, 20, 21, and 52, the direction of groundwater flow in the surficial aquifer is toward the St. Johns River and the Mayport Turning Basin, respectively. It has also been reported that groundwater becomes brackish below a depth of 40 feet at NAVSTA Mayport.

The surficial aquifer is underlain by the Hawthorn Aquifer. The Hawthorn Aquifer consists of sand and limestone layers interbedded with clayey sand and sandy clay. It was noted in the RFI that the most productive limestone layer in the upper part of the Hawthorn Aquifer is absent in the Mayport area. Thus, the Intermediate Hawthorn Aquifer may be in hydraulic contact with the surficial aquifer at NAVSTA Mayport. Overall, the Hawthorn Group is a complex aquiclude that acts as a confining bed to the underlying Floridan Aquifer. The primary recharge mechanism for the Intermediate Hawthorn Aquifer is precipitation in areas approximately 30 miles to the west of NAVSTA Mayport where the Hawthorn Group sediments occur at shallow depths. The Floridan Aquifer consists of Eocene sediment, primarily limestone, which lies approximately 400 feet below the surface at NAVSTA Mayport. This aquifer is under artesian conditions due to the presence of the overlying Hawthorn formation and is the principal source for fresh water in the area. Because the surficial aquifer is the preferred pathway for groundwater flow and contaminant migration at NAVSTA Mayport, groundwater in the Intermediate Hawthorn Aquifer and the Floridan Aquifer were not considered in the CMS.

The hydrogeology of SWMUs 18, 20, 21, and 52 was investigated during the RFI. A station-wide tidal study was performed, water levels were measured, the potentiometric surface was mapped at different points in time, aquifer conductivity testing was conducted, and aquifer material physical properties were tested. This information was presented in the RFI Reports for the Groups III SWMUs and is summarized below for SWMUs 18, 20, 21, and 52.

SWMU 18

- Monitoring wells MW01S, MW05S, MW06S, MW10S, and MW11S, located in the vicinity of SWMU 18, were included in the tidal effects study. Groundwater level amplitudes of 0.3, 0.25, and

0.6 foot were observed at monitoring wells MW01S, MW05S, and MW06S, respectively. A time lag of approximately 10 to 12 hours relative to the tidal fluctuation was observed for all three monitoring wells. It is likely that the tidal effect on the water table zone of the surficial aquifer is limited to areas located less than about 400 feet from the St. Johns River near SWMU 18.

- The direction of groundwater flow was generally north toward the St. Johns River. Tidal influence on the direction of groundwater flow was not observed.

- Groundwater horizontal gradients in the vicinity of the SWMU ranged from 0.0008 to 0.004 foot per foot, and station-wide well pairs used to investigate vertical gradients showed a range of 0.01 to 0.05 foot per foot between the shallow and intermediate and intermediate to deep well-depth zones.

- The average values for radial hydraulic conductivity in the Group III area (which includes SWMU 18) was approximately 1.2 to 72.2 feet per day. Monitoring wells tested near SWMU 18 ranged from approximately 7.2 to 22.1 feet per day with an average of 12.2 feet per day. (No monitoring wells near SWMU 18 were screened in the intermediate or deep monitoring zones in the surficial aquifer.)

- The groundwater flow velocity was estimated to range from approximately 0.03 foot per day (10 feet per year) to 0.14 foot per day (51 feet per year).

- Testing of soil samples near SWMU 18 showed the following results: pH = 8.27 to 9.13; cation exchange capacity = less than 0.8 to 2.2 milliequivalents per 100 grams; moisture = 97 to 98 percent; and total organic carbon content = 152 to 226 milligrams per kilogram (mg/kg).

SWMUs 20 and 21

- The direction of groundwater flow was generally north toward the northwest. Tidal influence on the direction of groundwater flow was not observed.

- Groundwater horizontal gradients in the vicinity of the SWMUs appear to be relatively uniform at 0.011 foot per foot; station-wide monitoring well pairs used to investigate vertical gradients showed a range of 0.01 to 0.05 foot per foot between the shallow and intermediate and intermediate to deep well-depth zones. The values reflect a net downward gradient that suggests there is no significant artesian influence from the Floridan Aquifer system or the surficial aquifer.

- The average values for radial hydraulic conductivity in the Group III area (which includes SWMUs 20 and 21) was approximately 1.2 to 72.2 feet per day. Wells tested near SWMUs 20 and 21 ranged from approximately 2.3 to 7.8 feet per day.

- The groundwater flow velocity was estimated to range from approximately 0.07 foot per day to 0.25 foot per day.

SWMU 52

Because only one monitoring well was installed at SWMU 52, a limited amount of data was collected.

- The average values for radial hydraulic conductivity in the Group III area (which includes SWMU 52) was approximately 1.2 to 72.2 feet per day. The well tested at SWMU 52 was approximately 6.8 feet per day.

- The groundwater elevation at SWMU 52 was 3.8 feet above mean sea level.

1.3.3 Background Conditions

Background Screening Values (BSVs) for the station were originally calculated and presented in the RCRA GIR for NAVSTA Mayport (ABB-ES, 1995c). During review of the background data, it was determined that certain procedures used during the original background calculations were not consistent with regulatory guidelines. A recalculation of the BSVs was performed primarily to conform to newer regulatory guidance that includes specific mathematical treatment of non-detect concentrations in the data (Tetra Tech, 2000). The recalculation of the BSVs was reviewed by the FDEP in April 2001 and was determined acceptable for inorganics constituents (FDEP, 2001).

1.4 CORRECTIVE MEASURES STUDY METHODOLOGY

This CMS for SWMUs 18, 20, 21, and 52 uses the CMS process described in the CMS Work Plan (ABB-ES, 1995a) for NAVSTA Mayport with a minor modification to comply with Chapter 62-780, F.A.C. The purpose of the CMS is to identify, evaluate, and recommend corrective action for SWMUs that warrant such action based on the results of the RFI. The following key components were considered in identifying appropriate corrective action.

Investigation data documented in the station-wide GIR, the RFI Reports, and subsequent environmental assessments conducted at these SWMUs were reviewed to gain an understanding of the SWMUs' physical setting, past history, current conditions, and future land uses. Applicable validated analytical data for soil and groundwater environmental media are referenced in this CMS. The applicable Corrective Action Objectives (CAOs) that are part of this CMS include the following:

- CAOs. CAOs are developed to specify the contaminants, media of interest, exposure pathways, and corrective action goals for a SWMU.

- Media Cleanup Objectives (MCOs). MCOs (changed to CTLs) have been provided by the FDEP and, when applicable, site-specific risk-based factors or other available information (e.g., leachability of contaminants from soil to groundwater) may determine CTLs. The State of Florida CTLs for soil and groundwater per Chapter 62-777, F.A.C., are used as the cleanup criteria.

- COCs. Contaminants detected in the soil and groundwater were compared against promulgated regulatory standards to identify risk to human and ecological receptors. COCs were determined from comparing the soil and groundwater sample analysis in the RFA and RFI Reports and additional sampling events to FDEP CTLs. COCs define the contaminants that will be evaluated for corrective action in this CMS.

- Volumes of Media of Concern. The volumes (or areas) of media of concern at each SWMU are determined by considering the requirements for protectiveness as identified in the CAOs and the chemical and physical characterization of the site (i.e., the results and conclusions of the RFI and post-RFI activities).

- Applicable Technologies. Methods and technologies applicable to contaminated media at each SWMU are identified and screened. The most appropriate methods and technologies will be evaluated and selected for implementation.

- Corrective Measure Alternatives. Methods and technologies that pass the screening phase are assembled into corrective measure alternatives.

- Evaluation of Corrective Measure Alternatives. Recommended corrective measure alternatives are described and evaluated using four criteria: technical, environmental, human health, and institutional factors together with cost considerations.

- Recommendation of Corrective Action. The results of the evaluation of alternatives are summarized and a corrective action is recommended for each SWMU.

These components are described further in the CMS Work Plan for NAVSTA Mayport (ABB-ES, 1995a). More detailed discussion of the methodology for CAOs, regulatory cleanup standards, and determining the COCs is provided in the following sections.

1.4.1 Corrective Action Objectives

CAOs are aimed at protecting human health and the environment and are expressed for each impacted medium. At SWMUs 18, 20, 21, and 52, the impacted media for this CMS included groundwater, surface soil, and subsurface soil. CAOs were based on the determined COCs, the exposure pathway, and the present and future receptors at each SWMU. Development of the CAOs considered the results of the RFI compared to the applicable federal and state standards.

For this CMS, CAOs were formulated based on unacceptable human health that exist for direct exposure to groundwater and surface or subsurface soil based on the current and anticipated future use of the sites. The exposure scenarios for human health receptors used the Chapter 62-777, F.A.C., CTL criteria for residential exposure. The current and anticipated receptors are future on-site residents, trespassers, construction workers, and base workers. Based on the current and future use receptors, the following CAOs were developed for SWMUs 18, 20, 21, and 52.

Groundwater

CAO 1: Prevent ingestion of surficial aquifer groundwater containing carcinogens in excess of FDEP Groundwater Cleanup Target Levels (GCTLs) (Chapter 62-777, F.A.C.) for groundwater criteria until CAO 3 has been met.

CAO 2: Prevent ingestion of aquifer groundwater containing noncarcinogens in excess of FDEP GCTLs (Chapter 62-777, F.A.C.) groundwater criteria until CAO 3 has been met.

CAO 3: Restore the groundwater aquifer to the FDEP GCTLs (Chapter 62-777, F.A.C.) for groundwater criteria.

Soil

CAO 4: Protect human health from risks associated with exposure to contaminated soil in excess of the FDEP Soil Cleanup Target Levels (SCTLs) (Chapter 62-777, F.A.C.).

CAO 5: Prevent leaching of contaminants from soil that would result in groundwater concentrations that do not meet CAOs for groundwater.

1.4.2 Media Cleanup Objectives

MCOs (also referred to as CTLs) establish acceptable exposure levels that are protective of human health and the environment using baseline assumptions and inputs. These levels were obtained from the state of Florida CTLs (Chapter 62-777, F.A.C.), BSVs, and assumptions regarding ultimate land uses.

Specifically, CTLs are used to determine COCs, to estimate areas and volumes of impacted media, and to set performance standards for potential remedial alternatives.

Cleanup of inorganic contaminants less than their established background concentrations will not be performed; therefore, applicable BSVs will be used as the lower limit for MCOs. The MCOs selection criteria are summarized below for each medium.

Groundwater

- The state of Florida GCTLs (Chapter 62-777, F.A.C.) for groundwater criteria.

- In areas where groundwater discharges to surface water, the state of Florida Surface Water Cleanup Target Levels (Chapter 62-777, F.A.C.) for protection of marine surface water criteria.

- Constituents exceeding the FDEP GCTLs will be compared with the NAVSTA Mayport BSVs.

Soil

- The State of Florida SCTLs per Chapter 62-777, F.A.C., for soil criteria and the applicable leachability criteria for SCTLs per Chapter 62-777, F.A.C., for protection of groundwater and surface water .

- The Arsenic Background Study for Naval Station Mayport (Tetra Tech, 2008), which increased the BSV for arsenic in soil to 13.7 mg/kg.

- Constituents exceeding the FDEP SCTLs will be compared with the NAVSTA Mayport BSVs.

1.4.3 Contaminants of Concern

The determination of COCs for each medium involved a three-step process:

1. Determine through investigation and analysis the contaminants of interest (COIs).
2. Determine through additional analysis the contaminants of potential concern (COPCs).
3. Identify the COCs based on the COPCs.

COIs and COPCs were determined in the RFI; however, since the RFI was issued, additional data have been collected and new regulations have been promulgated, which provided the criteria for the protection of human health. In this CMS, the COCs were determined by comparing the analytical results of soil and groundwater samples for SWMUs 18, 20, 21, and 52 to the FDEP CTLs.

1.5 Evaluation of Corrective Measure Alternatives

Each corrective measure alternative is evaluated using the criteria contained in the RCRA Corrective Action Plan, Final (USEPA, 1994). The alternatives are evaluated against the standards listed below.

1. Protect human health and the environment.
2. Attain CTLs set by the Chapter 62-777, F.A.C.
3. Control the source of releases.
4. Comply with any applicable standards for management of wastes.
5. Other factors, such as treatment, timeframe, and cost.

The criteria and elements for the above standards to be used for the detailed analysis of alternatives are described below.

Protect Human Health and the Environment

Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control, or management of wastes. A discussion of what types of short-term remedies are appropriate for the site and how various corrective measure alternatives meet this standard should be presented.

Attain CTL Standards Set by the FDEP

Remedies are presented and recommended to attain CTLs set by the FDEP derived from existing State regulations in Chapter 62-777, F.A.C. Information to address whether the potential remedy will achieve the remediation objective will be proposed to attain the CTLs.

Control the Sources of Releases

A critical objective of any remedy must be to stop further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. The source control standard is not intended to mandate a specific remedy or class of remedies. Instead, a wide range of options should be examined. This standard should not be interpreted to preclude the equal consideration of using other protective remedies to control the source, such as partial waste removal, capping, slurry walls, in situ treatment/stabilization or consolidation. As part of the CMS Report, the issue of whether source control measures are necessary should be addressed, and, if so, the type of actions that would be appropriate should be outlined. Any source control measure proposed should include a

discussion on how well the method is anticipated to work given the particular situation at the facility and the known track record of the specific technology.

Comply with any Applicable Standards for Management of Wastes

A discussion of how the specific waste management activities will be conducted in compliance with all applicable Federal or State regulations (e.g., closure requirements and land disposal restrictions) should be presented.

Other Factors

Five general factors represent a combination of technical measures and management controls for addressing the environmental problems at the facility. These factors will be considered as appropriate by the implementing agency in selecting/approving a remedy that meets the four standards listed above. The five general decision factors and relevant information that may be requested are as follows.

a. Long-term Reliability and Effectiveness

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. It may be considered whether the technology or a combination of technologies have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have an immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, earthquakes). Each corrective measure alternative should be evaluated in terms of the projected useful life of the overall alternative and of its component technologies.

b. Reduction in the Toxicity, Mobility, or Volume of Wastes

As a general goal, remedies that are capable of eliminating or substantially reducing the inherent potential for the contaminants to cause future environmental releases or other risks to human health and the environment are considered. There may be some situations, however, where substantial reductions in toxicity, mobility, or volume may not be practicable or even desirable. Estimates of how much the corrective measure alternatives will reduce the waste toxicity, volume, and/or mobility may be helpful in applying this factor. This may be done through a comparison of initial site conditions to expected post-corrective measure conditions.

c. Short-term Effectiveness

Short-term effectiveness may be particularly relevant when remedial alternatives will be conducted in densely populated areas or where waste characteristics are such that risks to workers or to the environment are high and special protective measures are needed. Possible factors to consider include

fire, explosion, exposure to hazardous substances, and potential threats associated with treatment, excavation, transportation, and redisposal or containment of waste material.

d. Implementability

Implementability will often be a determining variable in shaping remedies. Some technologies will require State or local approvals prior to construction and there may be some restrictions or concerns for some remedial approaches. Typical factors to be considered include administrative activities (e.g., permits, right of way, offsite approvals) and the length of time these activities will take, constructability of the remedial measure and time for beneficial results, availability of offsite Treatment, Storage, and Disposal Facility services, and availability of prospective technology.

e. Cost

The relative cost of a remedy may be an appropriate consideration especially in those situations where several different technical alternatives to remediation will offer equivalent protection of human health and the environment. Cost estimates could include costs for engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, training, operation and maintenance, etc.

2.0 SWMU 18 – FTC DIESEL GENERATOR SUMP

SWMU 18, the Fleet Training Center (FTC) Diesel Generator Sump Area, is located at Training Command formerly identified as the Firefighting Training Area (FFTA), which is part of the current FTC due south of the St. Johns River, approximately 1,000 feet west of Atlantic Ocean in the northeastern part of NAVSTA Mayport (see Figure 2-1).

SWMU 18 is the FTC Diesel Generator Sump and consists of a concrete containment structure in which a diesel generator is located. The generator has been at this location since approximately 1982. The concrete sump is approximately 5 feet wide and 10 feet long with 6-inch high sides.

During an RFA-VSI in 1988 and RFI activities in 1995, surface soil staining was observed outside of the sump under the drainpipe's valve and within the flow path extending towards an open stormwater ditch 4 feet to the south. The flow path continued down the ditch to a stormwater sewer catch basin approximately 10 feet to the southwest. Stormwater collected at the catch basin appeared to discharge from an outlet on the east side of Building 351, but could flow to the firefighting apron/retention area. In addition, FFTA waste petroleum liquids were reported to have entered the ditch during overflow at an upstream manhole.

From March through October 1995, an RFI was conducted to delineate the nature and extent of contamination. The activities conducted during the RFI are described in Section 2.1.

2.1 DESCRIPTION OF CURRENT CONDITIONS

The description of current conditions is based on descriptions and data presented in the RFI conducted at SWMU 18. This information is summarized in the following sections; however, the original documents should be reviewed for further details and in-depth analyses of the data presented herein. The information and analytical data from all of the sources were utilized to form an up-to-date understanding of the current conditions at SWMU 18 from which COCs were identified and for which corrective actions were recommended.

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DRAWN BY / DATE	C. TULLEY 02/17/12
CHECKED BY / DATE	K. WIMBLE 03/02/12
REVISED BY / DATE	S. PAXTON 03/02/12
SCALE	AS NOTED

NAVFAC

SWMU LOCATION MAP
FTC DIESEL GENERATOR SUMP
SWMU 18
NAVAL STATION MAYPORT
JACKSONVILLE, FL

CONTRACT NUMBER ___	CTO NUMBER CTO 33
APPROVED BY ___	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 2-1	REV 0

2.1.1 RCRA Facility Investigation

An RFI was conducted from March through October 1995 at SWMU 18. Field activities consisted of a preliminary screening of groundwater samples using a gas chromatograph, the collection of surface and subsurface soil samples, the installation of groundwater monitoring wells, and the collection of groundwater samples. Information regarding the investigation methods and sampling procedures are provided in the RFI for Group III SWMUs (ABB-ES, 1996b), NAVSTA Mayport GIR (ABB-ES, 1995c) and in the NAVSTA Mayport RFI Work Plan (ABB-ES, 1991). Four surface soil, three subsurface soil, four groundwater, and associated duplicate samples were analyzed by a fixed-base laboratory during the RFI.

The original RFI samples were collected from a wide area around SWMU 18 because it was believed that activities associated with SWMU 18 extended throughout the larger boundary. A SWMU boundary evaluation was performed at SWMU 18 in response to a November 2004 Partnering Team meeting. This evaluation concluded 1) SWMU 18 was not the source of the contamination in the drainage ditch, 2) the SWMU boundary is localized to the generator and the sump area, and 3) that the area immediately surrounding SWMU 18 did not contain any detections believed to have been associated with activities in the generator sump area exceeding FDEP Residential Direct Exposure SCTLs or FDEP GCTLs. Therefore, the boundary of SWMU 18 was reduced to the generator sump pump area. The discussion of the revised boundary for SWMU 18 is documented in the January 2005 Partnering Team meeting minutes (see Appendix A).

As a result of the revised SWMU 18 boundary, a smaller number of soil and groundwater samples that specifically relate to SWMU activities were considered for this CMS. Due to the relatively small size of the SWMU, 50 square feet, and the fact that full delineation of the media surrounding SWMU 18 had been performed, then it was considered reasonable to limit the data set to only include one sampling location.

2.1.2 RFI Evaluation

Surface Soil

One volatile organic compound (VOC) (2-butanone) was detected in the surface soil sample at SWMU 18 (MPT-18-SD01). Similarly, eight inorganics (arsenic, barium, beryllium, chromium, copper, lead, vanadium, and zinc), and cyanide were detected at SWMU 18 (ABB-ES, 1996b). Figure 2-1 depicts the location of the soil sample collected during the RFI and considered in this CMS to be a part of the revised SWMU 18 boundary.

Groundwater

One VOC (methane), one semivolatile organic compound (SVOC) (naphthalene), and total petroleum hydrocarbons (TPH) were detected in the groundwater sample collected at SWMU 18. Two inorganic analytes (iron and manganese) were detected in groundwater at SWMU 18 (ABB-ES, 1996b). Figure 2-2 depicts the location of the groundwater sample collected during the RFI and considered in this CMS.

Manganese, at 78.4 micrograms per liter (µg/L), is the only analyte that was detected in groundwater at a concentration exceeding the FDEP GCTL of 50 µg/L; however, it was not present above the BSV of 141 µg/L (Tetra Tech, 2000). Therefore, manganese is not considered to be a concern for the groundwater at SWMU 18.

Contaminants of Concern

The detected concentrations of analytes for each environmental medium were compared to the State of Florida CTLs (Chapter 62-777, F.A.C.) for surface soil, subsurface soil, and groundwater, as appropriate. Section 1.4.3.3 provides a detailed description of the process for the identification of COCs. None of the analytes detected in the soil samples exceeded the FDEP residential SCTLs (see Table 2-1).

The leachability to groundwater evaluation involved a direct comparison of the soil analytical results to the leachability SCTLs, shown in Table 2-2. Contaminants do not exceed SCTLs for leachability; therefore, no contaminants were selected as COCs for surface soil leaching.

There are no surface soil COCs for SWMU 18.

Selection of Groundwater COCs

One contaminant, manganese, shown in Table 2-3, exceeded the GCTLs at SWMU 18; however, it is less than the BSV of 141 µg/L that was calculated in 2000 (FDEP, 2001). Therefore, manganese is not a COC for the groundwater at SWMU 18. Thus, there are no groundwater COCs for SWMU 18.

2.2 CONTAMINANTS OF CONCERN – ECOLOGICAL

No ecological risk assessment was performed at SWMU 18.

COC Summary

No COCs for surface soil or groundwater were identified for SWMU 18.

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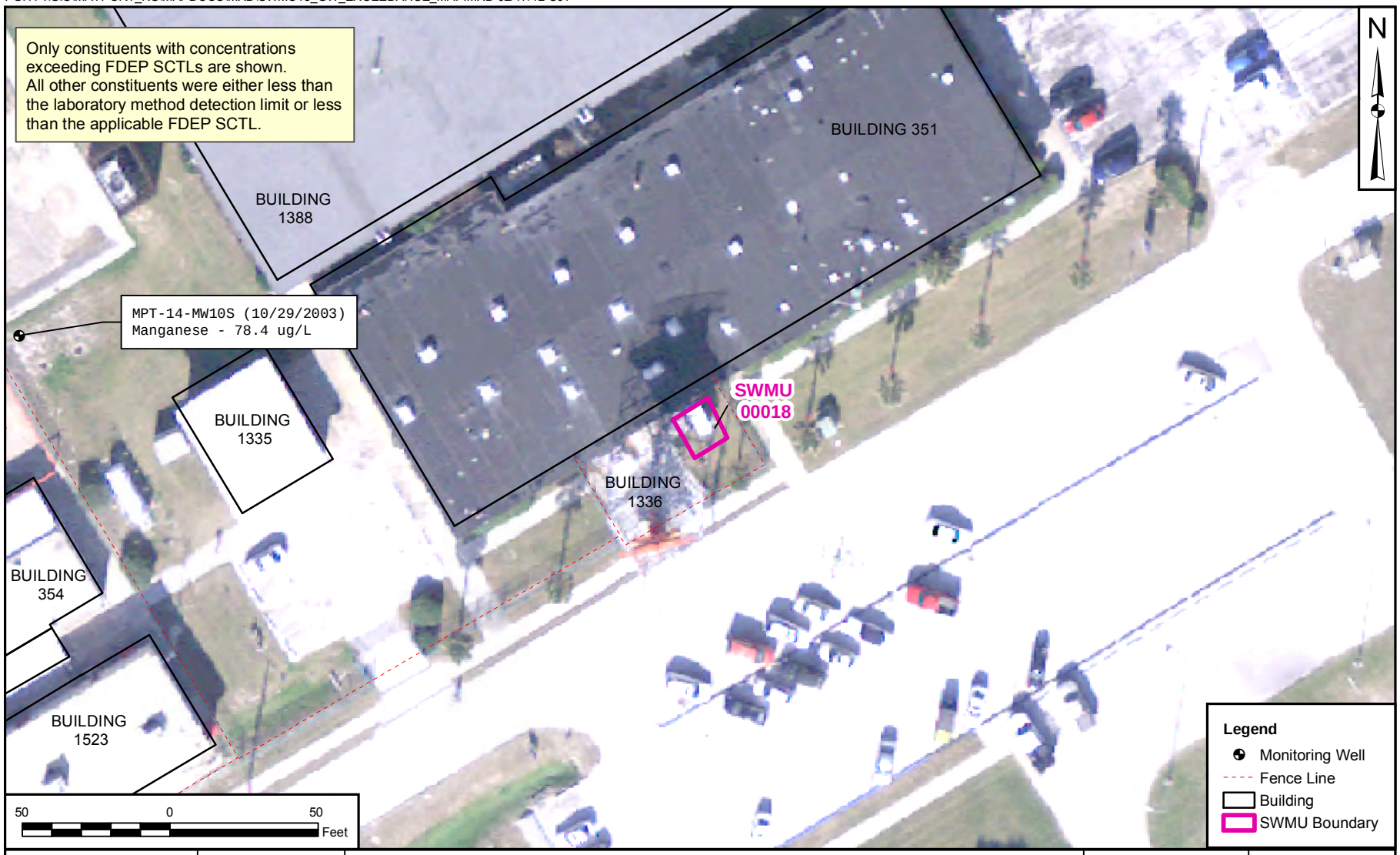


DRAWN BY: C. TULLEY	DATE: 02/17/12	GROUNDWATER EXCEEDANCE MAP FTC DIESEL GENERATOR SUMP SWMU 18 NAVAL STATION MAYPORT JACKSONVILLE, FL	CONTRACT NUMBER: ___
CHECKED BY: K. WIMBLE	DATE: 02/17/12		CTO NUMBER: CTO 33
REVISED BY: ___	DATE: ___		APPROVED BY: ___ DATE: ___
SCALE: AS NOTED			APPROVED BY: ___ DATE: ___
			FIGURE NO.: FIGURE 2-2 REV: 0

TABLE 2-1

SWMU 18, SOIL COIs – RESIDENTIAL DIRECT EXPOSURE
CMS – SWMU 18
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Residential [1] (mg/kg)	Exceeds Residential SCTL [2]
Volatile Organics				
2-Butanone	78-93-3	0.004	16,000	No
Inorganics				
Arsenic	7440-38-2	0.54	2.1	No
Barium	7440-39-3	5	120	No
Beryllium	7440-41-7	0.09	120	No
Chromium	7440-47-3	3.2	210	No
Copper	7440-50-8	10.2	150	No
Cyanide	57-12-5	0.08	34	No
Lead	7439-92-1	7.6	400	No
Vanadium	7440-62-2	2.2	67	No
Zinc	7440-66-6	124	26,000	No

Notes:
1 - SCTL for soil leachability to groundwater - Chapter 62-777, F.A.C., April 2005.
CAS = Chemical Abstract Service

TABLE 2-2

SWMU 18, SOIL COIs – LEACHABILITY
CMS – SWMU 18
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Leachability to Groundwater [1] (mg/kg)
Volatile Organics			
2-Butanone	78-93-3	0.004	17
Inorganics			
Arsenic	7440-38-2	0.54	No Criteria
Barium	7440-39-3	5	1600
Beryllium	7440-41-7	0.09	63
Chromium	7440-47-3	3.2	38
Copper	7440-50-8	10.2	No Criteria
Cyanide	57-12-5	0.08	0.8
Lead	7439-92-1	7.6	No Criteria
Vanadium	7440-62-2	2.2	980
Zinc	7440-66-6	124	No Criteria

Notes:
1 - SCTL for soil - Chapter 62-777, F.A.C., April 2005.

TABLE 2-3

SWMU 18, GROUNDWATER COIs – GCTLs
CMS – SWMU 18
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (µg/L)	GCTL[1] (µg/L)	NS Mayport Background Value	COC
Inorganics					
Manganese	7439-96-5	78.4	50	141	No
Miscellaneous Parameters					
TPH	No CAS Number	258	5,000	No Criteria	No
Semivolatile Organics					
Naphthalene	91-20-3	0.61	14	No Criteria	No
Volatile Organics					
Methane	No CAS Number	10.2	No Criteria	No Criteria	No

Notes:
1 - GCTLs Chapter 62-777, F.A.C., April 2005.
2 - NAVSTA Mayport BSV (Tetra Tech, 2000).

2.3 VOLUMES OF CONTAMINATED MEDIA

No COCs were identified for surface soil or groundwater at SWMU 18.

2.4 IDENTIFICATION OF CORRECTIVE MEASURES TECHNOLOGIES

No COCs were identified for surface soil or groundwater at SWMU 18.

2.5 RECOMMENDATION FOR A FINAL CORRECTIVE MEASURE

No Further Action is recommended for soil and groundwater at SWMU 18.

2.6 REQUEST FOR SITE REHABILITATION COMPLETION ORDER (SRCO)

SWMU 18 meets the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport BSVs are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMU 18.

3.0 SWMUS 20 AND 21 – HOBBY SHOP DRAIN AND SCRAP STORAGE AREA

SWMUs 20 and 21, the Hobby Shop Drain and the Hobby Shop Scrap Storage Area, respectively, are located adjacent to Building 414 in the southeastern portion of NAVSTA Mayport near the Mayport Turning Basin (see Figure 1-2).

SWMU 20 – Hobby Shop Drain

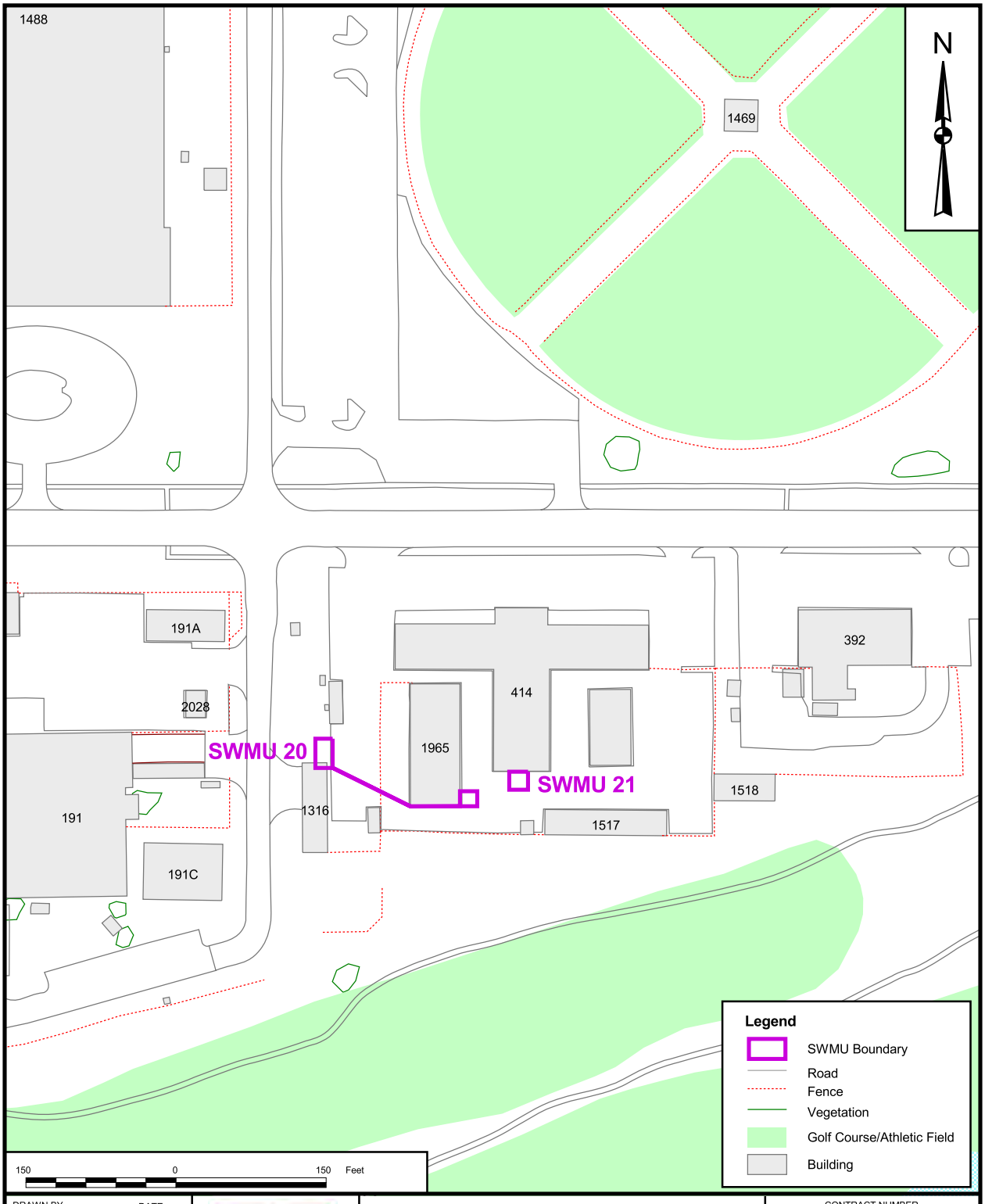
According to the RFA the Hobby Shop Drain was located at the southeastern corner of Building 1965, formerly Building 1277A, as shown in Figure 3-1 (Kearney, 1989). The drain was located on the soil adjacent to a sloped concrete apron leading to the raised concrete floor of Building 1965. The drain inlet, covered with a screen, was connected to an underground pipe that in turn was connected to an outlet on the western side of Building 1965.

During the RFA, the soil in the area of the drain inlet and along the edge of the concrete apron was stained and oily. Stains were also noticed from the outlet of the drain pipe, across the parking lot, and towards a storm drainage ditch that runs parallel to Massey Avenue on the southern side of the roadway. Dark oily sediments were also observed in the drainage ditch, and an oily sheen was also noted at the point where the water in the drainage ditch entered a drain pipe.

The source of the dark staining and oil was not identified during the RFA; however, it was anticipated that the possible sources could have been the material drained from inside the automobile maintenance and repair bays or runoff from the roadway and parking area to the east of Building 1965. The RFA recommended additional investigation to characterize and identify the extent of the releases to the environment (Kearney, 1989).

SWMU 21 – Hobby Shop Scrap Storage Area

The RFA described the Hobby Shop Scrap Storage Area as approximately 20 square feet, located adjacent to the southern side of the eastern wing of Building 414, and surrounded by fencing with an entrance gate on the southern side (Kearney, 1989). At that time, the area was underlain by old, pitted asphalt and there were no berms or containment structures. The facility contained scrap metal, engine parts, open gas cylinders and a Freon 22™ container, an automotive battery, old appliances, and other scrap metal items that were ultimately collected by the Defense Reutilization and Marketing Office for resale. Several of the engine parts were observed to be oily, and the base of the area was



DRAWN BY: S. PAXTON	DATE: 3/19/07	SITE LOCATION MAP HOBBY SHOP DRAIN/HOBBY SHOP SCRAP STORAGE SWMUs 20 AND 21 NAVAL STATION MAYPORT MAYPORT, FLORIDA	CONTRACT NUMBER: CTO 0033
CHECKED BY: K. WIMBLE	DATE: 3/29/07		APPROVED BY: — DATE: —
COST/SCHEDULE-AREA			APPROVED BY: — DATE: —
SCALE: AS NOTED			DRAWING NO.: FIGURE 3 - 1 REV: 0

P:\GIS\MAYPORT_NS\MAPDOCS\APR\SWMU18_20_21_52.APR SWMU 20 & 21 SITE LOCATION LAYOUT 3/29/07 SP

observed to be heavily stained by dark oily materials. The Hobby Shop was reported to have been in operation since 1959. The RFA recommended additional investigation of SWMU 21 to determine the characteristics of materials released to the environment and the extent of the impacts from any hazardous constituents (Kearney, 1989).

3.1 DESCRIPTION OF CURRENT CONDITIONS

The description of current conditions is based on descriptions and data collected by ABB-ES during a site visit conducted in May 1994. This information was taken from the Group III RFA-VSI Report (ABB-ES, 1997) and is summarized in the following sections; however, the Group III RFA-VSI Report and referenced documents should be reviewed for further details and in-depth analyses of the data presented herein. The information and analytical data from all of these sources were utilized to form an up-to-date understanding of the current conditions at SWMUs 20 and 21 from which COCs were identified and for which remedial actions were selected. A formal RFI was not conducted at either of these SWMUs.

In 1991, renovations to the Hobby Shop area included construction of Building 1965, installation of a new drain system (connected to an oil-water separator) to intercept discharge from the garage bays and surrounding parking lot, and new concrete pavement across the entire site. On May 5, 1994, ABB-ES conducted a site visit at SWMUs 20 and 21 and reported that the conditions (i.e., stained soils and oily engine parts) described during the 1989 RFA were no longer applicable. A small waste oil storage area and a new scrap storage area were observed near the Hobby Shop. A valved drainpipe located at the waste oil storage area drained to an adjacent grassy area. The drain was used to remove accumulated rainwater from within the curbed area. No oily scrap materials and no other signs of a release were observed.

3.1.1 RFA-VSI Field Investigation

Limited confirmatory sampling was conducted by ABB-ES in May 1995 at SWMUs 20 and 21 as part of the RFA-VSI. Field activities included the collection of eight surface and six subsurface soil samples and the installation and sampling of six shallow groundwater monitoring wells (see Figures 3-2, 3-3, and 3-4). No attempt was made at that time to characterize the horizontal and vertical extent of contaminants. Two surface soil samples (at a depth of 0 to 1 foot bgs) were collected in the ditch along the southern side of Massey Avenue. This ditch was reported to have received runoff from potentially impacted ditches along the eastern and western sides of SWMUs 20 and 21. Surface and subsurface soil samples were also collected during the drilling of six monitoring wells.

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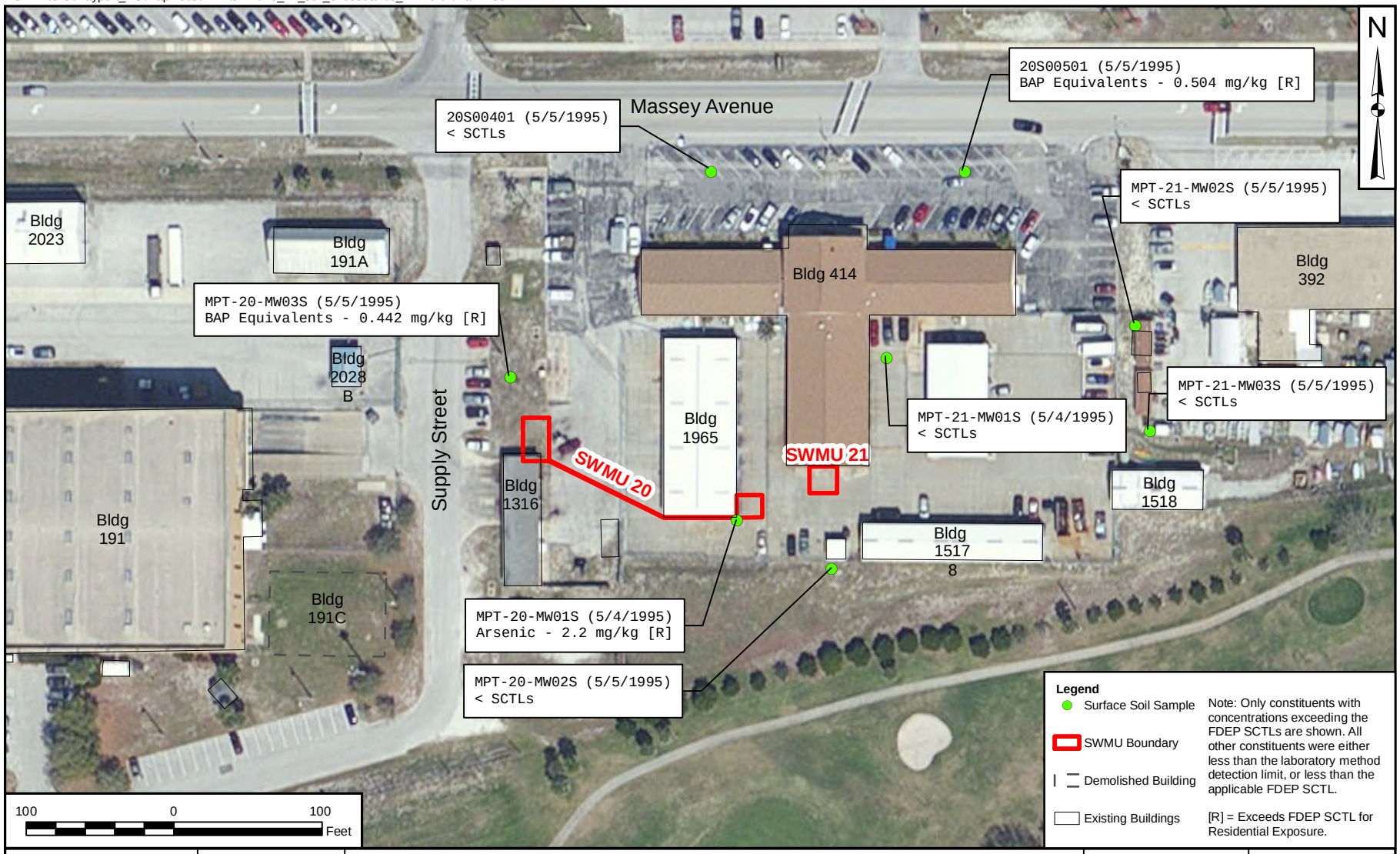

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CHECKED BY / DATE	K. WIMBLE 02/14/12
REVISED BY / DATE	___ ___
SCALE	AS NOTED

SURFACE SOIL EXCEEDANCE MAP
HOBBY SHOP DRAIN/HOBBY SHOP SCRAP STORAGE
SWMU 20 AND 21
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	CTO 033
CTO NUMBER	____
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FIGURE NO.	FIGURE 3-2
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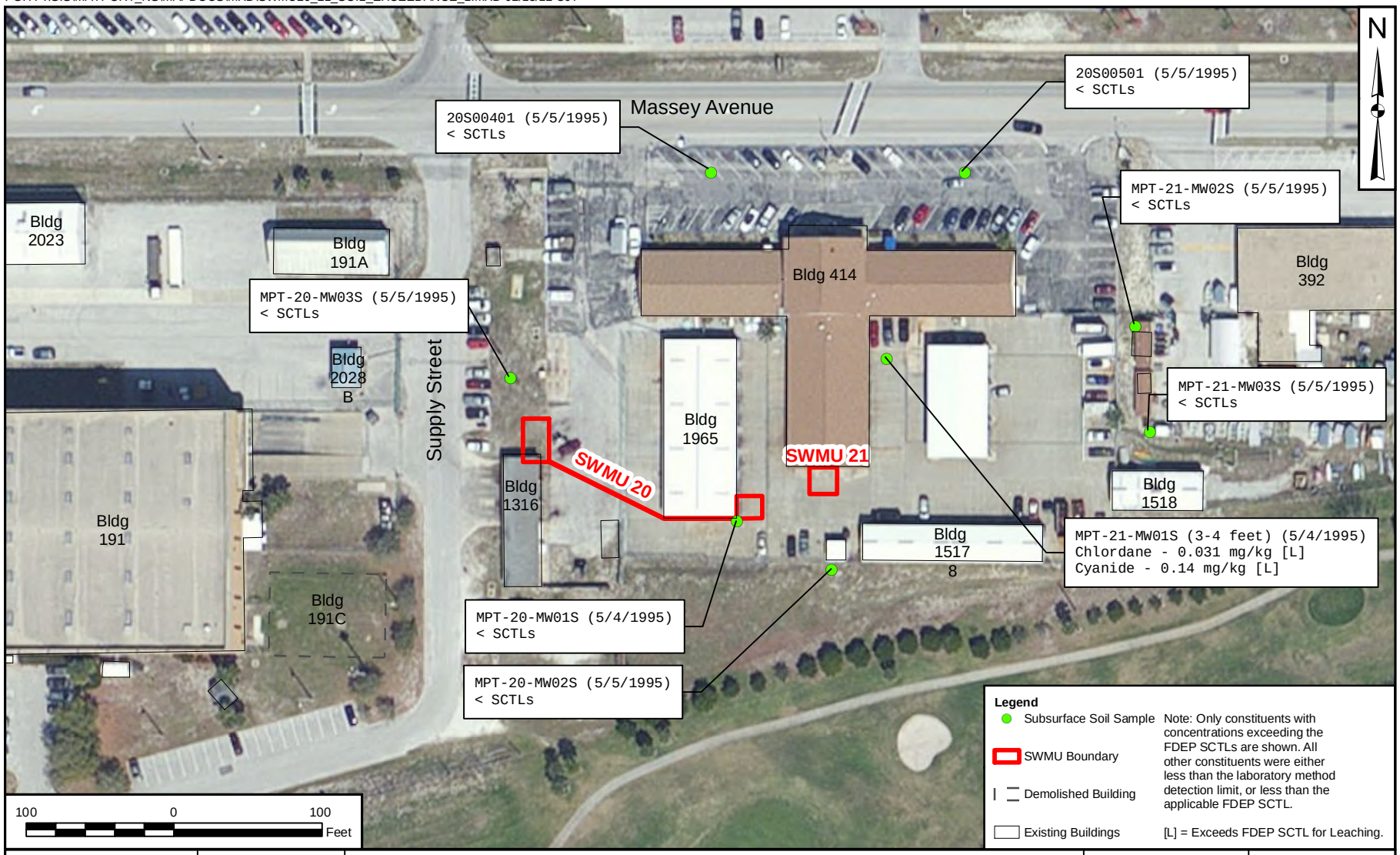

DRAWN BY: C. TULLEY	DATE: 02/13/12	SUBSURFACE SOIL EXCEEDANCE MAP HOBBY SHOP DRAIN/HOBBY SHOP SCRAP STORAGE SWMU 20 AND 21 NAVAL STATION MAYPORT JACKSONVILLE, FLORIDA	CONTRACT NUMBER: CTO 033
CHECKED BY: K. WIMBLE	DATE: 02/14/12		CTO NUMBER: ____
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			FIGURE NO.: FIGURE 3-3 REV: 0

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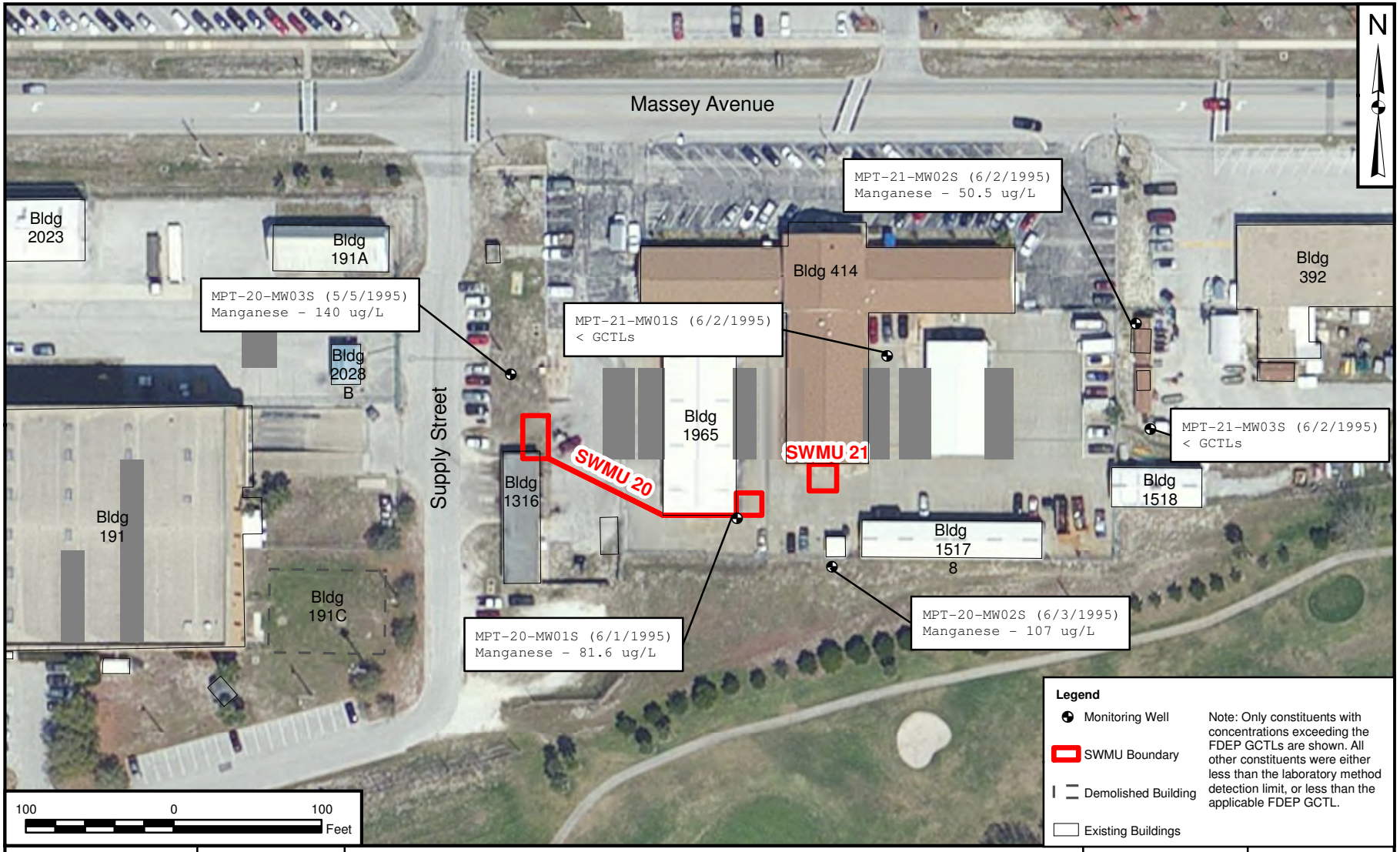

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CHECKED BY / DATE	K. WIMBLE 03/02/12
REVISED BY / DATE	S. PAXTON 03/02/12
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GROUNDWATER EXCEEDANCE MAP
HOBBY SHOP DRAIN/HOBBY SHOP SCRAP STORAGE
SWMU 20 AND 21
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	CTO 033
CTO NUMBER	____
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FIGURE NO.	FIGURE 3-4
REV	0

Information regarding the investigation methods and sampling procedures are provided in the NAVSTA Mayport GIR (ABB-ES, 1995c) and in the NAVSTA Mayport RFI Work Plan (ABB-ES, 1991). The groundwater samples were collected using low-flow purging and sampling techniques. The soil and groundwater samples, and associated duplicates, were analyzed for VOCs, SVOCs, pesticides, polychlorinated biphenyls (PCBs), inorganics, cyanide (subsurface soil only), and water quality parameters.

3.1.2 RFA-VSI Evaluation

Tables listing the complete analytical results of all sampling events per medium are included in Appendix B.

Surface Soil

Four VOCs, 12 SVOCs, 5 pesticides, and 12 inorganic analytes were detected in the surface soil samples. Of the constituents detected, only benzo(a)pyrene equivalents and arsenic were detected at concentrations that exceeded the FDEP SCTL for residential exposure; none of the other constituents exceeded the cleanup criteria for residential direct exposure. Figure 3-2 depicts the locations of surface soil samples collected during the RFA-VSI investigation.

Subsurface Soil

Two VOCs, one SVOC, one pesticide, and eight inorganic analytes were detected in the subsurface soil samples. Of the constituents detected, none were detected at concentrations that exceeded the FDEP SCTLs for residential direct exposure. Figure 3-3 depicts the locations of subsurface soil samples collected during the RFA-VSI investigation.

Groundwater

Organic compounds detected in groundwater samples consisted of one VOC (acetone) and one SVOC [bis(2-ethylhexyl)phthalate]. Neither of these organic compounds exceeded the FDEP GCTLs.

Ten inorganic analytes were detected in groundwater samples collected during the RFA-VSI. One analyte, manganese, exceeded the FDEP GCTL. Figure 3-4 depicts the locations of groundwater samples collected during the RFA-VSI investigation.

3.2 CONTAMINANTS OF CONCERN

The detected concentrations of analytes for each environmental medium were compared to the State of Florida CTLs (Chapter 62-777, F.A.C.) for surface soil, subsurface soil, and groundwater, as appropriate. Section 1.4.3 provides a detailed description of the process for the identification of COCs.

3.2.1 Contaminants of Concern – Soil

One surface soil sample contained benzo(a)pyrene equivalent concentrations that exceeded the FDEP residential cleanup goal of 100 micrograms per kilogram (µg/kg). However, the exceedances of benzo(a)pyrene equivalents in surface soil at SWMUs 20 and 21 were detected in or near asphalt-covered parking lots areas. Based upon site inspections and aerial photographs, the detection of benzo(a)pyrene equivalents are not believed to result from a release at the SWMUs. During the February 2008 Partnering Team meeting (included in Appendix A), the Partnering Team discussed the presence of benzo(a)pyrene at SWMUs 20 and 21 and agreed that the contamination was not attributed to the SWMU. Therefore, benzo(a)pyrene equivalents are not considered COCs in the surface soil at SWMUs 20 and 21. Table 3-1 shows the surface soil COIs for residential direction exposure, and Table 3-2 shows the surface soil COIs for leachability.

For arsenic, one of the eight samples exceeded the FDEP residential cleanup goal of 2.1 mg/kg. However, the arsenic concentration of this sample was less than the NAVSTA Mayport specific background concentration of 13.7 mg/kg that was established in a background study conducted in 2008 (Tetra Tech, 2008).

Concentrations in subsurface soil did not exceed FDEP SCTLs. Table 3-3 shows the subsurface soil COIs for residential direction exposure.

The leachability of subsurface soil contaminants to groundwater evaluation involves a direct comparison of the analytical results to the leachability CTLs for each media as shown in Table 3-4. No contaminants exceed leachability CTLs.

3.2.2 Contaminants of Concern – Groundwater

Manganese is the only analyte that was detected in groundwater at a concentration above the FDEP GCTL of 50 µg/L; however, it was not present above the BSV of 141 µg/L (Tetra Tech, 2000). Manganese is not a groundwater COC at SWMUs 20 and 21. Table 3-5 provides the groundwater COIs.

3.3 CONTAMINANTS OF CONCERN IN SOIL – ECOLOGICAL

No ecological risk assessment was performed at SWMUs 20 and 21.

TABLE 3-1

SWMUs 20 AND 21, SURFACE SOIL COIs – RESIDENTIAL DIRECT EXPOSURE
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Residential[1] (mg/kg)	Exceeds Residential SCTL[2]
Carbon Disulfide	75-15-0	0.011	270	No
Ethylbenzene	100-41-4	0.001	1,500	No
Toluene	108-88-3	0.002	7,500	No
Xylenes, Total	1330-20-7	0.018	130	No
Semivolatile Organics				
Benzo(a)anthracene	56-55-3	0.24 [2]	0.1	Yes
Benzo(a)pyrene	50-32-8	0.28 [2]	0.1	Yes
Benzo(b)fluoranthene	205-99-2	0.38 [2]	0.1	Yes
Benzo(g,h,i)perylene	191-24-2	0.17	2,500	No
Benzo(k)fluoranthene	207-08-9	0.35 [2]	0.1	Yes
Butyl Benzyl Phthalate	85-68-7	0.32	17.000	No
Chrysene	218-01-9	0.34[2]	0.1	Yes
Dibenzo(a,h)anthracene	53-70-3	0.08[2]	0.1	Yes
Fluoranthene	206-44-0	0.56	3,200	No
Indeno(1,2,3-cd)pyrene	193-39-5	0.18 [2]	0.1	Yes
Phenanthrene	85-01-8	0.16	2,200	No
Pyrene	129-00-0	0.34	2,400	No
Pesticides/PCBs				
4,4'-DDD	72-54-8	0.0018	4.2	No
4,4'-DDE	72-55-9	0.0055	2.9	No
4,4'-DDT	50-29-3	0.0042	2.9	No
Chlordane	57-74-9	0.24	2.8	No
Endrin Ketone	53494-70-5	0.0024	25	No
Inorganics				
Arsenic	7440-38-2	2.2	2.1	Yes
Barium	7440-39-3	25.7	120	No
Beryllium	7440-41-7	0.11	120	No
Cadmium	7440-43-9	1.6	8.2	No
Chromium	7440-47-3	17.3	210	No
Cobalt	7440-48-4	0.85	1,700	No
Copper	7440-50-8	40.9	150	No
Lead	7439-92-1	240	400	No
Nickel	7440-02-0	9.6	340	No
Selenium	7782-49-2	0.15	440	No
Vanadium	7440-62-2	8.9	67	No
Zinc	7440-66-6	161	26,000	No

Notes:
1 - SCTL for Residential - Chapter 62-777, F.A.C., April 2005.
2 - Refer to Table 3-2 for the total benzo(a)pyrene equivalents calculation.
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethylene
DDT = dichlorodiphenyltrichloroethane

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)anthracene	0.24	0.1	0.024
Benzo(a)pyrene	0.28	1.0	0.28
Benzo(b)fluoranthene	0.38	0.1	0.038
Benzo(k)fluoranthene	0.35	0.1	0.035
Chrysene	0.34	0.001	0.00034
Dibenzo(a,h)anthracene	0.08	1.0	0.08
Indeno(1,2,3-cd)pyrene	0.18	0.1	0.018

Direct Exposure Residential SCTL = 0.1 mg/kg; total benzo(a)pyrene equivalents = **0.47**.

TABLE 3-2

SWMUs 20 AND 21, SURFACE SOIL COIs – LEACHABILITY
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Leachability to Groundwater [1] (mg/kg)	COC Based on Leachability (Yes/No)
Volatile Organics				
Carbon Disulfide	75-15-0	0.011	5.6	No
Ethylbenzene	100-41-4	0.001	0.6	No
Toluene	108-88-3	0.002	0.5	No
Xylenes, Total	1330-20-7	0.018	0.2	No
Benzo(a)anthracene	56-55-3	0.24	0.8	No
Benzo(a)pyrene	50-32-8	0.28	8	No
Benzo(b)fluoranthene	205-99-2	0.38	2.4	No
Benzo(g,h,i)perylene	191-24-2	0.17	32,000	No
Benzo(k)fluoranthene	207-08-9	0.35	24	No
Butyl Benzyl Phthalate	85-68-7	0.32	310	No
Chrysene	218-01-9	0.34	77	No
Dibenzo(a,h)anthracene	53-70-3	0.08	0.7	No
Fluoranthene	206-44-0	0.56	1,200	No
Indeno(1,2,3-cd)pyrene	193-39-5	0.18	6.6	No
Phenanthrene	85-01-8	0.16	250	No
Pyrene	129-00-0	0.34	880	No
4,4'-DDD	72-54-8	0.0018	5.8	No
4,4'-DDE	72-55-9	0.0055	18	No
4,4'-DDT	50-29-3	0.0042	11	No
Chlordane	57-74-9	0.24	9.6	No
Endrin Ketone[6]	53494-70-5	0.0024	1	No
Inorganics				
Arsenic	7440-38-2	2.2	29 [7]	No
Barium	7440-39-3	25.7	1,600	No
Beryllium	7440-41-7	0.11	63	No
Cadmium	7440-43-9	1.6	7.5	No
Chromium[5]	7440-47-3	17.3	38	No
Cobalt	7440-48-4	0.85	No Criteria	No
Copper	7440-50-8	40.9	No Criteria	No
Lead	7439-92-1	240	No Criteria	No
Nickel	7440-02-0	9.6	130	No
Selenium	7782-49-2	0.15	5.2	No
Vanadium	7440-62-2	8.9	980	No
Zinc	7440-66-6	161	No Criteria	No

Notes:
1 - SCTL for soil leachability to groundwater - Chapter 62-777, F.A.C., April 2005.

TABLE 3-3

SWMUs 20 AND 21, SUBSURFACE SOIL COIs – RESIDENTIAL DIRECT EXPOSURE
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Residential[1] (mg/kg)	Exceeds Residential SCTL[2] (Yes/No)
Volatile Organics				
2-Butanone	78-93-3	0.004	16,000	No
Xylenes, Total	1330-20-7	0.003	130	No
Semivolatile Organics				
Butyl Benzyl Phthalate	85-68-7	0.086	17,000	No
Pesticides/PCBs				
Chlordane	57-74-9	0.031	2.8	No
Inorganics				
Arsenic	7440-38-2	0.77	2.1	No
Barium	7440-39-3	4.6	120	No
Beryllium	7440-41-7	0.11	120	No
Chromium [2]	7440-47-3	1.8	210	No
Cyanide	57-12-5	0.14	34	No
Lead	7439-92-1	16.4	400	No
Vanadium	7440-62-2	2.8	67	No
Zinc	7440-66-6	13.2	26,000	No

Notes:
1 - SCTL for soil – Chapter 62-777, F.A.C., April 2005.
2 - SCTL screening value used for chromium (Total).

TABLE 3-4

SWMUs 20 AND 21, SUBSURFACE SOIL COIs – LEACHABILITY
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Leachability to Groundwater [1] (mg/kg)	COC Based on Leachability (Yes/No)
Volatile Organics				
2-Butanone	78-93-3	0.004	17	No
Xylenes, Total	1330-20-7	0.003	0.2	No
Semivolatile Organics				
Butyl Benzyl Phthalate	85-68-7	0.086	310	No
Pesticides/PCBs				
Chlordane	57-74-9	0.031	9.6	No
Inorganics				
Arsenic	7440-38-2	0.77	No Criteria	No
Barium	7440-39-3	4.6	1,600	No
Beryllium	7440-41-7	0.11	63	No
Chromium [2]	7440-47-3	1.8	38	No
Cyanide	57-12-5	0.14	0.8	No
Lead	7439-92-1	16.4	No Criteria	No
Vanadium	7440-62-2	2.8	980	No
Zinc	7440-66-6	13.2	No Criteria	No

Notes:
1 - SCTL for soil leachability to groundwater – Chapter 62-777, F.A.C., April 2005.
2 - SCTL screening value used for chromium (Total).

TABLE 3-5

SWMUs 20 AND 21, GROUNDWATER COIs – GCTLs
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (µg/L)	GCTL[1] (µg/L)	Background Concentration[2] (µg/L)	Exceeds Criteria
Semivolatile Organics					
Bis(2-Ethylhexyl)phthalate	117-81-7	2	6	No criteria	No
Inorganics					
Arsenic	7440-38-2	5.5	10	GCTL	No
Barium	7440-39-3	29.8	2,000	GCTL	No
Manganese	7439-96-5	140	50	141	No
Nickel	7440-02-0	6.4	100	GCTL	No
Selenium	7782-49-2	0.91	50	GCTL	No

Notes:
1 – GCTLs, Chapter 62-777, F.A.C., April 2005.
2 - NAVSTA Mayport BSV (Tetra Tech, 2000).

COC Summary

No COCs for surface soil, subsurface soil, or groundwater were identified for SWMUs 20 and 21.

3.4 VOLUMES OF CONTAMINATED MEDIA

No COCs were identified for surface soil, subsurface soil, or groundwater at SWMUs 20 and 21.

3.5 IDENTIFICATION AND SCREENING OF CORRECTIVE MEASURES TECHNOLOGIES

No COCs were identified for surface soil, subsurface soil, or groundwater at SWMUs 20 and 21.

3.6 RECOMMENDATION FOR A FINAL CORRECTIVE MEASURE

No Action is recommended for SWMUs 20 and 21.

3.7 REQUEST FOR SRCO

SWMUs 20 and 21 meets the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport BSVs are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMUs 20 and 21.

4.0 SWMU 52 – PWD SERVICE STATION STORAGE AREA

SWMU 52, the Public Works Department (PWD) Service Station Storage Area, is located at Building 25 in the central portion of NAVSTA Mayport near the Mayport Turning Basin (see Figure 4-1). The PWD Service Station Storage Area is located on and adjacent to a concrete slab that is 30 feet long by 20 feet wide and is situated along the northeastern wall of Building 25. There is a drain in the concrete slab that discharges to a nearby oil-water separator.

The RFA Report (A. T. Kearney, 1989) identified items of potential concern located in the area of the concrete pad at the rear of Building 25. These items included 55-gallon drums, a bowser, and a drain leading to an oil-water separator.

At the time of the RFA in 1989, there were at least four 55-gallon drums stored on the concrete slab. Facility personnel indicated that one drum contained window washing solution, one contained coolant, and one contained waste oil. Another drum had an open bung and appeared to be one quarter full of an oily substance. A waste oil bowser of approximately 300-gallon capacity was located on the asphalt just off the northeast edge of the concrete slab. The bowser was reported to be emptied periodically and the oil taken offsite to be recycled. Dark stains were noted on the asphalt beneath the waste oil bowser.

Additional investigation appeared warranted in 1989 for SWMU 52 based on the highly permeable soil in the area, the proximity to Mayport Turning Basin, and the evidence of a release (staining of the asphalt) noted during the RFA. It was suggested in the RFA Report that soil samples should be collected in the area of the stained asphalt and should be analyzed for VOCs, SVOCs, and metals to determine the nature and extent of the potential release of hazardous constituents.

4.1 DESCRIPTION OF CONDITIONS

The description of conditions is based on descriptions and data collected by ABB-ES during a site visit conducted in May to June 1995. This information was taken from the Group III RFA-VSI Report (ABB-ES, 1997) and is summarized in the following sections; however, the Group III RFA-VSI Report and referenced documents should be reviewed for further details and in-depth analyses of the data presented herein. The information and analytical data from RFA-VSI were utilized to form an up-to-date understanding of the current conditions at SWMU 52 from which COCs were identified and for which remedial actions were selected. A formal RFI was not conducted at SWMU 52.

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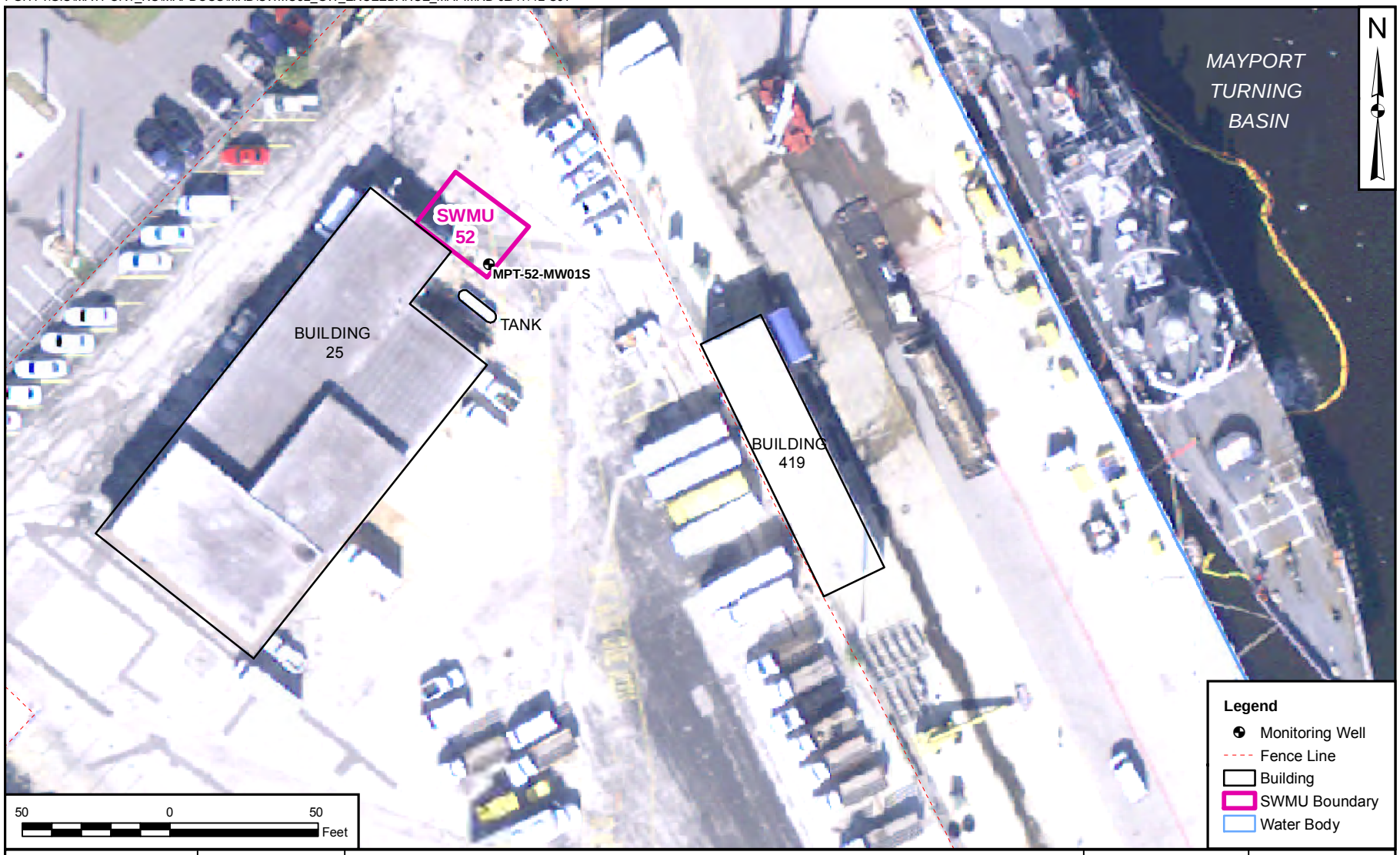

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SWMU LOCATION MAP
PWD SERVICE STATION STORAGE AREA
SWMU 52
NAVAL STATION MAYPORT
JACKSONVILLE, FL

CONTRACT NUMBER	CTO NUMBER
___	CTO 33
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FIGURE NO.	REV
FIGURE 4-1	0

During the site visit by ABB-ES personnel on May 5, 1994, the site generally appeared as described in the 1989 RFA. However, no drums were present on the pad and, in place of the bowser, there was a small tank (approximately 250 gallons) within a metal containment tub. No staining of the pavement in the area of the tank was observed. A small pipe extended from the building wall above the concrete pad. The pipe discharged condensate from an air compressor in the building. The condensate would ultimately get discharged into the drain and would get processed through the oil-water separator. The oil in the separator was periodically collected for recycling, and water from the separator effluent discharged into the sanitary sewer system.

4.1.1 RFA-VSI Field Investigation

Limited confirmatory sampling was conducted by ABB-ES in May to June 1995 at SWMU 52 as part of the RFA-VSI. Field activities included the collection of one surface and one subsurface soil samples and the installation and sampling of one shallow groundwater monitoring well. The total area of SWMU 52 is only 0.016 acre. No additional samples were collected due to the relatively small size of the SWMU footprint. Drilling and soil sampling were conducted on May 5, 1995. Groundwater sampling was conducted on June 3, 1995.

One surface soil sample (0 to 1 foot beneath the existing asphalt surfacing) and one subsurface soil sample (3 to 4 feet bgs) were collected during the drilling of the boring to install monitoring well MPT-52-MW01S.

Monitoring well MPT-52-MW01S was installed in the water table zone of the surficial aquifer (well screen interval 3 to 13 feet bgs). This location was selected to assess whether or not a release has occurred to surface soil (beneath the pavement), subsurface soil, and groundwater in the immediate area of the SWMU. A groundwater sample was collected from the monitoring well.

Information regarding the investigation methods and sampling procedures are provided in the NAVSTA Mayport GIR (ABB-ES, 1995c) and in the NAVSTA Mayport RFI Work Plan (ABB-ES, 1991). The groundwater samples were collected using low-flow purging and sampling techniques. The soil and groundwater samples were analyzed for VOCs, SVOCs, pesticides, inorganics, TPH (groundwater only), and miscellaneous parameters (groundwater only). Figure 4-2 depicts the locations of soil samples collected during the RFA-VSI.

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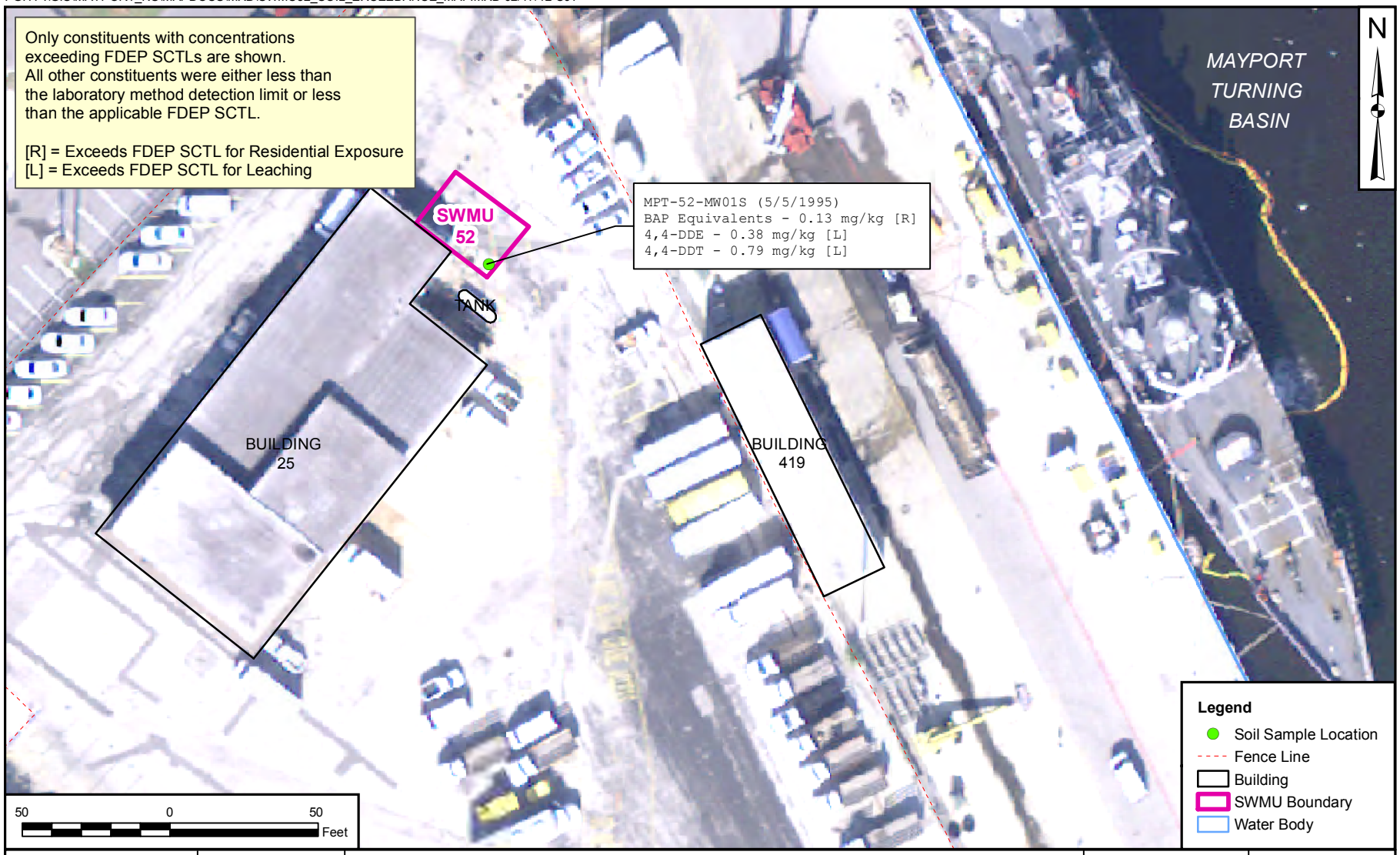

DRAWN BY: C. TULLEY	DATE: 02/17/12	SURFACE SOIL EXCEEDANCE MAP PWD SERVICE STATION STORAGE AREA SWMU 52 NAVAL STATION MAYPORT JACKSONVILLE, FL	CONTRACT NUMBER: ___ / CTO NUMBER: CTO 33
CHECKED BY: K. WIMBLE	DATE: 02/17/12		APPROVED BY: ___ / DATE: ___
REVISED BY: ___	DATE: ___		APPROVED BY: ___ / DATE: ___
SCALE: AS NOTED			FIGURE NO.: FIGURE 4-2 / REV: 0

4.1.2 RFA-VSI Evaluation

The target analytes detected in the surface and subsurface soil samples were compared to BSVs computed from station-wide surface and subsurface soil samples (ABB-ES, 1995a), and FDEP SCTLs (residential) (FDEP, 1995).

The target analytes detected in the groundwater samples were also compared to BSVs computed from station-wide background groundwater samples (ABB-ES, 1995c), and FDEP GCTLs (FDEP, 1995).

Surface Soil

One VOC (xylenes), nine SVOCs [fluoranthene; pyrene; benzo(a)anthracene; chrysene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; indeno(l,2,3-cd)pyrene; and benzo(g,h,i)perylene], two pesticides (4,4'-DDE and 4,4'- DDT), and six inorganic analytes (arsenic, barium, chromium, lead, vanadium, and zinc) were detected in the surface soil sample.

Subsurface Soil

Two VOCs (2-butanone and xylenes) and five inorganic analytes (arsenic, barium, beryllium, chromium, and vanadium) were detected in subsurface soil samples. No SVOCs or pesticides were detected in the subsurface soil samples.

Groundwater

Target analytes detected in the groundwater sample consisted of three inorganic analytes (barium, manganese, and vanadium). The inorganic groundwater samples were not filtered and represent total concentrations. No organic analytes were detected in the groundwater sample collected from SWMU 52.

4.1.3 Preliminary Assessment of Human Health Impacts

A preliminary risk characterization for SWMU 52 was conducted for potential exposures to soil and groundwater. The soil and groundwater samples used in the assessment were collected in May 1995 during the RFA-VSI field investigations described above.

4.1.4 RFA-VSI Assessment of Ecological Impacts

No ecological risk assessment was performed at SWMU 52.

4.2 CONTAMINANTS OF CONCERN

The detected concentrations of analytes for each environmental medium were compared to the State of Florida CTLs (Chapter 62-777, F.A.C.) for surface soil, subsurface soil, and groundwater, as appropriate. Section 1.4.3 provides a detailed description of the process for the identification of COCs.

4.2.1 Surface Soil

Surface soil samples with detectable levels were compared with SCTLs and shown in Table 4-1. Benzo(a)pyrene was detected in the surface soil sample at a concentration (100 µg/kg) that was equal to, but did not exceed, the FDEP residential soil cleanup goal of 100 µg/kg. However, the benzo(a)pyrene equivalents value was calculated to be 0.14 mg/kg, which exceeds the FDEP Residential Direct Exposure SCTL of 0.1 mg/kg. The exceedance of benzo(a)pyrene equivalents in surface soil at SWMU 52 was detected in asphalt-covered parking lots areas. Based upon site inspections and aerial photographs and the March 2007 Partnering Team meeting minutes, the occurrence of benzo(a)pyrene equivalents are not believed to be as a result of a release from SWMU 52. Therefore, benzo(a)pyrene equivalent is not considered a COC in the surface soil at SWMU 52.

The surface soil sample also contained arsenic at a concentration (0.51 mg/kg) that did not exceed the FDEP residential soil cleanup goals (2.1 mg/kg).

Leachability of surface soil contaminants to groundwater was evaluated. The leachability to groundwater evaluation involves a direct comparison of the analytical results to the leachability CTLs. Table 4-2 shows the leachability to groundwater evaluation, which shows that no contaminants exceed the leachability CTLs. Therefore, no contaminants were selected as a COC for surface soil.

4.2.2 Subsurface Soil

Detected levels of contaminants in subsurface soil were compared to SCTLs in Table 4-3. None of the analytes detected in the subsurface soil sample exceeded the SCTLs. No SVOCs or benzo(a)pyrene equivalents were detected in the subsurface soil, supporting that the benzo(a)pyrene equivalents detected in the surface soil are anthropogenic and not due to a release from SWMU 52.

No contaminants exceeded the leachability CTLs as shown in Table 4-4; therefore, no contaminants were selected as a COC for subsurface soil.

TABLE 4-1

SWMU 52, SURFACE SOIL COIs – RESIDENTIAL DIRECT EXPOSURE
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Residential[1] (mg/kg)	Exceeds Residential SCTL[2]
Volatile Organics				
Xylenes, Total	1330-20-7	0.008	130	No
Semivolatile Organics				
Benzo(a)anthracene	56-55-3	0.087	0.1 [4]	Yes
Benzo(a)pyrene	50-32-8	0.1	0.1 [4]	Yes
Benzo(b)fluoranthene	205-99-2	0.14	0.1 [4]	Yes
Benzo(g,h,i)perylene	191-24-2	0.091	2,500	No
Benzo(k)fluoranthene	207-08-9	0.1	0.1 [4]	Yes
Chrysene	218-01-9	0.13	0.1 [4]	Yes
Fluoranthene	206-44-0	0.15	3,200	No
Indeno(1,2,3-cd)pyrene	193-39-5	0.075	0.1 [4]	Yes
Pyrene	129-00-0	0.11	2,400	No
Pesticides/PCBs				
4,4'-DDE	72-55-9	0.38	2.9	No
4,4'-DDT	50-29-3	0.79	2.9	No
Inorganics				
Arsenic	7440-38-2	0.51	2.1	No
Barium	7440-39-3	4.8	120	No
Chromium[3]	7440-47-3	4.2	210	No
Lead	7439-92-1	3.6	400	No
Vanadium	7440-62-2	6.3	67	No
Zinc	7440-66-6	5.4	26,000	No

Notes:
1 - Residential - Chapter 62-777, F.A.C., April 2005.
2 - Comparison of the Residential SCTL with the Maximum Concentration.
3 - SCTL Residential screening values used for chromium (Hexavalent).
4 - Refer to the table below for the total benzo(a)pyrene equivalent calculation that shows that the equivalent concentration exceeds the residential SCTL of 0.1 mg/kg.

Contaminant	Concentration (mg/kg)	Toxic Equivalency Factor	Benzo(a)pyrene Equivalents
Benzo(a)anthracene	0.087	0.1	0.0087
Benzo(a)pyrene	0.10	1.0	0.1
Benzo(b)fluoranthene	0.14	0.1	0.014
Benzo(k)fluoranthene	0.1	0.1	0.01
Chrysene	0.13	0.001	0.00013
Dibenzo(a,h)anthracene	0.00	1.0	0.000
Indeno(1,2,3-cd)pyrene	0.075	0.1	0.0075

Direct Exposure Residential SCTL = 0.1 mg/kg; total benzo(a)pyrene equivalents = **0.14**.

TABLE 4-2

SWMU 52, SURFACE SOIL COIs – LEACHABILITY
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Leachability to Groundwater [1] (mg/kg)	COC Based on Leachability[3] (Yes/No)
Volatile Organics				
Xylenes, Total	1330-20-7	0.008	0.2	No
Semivolatile Organics				
Benzo(a)anthracene	56-55-3	0.087	0.8	No
Benzo(a)pyrene	50-32-8	0.1	8	No
Benzo(b)fluoranthene	205-99-2	0.14	2.4	No
Benzo(g,h,i)perylene	191-24-2	0.091	32,000	No
Benzo(k)fluoranthene	207-08-9	0.1	2.4	No
Chrysene	218-01-9	0.13	77	No
Fluoranthene	206-44-0	0.15	1,200	No
Indeno(1,2,3-cd)pyrene	193-39-5	0.075	6.6	No
Pyrene	129-00-0	0.11	880	No
Pesticides/PCBs				
4,4'-DDE	72-55-9	0.38	18	No
4,4'-DDT	50-29-3	0.79	11	No
Inorganics				
Arsenic	7440-38-2	0.51	No Criteria	No
Barium	7440-39-3	4.8	1,600	No
Chromium[3]	7440-47-3	4.2	38	No
Lead	7439-92-1	3.6	No Criteria	No
Vanadium	7440-62-2	6.3	980	No
Zinc	7440-66-6	5.4	No Criteria	No

Notes:
1 - SCTL for soil leachability to groundwater - Chapter 62-777, .F.A.C, April 2005.
2 - Minimum SCTL based on soil leachability to groundwater and soil leachability to surface water (if applicable).
3 - SCTL screening value used for chromium (Total).

TABLE 4-3

SWMU 52, SUBSURFACE SOIL COIs - RESIDENTIAL DIRECT EXPOSURE
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (mg/kg)	SCTL Residential[1] (mg/kg)	Exceeds Residential SCTL[2]
Volatile Organics				
2-Butanone	78-93-3	0.007	17	No
Xylenes, Total	1330-20-7	0.002	130	No
Pesticides/PCBs				
4,4'-DDE	72-55-9	0.0014	2.9	No
4,4'-DDT	50-29-3	0.0023	2.9	No
Inorganics				
Arsenic	7440-38-2	0.43	2.1	No
Barium	7440-39-3	2.6	120	No
Beryllium	7440-41-7	0.08	120	No
Chromium[3]	7440-47-3	1.6	210	No
Vanadium	7440-62-2	1.1	67	No

Notes:
1 - SCTL for Residential - Chapter 62-777, F.A.C., April 2005.
2 - Comparison of the Residential SCTL with the Maximum Concentration.
5 - SCTL screening value used for chromium (Total).

TABLE 4-4

SWMU 52, SUBSURFACE SOIL COIs - LEACHABILITY
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	Chemical Abstract Number	Maximum Concentration (mg/kg)	SCTL Leachability to Groundwater [1] (mg/kg)	COC Based on Leachability[2] (Yes/No)
Volatile Organics				
2-Butanone	78-93-3	0.007	17	No
Xylenes, Total	1330-20-7	0.002	0.2	No
Pesticides/PCBs				
4,4'-DDE	72-55-9	0.0014	18	No
4,4'-DDT	50-29-3	0.0023	11	No
Inorganics				
Arsenic	7440-38-2	0.43	No Criteria	No
Barium	7440-39-3	2.6	1600	No
Beryllium	7440-41-7	0.08	63	No
Chromium[3]	7440-47-3	1.6	38	No
Vanadium	7440-62-2	1.1	980	No

Notes:
1 - SCTL for soil leachability to groundwater – Chapter 62-777, F.A.C., April 2005.
2 - Minimum SCTL based on soil leachability to groundwater and soil leachability to surface water (if applicable).
3 - SCTL screening value used for chromium (Total).

4.2.3 Groundwater

Detected levels of contaminants were compared with GCTLs and NAVSTA Mayport BSV, as shown in Table 4-5. Manganese, detected at 106 µg/L, was the only analyte that was detected in groundwater at a concentration exceeding the FDEP GCTL of 50 µg/L. However, it was not present above the BSV of 141 µg/L. Manganese is not considered to be a concern for the groundwater at SWMU 52. The groundwater COIs are shown on Table 4-5.

TABLE 4-5

SWMU 52, GROUNDWATER COIs – GCTLs
NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

COI	CAS Number	Maximum Concentration (µg/L)	GCTL[1] (µg/L)	Background Concentration[2] (µg/L)	Exceeds GCTL/ Background
Inorganics					
Barium	7440-39-3	5.2	2,000	GCTL	No
Manganese	7439-96-5	106	50	141	No
Vanadium	7440-62-2	3.7	49	GCTL	No

Notes:
1 - GCTL - Chapter 62-777, F.A.C., April 2005.
2 - NAVSTA Mayport BSV (Tetra Tech, 2000).

4.3 CONTAMINANTS OF CONCERN IN SOIL – ECOLOGICAL

No ecological risk assessment was performed at SWMU 52.

COC Summary

No COCs for surface soil, subsurface soil, and groundwater were identified for SWMU 52.

4.4 VOLUMES OF CONTAMINATED MEDIA

No COCs were identified for surface soil, subsurface soil, or groundwater at SWMU 52.

4.5 IDENTIFICATION AND SCREENING OF CORRECTIVE MEASURES TECHNOLOGIES

No COCs were identified for surface soil, subsurface soil, or groundwater at SWMU 52.

4.6 RECOMMENDATION FOR A FINAL CORRECTIVE MEASURE

No Action is recommended for the soil and groundwater at SWMU 52.

4.7 REQUEST FOR SRCO

SWMU 52 meets the NFA criteria as stated in Rule 62-780-.680, F.A.C., based on the soil and groundwater sampling events. The FDEP CTLs or the NAVSTA Mayport BSVs are not exceeded in either soil or groundwater; therefore, a SRCO is requested for SWMU 52.

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APPENDIX A

NAVSTA MAYPORT INSTALLATION RESTORATION PARTNERING TEAM MEETING MINUTES

NAVSTA MAYPORT PARTNERING MEETING

November 3-4, 2004
TtNUS, Jacksonville, FL

DAY 1

Leader: Diane Lancaster
Scribe: Libby Claggett

Members Present:	Gus Campana	ICLD
	Jim Cason	FDEP
	Libby Claggett	Tetra Tech NUS, Jacksonville (scribe)
	Rich May	Tier II Link
	Mike Halil	CH2M Hill
	Terry Hansen	Tetra Tech NUS, Tallahassee
	Diane Lancaster	NAVSTA Mayport
	Adrienne Wilson	NAVFAC EFD SOUTH
	Mike Albert	Tetra Tech, Oak Ridge (guest)
	Travis Zwenger	NAVSTA Mayport (guest)

Meeting Start Time: 8:30 a.m.

1.1 Check In/Opening Remarks

Team members shared events since the last meeting.

1.2 Agenda Modifications/Additions

The agenda was reviewed. The training will be "Elf Management" instead of "Living Life to the Fullest."

1.3 Ground Rules/Minutes Approval/Action Item Review

The ground rules, minutes, and action items were reviewed. The team reached **consensus** to approve the minutes.

Action Items Developed August 31 – September 1, 2004

08.04.1.3 Mike A., Terry, and Chuck to coordinate collecting soil samples at SWMU 18 in order to use 95% UCL for determining NFA. **Agenda Item**

08.04.1.5.1 Terry to send Installation Map of the Facility from the Facility to Team members. **Ongoing**

Action Item: Diane to send Terry revised map (CAD file) from NAVSTA Mayport Facility (Libby to send Jim electronic copy of file).

08.04.1.5.3 Terry and Jim to check on approval of (old) CMS for SWMUs 6 and 7. **Agenda Item**

08.04.1.5.4 Terry and Chuck to check if groundwater samples were taking during the clean closure for SWMU 10. **Done (groundwater samples were not taken)**

08.04.1.5.5 Chuck to get with Diane regarding the AOC C boundary and provide boundary data to TtNUS' GIS department (Pittsburgh). **Done**

08.04.1.8 Diane to forward email from Cheryl on SWMU 23 to Mike A. to modify SWMU 23 CMS. **Done**

08.04.1.10.1 Terry to send Craig most recent SCAP/CAMP. **Parking Lot**

08.04.1.10.2 Remember to include Craig at virtual Team meetings. **Parking Lot**

08.04.1.12.1 Craig to find guidance on what needs to be in the CMIP and send to Team members. **Done – agenda item**

08.04.1.12.2 Terry to incorporate CMIP dates into the CAMP. **Ongoing**

08.04.1.12.3 Terry to send Adrienne a CD containing the SWMU PowerPoint presentation earlier in the meeting. **Done**

08.04.2.2 Gus to email the Four Listening Techniques to Team members. **Done**

08.04.2.6 Mike A. and Diane to clarify SWMU boundaries on outstanding CMSs. **Ongoing**

Action Items Developed March 2-3, 2004

03.04.1.13.1 Robbie and Adrienne to talk with NAVFAC EFD SOUTH legal about SWMU 50 solutions. **Ongoing**

03.04.1.13.3 Robbie to talk to Dan Waddill regarding the proposed dumping of dredge material at Panama City. **Ongoing**

03.04.2.4.3 Diane to send Mike A. copies of fuel farm tank removal contamination assessments (Tanks 99, 100, 101, and 102). **Ongoing**

03.04.2.5.2 Terry to investigate putting the CAMP (in calendar form) on the IR portal. **Parking Lot**

Action Items Developed September 16-17, 2003

09.03.1.7.3 Terry to generate CDs of the Administrative Record Access database for NAVSTA Mayport and send to Team members. **Parking Lot**

1.4 Break

1.5 TtNUS Update

Terry provided the following update:

AOC D – Diane will cover in facility update.

SWMUs 1, 23, 24, and 25 – SB(s) in TtNUS internal review. Final CMS to be submitted this week.

Action Item: Diane and Mike A. to check on boundaries for SWMUs 1, 23, 24, and 25.

SWMUs 44 and 45 – CMS recommended for soils. Groundwater covered under SWMUs 1, 23, 24, and 25.

SWMUs 2, 3, 4, 5, and 22 – Waiting on response to CMS. Draft SB in TtNUS internal review.

SWMUs 6 and 7 – Treatability Study Report finalized. Product found in one well. No approval (or response) for old CMS can be found. CMSA in preparation.

SWMUs 18, 20, 21, and 52 – Need to decide on plan for SWMUs 20, 21, and 52.

SWMUs 8, 9, 10, and 11 – no changes at this time. Path forward – TtNUS to evaluate where data gaps are and determine what needs to be done to collect the appropriate information.

SWMU 50 – Diane to cover in facility update.

SWMU 16 – SB is in TtNUS internal review.

SWMU 13 – CMS recommended NFA because all constituents were below residential standards. CMS is to be corrected.

SWMUs 19, 26, 28, and 56 – Final CMS is in progress.

Action Item: Mike A. to provide to Jim an official copy of RTC on CMS for SWMUs 19, 26, 28, and 56.

Action Item: Diane to send CMIP language to Terry and Chuck Metz.

Group IV SWMUs (linear pipelines) –Ditch sampling is in progress (CH2M Hill). The draft RFI identified four areas having data gaps. Area 1 will most likely be identified by 95% UCL. Areas 2 and 4 did not have an industrial exceedance. Areas 3 did have industrial exceedances. Area 3 needs additional samples collected to identify or eliminate hexachlorobenzene. Instead of four areas as identified in the draft RFI, only one area needs attention. A correction will be made in the revised RFI.

AOC C – Draft CMS is in preparation (resample MW for VC).

Action Item: Adrienne to talk to Craig to see if a SB is needed for an AOC with removal that would be NFA and what would the boundary include.

SWMUs 14 and 15 – CMIP is in preparation. The Facility and State need to determine LUC boundaries for SWMU 14. When the CMIP language is resolved (Whiting Field), a generic CMIP will be created, and the CMIP for SWMU 14 will be updated and submitted (Steve Beverly).

Action Item: Diane to redraw proposed LUC boundaries for SWMU 14 and send to Team members and officially to Jim.

SWMUs 12 and 17 – Final SBs are in and awaiting approval. LUC boundary for SWMU 17 needs to be defined (one for soil and one for groundwater).

Action Item: Diane to draw proposed LUC boundaries for SMWU 17 and send to Team members and officially to Jim.

Action Item: Mike A. to check on groundwater potential use or restriction for SWMU 17.

Mike A. provided the following update:

SWMU 18 – Currently not enough samples to use FLUCL to close out SWMU 18 to residential standards and may not be able to be accomplished with additional samples due to benzo(a)pyrene. CMS recommended LUCs. Benzo(a)pyrene needs to be addressed.

Action Item: Mike A. to investigate if FLUCL to residential for SWMU 18 can be accomplished if benzo(a)pyrene is addressed.

1.6 Lunch

1.7 Facility Update/HSWA Permit

Diane provided the following update:

SWMUs 15 and 17 – Notice to proceed sent to contractor (start construction on cap).

SWMU 23 – Building construction is complete.

SWMU 50 – Additional sampling was being performed; however, the sampling was delayed due to mechanical problems. In process of obtaining a dredge permit for dredging to be performed in Spring 2005. Considering other options for dredge materials.

The local DEP is questioning whether or not a wash rack is a SWMU. The wash rack is an oil water separator without a covered storage tank (flow through process). The new wash rack had not been operational very long. Site has been cleaned, and engineering controls have been put in place.

Currently investigating a fuel lab next to the airfield. The fuel lab has a septic system. Documentation was signed that now fuel is put in the septic system. During a pump out, a petroleum odor was noticed. Also questioning if this could be a SWMU.

HSWA Permit has undergone extensive Navy review and is on its way back to the State for discussion.

1.8 Break

1.9 Tier II Update

Rich provided the update. The last Tier II meeting was consumed with reviewing Exit Strategies. The Institutional Controls update indicated that RODs are being processed. All RODs with IC language need to be sent up to headquarters first. Tier II will meet again in December. Diane explained what she knows about Navy reorganization.

<u>Exit Strategy comments for Mayport were:</u>

- Decision documents should be identified.
- In many line items, FDEP has approved, but no indication of approval from EPA. (Okay for petroleum sites.)
- RCRA Column needs some type of designation even if NFA in 1993 permit.

<u>General Exit Strategy comments were:</u>

- The Last NFA Date and Last Remedy in Place Date for the Installation need to be added to all Exit Strategies somewhere in the header.
- A table of acronyms and definitions should be included.
- Sheets not being used by the Team need to be deleted from the Exit Strategy.
- In general, more detail is better especially in Exit Strategy Concerns or Barriers column.
- A Remedy in Place (Interim RACR) Date column needs to be added.
- Any color coding needs to be explained. Shading needs to be in light colors.
- Installation name needs to be included on all sheets (in the footer).
- If NFA, no additional information needed in the In Progress (Status) column. If site is in progress, information is needed in the In Progress (Status) column.
- Clarify RCRA, CERCLA, Petroleum, BRAC, or MMRP (letter designation) as necessary in column 3.
- Review of Exit Strategies needs to become a standard agenda item at every face-to-face Tier I Team meeting with updates emailed to Robbie and Jerry. Changes to report to Tier II are changes in remedy, NFA or ROD dates, CTC, and rationale for change(s).

1.10 SCAP/CAMP/Exit Strategy

No update on the CAMP – in process of revision.

The Exit Strategy needs up be updated to include Tier II comments.

Planning to submit 21 SBs in FY05.

SBs for	SWMUs 1, 23, 24, 25	Final CMS November 04
	SWMUs 2, 3, 4, 5, 22	Waiting on CMS response, final CMS submitted
	SWMUs 6, 7	CMS addendum (SB highly unlikely)
	SWMUs 18, 20, 21, 52	Final CMS in preparation
	SWMU 16	NFA (no CMS)
	SWMU 13	CMS approved
	Group IV	CMS, but no SB
	AOC C	Possible SB
	SWMUs 12, 17	Waiting on SB approval; 17 to be revised
	SWMUs 19, 26, 28, 56	Final CMS being written

Action Item: Terry to update the CAMP and send to Team members.

Action Item: Adrienne to incorporate the Tier II comments into the Exit Strategy.

1.11 Review of Day

Plus/Delta

+	Δ
Facility	Excess Halloween candy!!
Lot accomplished	
TtNUS update format	
Fudge	
Good Tier II interface	
Travis Zwenger as a guest	
Diane's explanation of reorganization	

NAVSTA MAYPORT PARTNERING MEETING
November 3-4, 2004
TtNUS, Jacksonville, Florida

DAY 2

Leader: Diane Lancaster
Scribe: Libby Claggett

Members Present:	Gus Campana	ICLD
	Jim Cason	FDEP
	Libby Claggett	Tetra Tech NUS, Jacksonville (scribe)
	Rich May	Tier II Link
	Mike Halil	CH2M Hill
	Terry Hansen	Tetra Tech NUS, Tallahassee
	Diane Lancaster	NAVSTA Mayport
	Adrienne Wilson	NAVFAC EFD SOUTH
	Mike Albert	Tetra Tech, Oak Ridge (guest)
	Mark Peterson	Tetra Tech NUS, Jacksonville (guest)

Meeting Start Time: 8:30 a.m.

2.1 Check In/Opening Remarks

Team members shared events from the previous night.

2.2 Training

Gus provided the Team with a training plan through July 2005. The training on "Elf Management" (based on "The Leadership Secrets of Santa Claus" and "The Last Fairy") consisted of a PowerPoint presentation, discussion, and a handout of the presentation.

2.3 Break

2.4 RAC Update

Mike H. provided the following update:

Building 191 – Delineated extent of contaminated soil in ditch. Also collected 12 samples for lateral and vertical delineation in the ditch. If samples come back clean, will try to cut further back for extent along the line of the ditch. First round of results due today.

Site 1330 – Slice line runs along the area where the pipeline was. The PID response matched what the monitoring wells and groundwater results have shown to date. Isopropylbenzene was found in soil (especially at the pier) and groundwater. Possibilities to remove the isopropylbenzene without destroying the pier and disrupting utilities are being investigated. Two issues to address: 1) upgradient delineation on airfield and 2) determine best/appropriate technologies for consideration and proceed to design.

Building 1363 – Was performing source removal per RAP. Lack of funding caused job to shut down. Removal completed and excavation done. Site restoration, post removal groundwater sampling and analyses, and report submittal have not been performed due to funding issues.

Building 25 – One dirty well at the site. Next sampling event was supposed to be in December. Not enough funding to complete December event. Requesting to skip December event and move to annual sampling, having the BOA pick up the sampling in June 2005.

Action Item: Mike H. to submit letter to Jim requesting to skip December sampling event at Building 25 and move to annual sampling, having the BOA pick up the sampling in June 2005.

2.5 UST Update

Mark Peterson provided the following update:

Site 283 – PAHs in and around the residential and industrial standards. Submitted a SAR with a source removal section (instead of a RAP) to conduct excavation to get rid of the material and close the site. Resampled and SB-50 and SB-53 now exceed industrial numbers. Trying to avoid a LUCIP at this site. Propose additional sampling, running FLUCL, and excavating.

2.6 Break

2.7 SWMU 18

Diane proposed the dieldrin is not site related, was legal application from other areas, and has nothing to do with SWMU 18.

The Team reached **consensus** that the dieldrin is not site related, was a legal application from other areas, and has nothing to do with SWMU 18.

Data shows one location (MPT-18-SD03) upgradient of the generator site with exceedances.

Action Item: Chuck Metz to investigate direction of flow in ditch in front of Building 351 in the SWMU 18 area and take photographs of the ditch area.

For statistical purposes, arsenic can be removed since numbers will be below residential due to new regulations to come out at the end of the year.

Path Forward: Re-collect from original sample locations, take three samples (one midpoint between MPT-18-MW03S and MPT-18-SD03 and one ½ way up the sidewall on each side of the ditch) for PAHs to determine extent of contamination. If dirty, dig and haul. Wait on data for path forward on CMS.

Action Item: TtNUS Jacksonville (Chuck Metz) to coordinate with Mike H. to sample at SWMU 18 (5 samples).

2.8 Facilitator Review/Closeout Meeting: Action Item Review, Next Agenda, +/Δ List

The Team proceeded to review the facilitator. Gus provided comments back to Team members.

<u>Action and Consensus Item Review</u>

Action and consensus items were reviewed and are provided on the next page(s).

<u>Next Agenda</u>

The agenda items were finished at this time and the team reviewed their action items. The next meeting will be held January 5-6, 2005, in Jacksonville, FL, and Adrienne Wilson will be the Team Leader.

Check In	30 minutes	Leader/All
TtNUS Update/Document Update	120 minutes	Terry/Mike A.
Tier II Update	30 minutes	Robbie
Team Training, Live Life to the Fullest	60 minutes	Facilitator
Facility Update	60 minutes	Diane
SCAP/CAMP/Exit Strategy	45 minutes	Terry

UST Update	60 minutes	Mark Peterson/Beverly	
RAC Update	30 minutes	Mike H.	
Closeout Activities	30 minutes	All	Day 2

Other agenda items will be sent as determined.

Tentative Meeting Dates/Locations

March 8-9, 2005	Jacksonville
April 26 -27, 2005	TBD
July 14, 2005	Virtual Meeting
August 30-31, 2005	Atlanta, GA
November 1-2, 2005	TBD

Plus/Delta

+	Δ
Libby (fixing projector, etc.)	Robbie's absence
Discussions (SWMU 18)	Beverly's absence
Mike H. and Mark P. updates	
Mike A.'s info on isopropylbenzene	
Rich at meeting	
Jim's guidance	
Trust among Team	
Focus on resolution of issues	

Action Items
NAVSTA Mayport Partnering Meeting
November 3-4, 2004

Action Items Developed November 3-4, 2004

11.04.1.3 Diane to send Terry revised map (CAD file) from NAVSTA Mayport Facility (Libby to send Jim electronic copy of file).

11.04.1.5.1 Diane and Mike A. to check on boundaries for SWMUs 1, 23, 24, and 25.

11.04.1.5.2 Mike A. to provide to Jim an official copy of RTC on CMS for SWMUs 19, 26, 28, and 56.

11.04.1.5.3 Diane to send CMIP language to Terry and Chuck Metz.

11.04.1.5.4 Adrienne to talk to Craig to see if a SB is needed for an AOC with removal that would be NFA and what would the boundary include.

11.04.1.5.5 Diane to redraw proposed LUC boundaries for SWMU 14 and send to Team members and officially to Jim.

11.04.1.5.6 Diane to draw proposed LUC boundaries for SMWU 17 and send to Team members and officially to Jim.

11.04.1.5.7 Mike A. to check on groundwater potential use or restriction for SWMU 17.

11.04.1.5.8 Mike A. to investigate if FLUCL to residential for SWMU 18 can be accomplished if benzo(a)pyrene is addressed.

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11.04.1.10.2 Adrienne to incorporate the Tier II comments into the Exit Strategy.

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11.04.2.8.1 Chuck Metz to investigate direction of flow in ditch in front of Building 351 in the SWMU 18 area and take photographs of the ditch area.

11.04.2.8.2 TtNUS Jacksonville (Chuck Metz) to coordinate with Mike H. to sample at SWMU 18 (5 samples).

Action Items Developed August 31 – September 1, 2004

08.04.1.3 Mike A., Terry, and Chuck to coordinate collecting soil samples at SWMU 18 in order to use 95% UCL for determining NFA. **Agenda Item**

08.04.1.5.2 Terry to send Installation Map of the Facility from the Facility to Team members. **Ongoing**

Action Item: Diane to send Terry revised map (CAD file) from NAVSTA Mayport Facility (Libby to send Jim electronic copy of file).

08.04.1.5.3 Terry and Jim to check on approval of (old) CMS for SWMUs 6 and 7. **Agenda Item**

08.04.1.5.4 Terry and Chuck to check if groundwater samples were taking during the clean closure for SWMU 10. **Done (groundwater samples were not taken)**

08.04.1.5.5 Chuck to get with Diane regarding the AOC C boundary and provide boundary data to TtNUS' GIS department (Pittsburgh). **Done**

08.04.1.8 Diane to forward email from Cheryl on SWMU 23 to Mike A. to modify SWMU 23 CMS. **Done**

08.04.1.10.2 Terry to send Craig most recent SCAP/CAMP. **Parking Lot**

08.04.1.10.2 Remember to include Craig at virtual Team meetings. **Parking Lot**

08.04.1.12.1 Craig to find guidance on what needs to be in the CMIP and send to Team members. **Done – agenda item**

08.04.1.12.3 Terry to incorporate CMIP dates into the CAMP. **Ongoing**

08.04.1.12.3 Terry to send Adrienne a CD containing the SWMU PowerPoint presentation earlier in the meeting. **Done**

08.04.2.3 Gus to email the Four Listening Techniques to Team members. **Done**

08.04.2.6 Mike A. and Diane to clarify SWMU boundaries on outstanding CMSs. **Ongoing**

Action Items Developed March 2-3, 2004

03.04.1.13.1 Robbie and Adrienne to talk with NAVFAC EFD SOUTH legal about SWMU 50 solutions. **Ongoing**

03.04.1.13.3 Robbie to talk to Dan Waddill regarding the proposed dumping of dredge material at Panama City. **Ongoing**

03.04.2.4.3 Diane to send Mike A. copies of fuel farm tank removal contamination assessments (Tanks 99, 100, 101, and 102). **Ongoing**

03.04.2.5.2 Terry to investigate putting the CAMP (in calendar form) on the IR portal. **Parking Lot**

Action Items Developed September 16-17, 2003

09.03.1.7.3 Terry to generate CDs of the Administrative Record Access database for NAVSTA Mayport and send to Team members. **Parking Lot**

Consensus Items
NAVSTA Mayport Partnering Meeting
November 3-4, 2004

The team reached consensus to approve the minutes.

The Team reached **consensus** that the dieldrin is not site related, was a legal application from other areas, and has nothing to do with SWMU 18.

Parking Lot Items
NAVSTA Mayport Partnering Meeting
November 3-4, 2004

Terry to send Craig most recent SCAP/CAMP.

Remember to include Craig at virtual Team meetings.

Terry to investigate putting the CAMP (in calendar form) on the IR portal.

Terry to generate CDs of the Administrative Record Access database for NAVSTA Mayport and send to Team members.

NAVSTA MAYPORT PARTNERING MEETING
January 5, 2005
Virtual Meeting

Leader: Adrienne Wilson
Scribe: Libby Claggett

Members Present:	Jim Cason	FDEP
	Libby Claggett	Tetra Tech NUS, Jacksonville (scribe)
	Robbie Darby	Tier II Link
	Mike Halil	CH2M Hill
	Terry Hansen	Tetra Tech NUS, Tallahassee
	Diane Lancaster	NAVSTA Mayport
	Adrienne Wilson	NAVFAC EFD SOUTH
	Mike Albert	Tetra Tech, Oak Ridge (guest)
	Craig Benedikt	USEPA (guest)
	Beverly Washington	NAVFAC EFD SOUTH (adjunct member)
Members Absent:	Gus Campana	ICLD

Meeting Start Time: 9:00 a.m.

1.1 Check In/Opening Remarks

Team members shared events since the last meeting.

1.2 Agenda Modifications/Additions

Team members reviewed the agenda for the day.

1.3 Ground Rules/Minutes Approval/Action Item Review

The ground rules, minutes, and action items were reviewed. The team reached **consensus** to approve the minutes.

Action Items Developed November 3-4, 2004

11.04.1.3 Diane to send Terry revised map (CAD file) from NAVSTA Mayport Facility (Libby to send Jim electronic copy of file). **Ongoing**

11.04.1.5.1 Diane and Mike A. to check on boundaries for SWMUs 1, 23, 24, and 25. **Ongoing**

11.04.1.5.2 Mike A. to provide to Jim an official copy of RTC on CMS for SWMUs 19, 26, 28, and 56. **Ongoing – will send to Terry today – Jan 5.**

11.04.1.5.3 Diane to send CMIP language to Terry and Chuck Metz. **Done**

11.04.1.5.4 Adrienne to talk to Craig to see if a SB is needed for an AOC with removal that would be NFA and what would the boundary include. **Done – Craig said yes, an SB would be needed for AOC.**

11.04.1.5.5 Diane to redraw proposed LUC boundaries for SWMU 14 and send to Team members and officially to Jim. **Done**

11.04.1.5.6 Diane to draw proposed LUC boundaries for SWMU 17 and send to Team members and officially to Jim. **Ongoing**

11.04.1.5.7 Mike A. to check on groundwater potential use or restriction for SWMU 17. **Ongoing**

11.04.1.5.8 Mike A. to investigate if FLUCL to residential for SWMU 18 can be accomplished if benzo(a)pyrene is addressed. **Done**

11.04.1.10.1 Terry to update the CAMP and send to Team members. **Updated, but not sent.**

11.04.1.10.2 Adrienne to incorporate the Tier II comments into the Exit Strategy. **Ongoing**

11.04.2.4 Mike H. to submit letter to Jim requesting to skip December sampling event at Building 25 and move to annual sampling, having the BOA pick up the sampling in June 2005. **Ongoing – moving to NFA with condition request.**

11.04.2.8.1 Chuck Metz to investigate direction of flow in ditch in front of Building 351 in the SWMU 18 area and take photographs of the ditch area. **Done**

11.04.2.8.2 TtNUS Jacksonville (Chuck Metz) to coordinate with Mike H. to sample at SWMU 18 (5 samples). **Done**

Action Items Developed August 31 – September 1, 2004

08.04.1.5.1 Terry to send Installation Map of the Facility from the Facility to Team members. **Ongoing**

08.04.1.10.1 Terry to send Craig most recent SCAP/CAMP. **Parking Lot**

08.04.1.10.2 Remember to include Craig at virtual Team meetings. **Parking Lot**

08.04.1.12.2 Terry to incorporate CMIP dates into the CAMP. **Done**

08.04.2.6 Mike A. and Diane to clarify SWMU boundaries on outstanding CMSs. **Ongoing**

Action Items Developed March 2-3, 2004

03.04.1.13.1 Robbie and Adrienne to talk with NAVFAC EFD SOUTH legal about SWMU 50 solutions. **Ongoing**

03.04.1.13.3 Robbie to talk to Dan Waddill regarding the proposed dumping of dredge material at Panama City. **Done**

03.04.2.4.3 Diane to send Mike A. copies of fuel farm tank removal contamination assessments (Tanks 99, 100, 101, and 102). **Ongoing**

03.04.2.5.2 Terry to investigate putting the CAMP (in calendar form) on the IR portal. **Parking Lot**

Action Items Developed September 16-17, 2003

09.03.1.7.3 Terry to generate CDs of the Administrative Record Access database for NAVSTA Mayport and send to Team members. **Parking Lot**

1.4 Break

1.5 TtNUS Update

Terry provided the following update:

AOC C – Terry showed Team members a copy of the new AOC C boundary map. TtNUS is scheduled to resample 2 wells, and take a surface water sample (selected sampling). In process of writing CMS and evaluating remedial options.

SWMU 17 – TtNUS scheduled to sample for benzo(a)pyrene to confirm if there is or is not a problem. There probably is not enough data to use FLUCL. The worse case scenario would be an LUC over the area.

Action Item: Terry and Chuck to check at SWMU 17 to determine what needs to be done to use FLUCL on the soil to eliminate an LUC.

Action Item: Terry to send a copy of FLUCL software and guidance to Robbie and send a copy of the software manual to Mike A.

SWMU 18 – The dirtiest spot is in the "headwaters" of the "ditch." The area is not a ditch. It is a grassy area located between a sidewalk and parking lot. There is a sidewalk separating the grassy area from the generator in question. There are clean samples between the generator and the grassy area (catch basin). The CMS is pending resolution. The CMS will be changed to show a SWMU boundary appropriate with the generator.

Group IV – The CMS has been started. Looking into remedial options.

SWMUs 1, 23, 24, 25 – CMS was sent out final around November 15, 2004.

SWMUs 6 and 7 – Currently working on CMS addendum.

Fuel Farm –

Action Item: Beverly to check at NAVFAC for any as-built designs for Tanks 99, 100, and 101.

Action Item: TtNUS Jacksonville to scan and make electronic copy of Fuel Farm documents from Diane.

Site 1241 – Wells put in for the UST portion on the investigation will be closed.

1.6 UST Update

Mark provided the following update:

Site 1241 – NFA received.

Alpha/Delta Pier – The technical memorandum has been approved. Report recommended installation of free product recovery wells and RAP for free product recovery.

Building 351 – Completed 4th Quarter sampling and the report will be generated in approximately 30 days. The 3rd Quarter report is still out for review.

Site 250 – Issued final report in December 2004. Conducted statistical analysis on this site. Originally used PRO UCL software. Data was rerun using FLUCL. Same outcome was reached with the FLUCL software.

Site 283 – Soil samples at lab waiting for analyses.

SWMU 50 – In early November while attempting additional sampling, the rig and Bobcat began to sink. Was able to recover the rig. RSC tried to drag their Bobcat out with a crane from the berm, which worsened matters. The Bobcat is still stuck at SWMU 50. The project was immediately shut down.

The driller's insurance company refuses to let them work on this job site. Only one drilling company has shown any interest in the job; however, they have not been able to get through TtNUS' contract requirements in the past.

Meanwhile, data collected is being validated at the TtNUS Pittsburgh office. Missing a few TOC and sulfide values and 15 compaction test results. Once the data is validated, it will be sent to Shaw.

Beverly sent out the Site Management Plan via email on January 4.

1.7 RAC Update

Mike H. provided the following update:

Building 191 ditch – The GPS coordinate survey has been completed. The dig and haul action memo should be out at the end of the month.

Site 1330 – Looking into remedial alternatives. Will have more information at the March meeting.

Building 25 – Writing request for NFA or NFA with conditions. Mike needs input from Jim.

SWMU 15 – Assisting with EMAC construction of the parking lot. Some utilities were left off the parking lot drawings.

Buildings 460, 26, and 265 – Treatment systems are still in place. Equipment needs to be taken down and wells abandoned. Discussion ensued on possible reuse of the treatment systems.

Action Item: Beverly to check on possible reuse/funding of previously shut down treatment systems.

Action Item: Mike H. to develop an inventory list of unused equipment and send to Beverly and Diane (Site 460).

Site 1363 – Currently on hold. Need to finish site restoration, reinstall monitoring wells, perform post excavation sampling, and write the report.

1.8 Tier II Update

Robbie provided the update. Ken Lapierre (Jon Johnston's replacement) attended the last Tier II meeting and has been introduced to Tier III.

Discussion items included the IC Update, FFA's and effects on RODs, global RBCA, Tier III update, GIPRA, Exit Strategies, and the ADR Conference. The top topics were funding issues, BRAC, and exit strategies.

SWMU issues discussed included the significant overlap in RCRA compliance and IR. (Discussion ensued regarding SWMUs, the State of Florida, funding, permits, etc.)

Funding issues included not being able to fund Facilitation contract for Partnering meetings in December and early January. This is not expected to be an issue in early February.

Navy reorganization and funding were other major items of discussion.

1.9 Lunch

1.10 SCAP/CAMP/Exit Strategy

Terry provided the updates. Team members reviewed the CAMP for FY05.

Exit strategy comments from Tier II:

Mayport Specific
SWMUs 19, 20, 21, 26, 28, 44, 45, 52, and 56 Soil LUC – need some type of dollar amount
NFA – no documentation for UST 07 and 12
Next 5 year review?

General Comments
NFA Sites are to be listed and documented on Tab 2 and removed from the Active Sites list.
Tier I Teams should resubmit corrected/updated Exit Strategies by the end of February 2005.

1.11 Facility Update

Diane briefly discussed several different topics regarding NAVSTA Mayport, including that no petroleum contaminated site investigations have been funded this year, and that the Navy SWMU Working Group continues to discuss details of SWMU identification. An environmental liability study will be conducted next week.

1.12 Closeout Meeting: Action Item Review, Next Agenda, +/Δ List

Action and Consensus Item Review

Action and consensus items were reviewed and are provided on the next page(s).

Next Agenda

The agenda items were finished at this time and the team reviewed their action items. The next meeting will be held March 8-9, 2005, in Jacksonville, FL, and Jim Cason will be the Team Leader.

Check In	30 minutes	Leader/All	
TtNUS Update/Document Update	120 minutes	Terry/Mike A.	
Tier II Update	30 minutes	Robbie	
Team Training	60 minutes	Facilitator	
Facility Update	60 minutes	Diane	
SCAP/CAMP/Exit Strategy	45 minutes	Terry	
UST Update	60 minutes	Mark P./Beverly	
RAC Update (with Site 1330)	75 minutes	Mike H.	
Closeout Activities	30 minutes	All	Day 2
SWMU Discussion	60 minutes	All	

Other agenda items will be sent as determined.

Tentative Meeting Dates/Locations

April 26-27, 2005	TBS (tentative Jacksonville, FL)
July 14, 2005	Virtual meeting
August 30-31, 2005	Atlanta, GA
November 1-2, 2005	TBD

Plus/Delta

+	Δ
Good meeting	No solution at this point for SWMU issue
Virtual meeting worked well	
Craig being able to attend and participate	
Additional ideas/discussion regarding SWMUs	
Robbie's Tier II Update	

Action Items
NAVSTA Mayport Partnering Meeting
January 5, 2005

Action Items Developed January 5, 2005

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01.05.1.7.1 Beverly to check on possible reuse/funding of previously shut down treatment systems.

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Action Items Developed September 16-17, 2003

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Consensus Items
NAVSTA Mayport Partnering Meeting
January 5, 2005

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Parking Lot Items
NAVSTA Mayport Partnering Meeting
January 5, 2005

Terry to send Craig most recent SCAP/CAMP.

Remember to include Craig at virtual Team meetings.

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APPENDIX B

CMS DATA SET

TABLE B-1
CMS DATA SET SWMU 18 GROUNDWATER

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FDEP GCTL	MPT-14-MW10S								
SAMPLE IDENTIFICATION		14G01001	MPT-14-GW-MW10S-00	MPT-14-MW10S-01	MPT-14-MW10S-01-F	MPT-14-MW10S-02	MPT-14-MW10S-02-F	MPT-14-MW10S-03	MPT-14-GW-MW10S-04	MPT-14-GW-MW10S-04-F
SAMPLE DATE		6/17/1995	7/10/2001	12/5/2001	12/5/2001	3/26/2002	3/26/2002	6/11/2002	10/2/2002	10/2/2002
METALS (µg/L)										
ARSENIC	10	**3.8 J**	--	--	--	--	--	--	--	--
BARIUM	2000	**10 J**	--	--	--	--	--	--	--	--
CALCIUM	--	**69700**	--	--	--	--	--	--	--	--
IRON	300	75.9 UJ	120 U	--	--	--	--	--	404	--
MAGNESIUM	--	**8450**	--	--	--	--	--	--	--	--
MANGANESE	50	79.8	97.7	--	--	--	--	--	92.9	--
SODIUM	160000	**16200**	--	--	--	--	--	--	--	--
DISSOLVED METALS (µg/L)										
IRON	300	--	--	--	138 U	--	**102**	620	--	19.3 U
MANGANESE	50	--	--	--	70.6	--	71.6	54.5	--	80.1
MISCELLANEOUS PARAMETERS (mg/L)										
ALKALINITY	--	**182**	--	**146**	--	**140**	--	**155**	**150**	--
AMMONIA	3	0.30 U	--	0.20 U	--	--	--	--	--	--
AMMONIUM	--	--	--	--	--	--	--	--	**0.10 J**	--
CHLORIDE	250	**25.2**	--	--	--	**37**	--	**14**	**20**	--
HARDNESS	--	**169**	--	--	--	--	--	--	--	--
NITRATE	10	--	--	0.10 U	--	0.02 U	--	**0.013**	**0.02**	--
ORTHOPHOSPHATE	--	--	--	--	--	--	--	**0.14**	**0.56**	--
PHOSPHORUS (ELEMENTAL)	0.0001	0.31	--	--	--	--	--	--	--	--
SULFATE	250	**35.8**	--	--	--	**23**	--	**13.6**	**24.4**	--
TOTAL DISSOLVED SOLIDS	500	**275**	--	--	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	--	**0.30**	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	--	**3.8**	--	--	--	--	--	--	--	--
TOTAL PHOSPHORUS	--	--	--	--	--	**0.20**	--	--	--	--
SEMIVOLATILES (µg/L)										
CHRYSENE	4.8	10 U	0.10 U	--	--	0.10 U	--	--	0.10 U	--
NAPHTHALENE	14	10 U	2 U	--	--	2 U	--	--	2 U	--
PHENANTHRENE	210	10 U	1 U	--	--	1 U	--	--	1 U	--
VOLATILES (µg/L)										
METHANE	--	--	--	**12**	--	**21**	--	**7.9**	**8.4**	--
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)										
NAPHTHALENE	14	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (mg/L)										
TOTAL PETROLEUM HYDROCARBONS	5	0.05 U	--	--	--	0.30 U	--	--	0.30 U	--
TPH (C08-C40)	5	--	--	--	--	--	--	--	--	--

TABLE B-1
CMS DATA SET SWMU 18 GROUNDWATER

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FDEP GCTL	MPT-14-MW10S						
SAMPLE IDENTIFICATION		MPT-14-MW10S-05	MPT-14-MW10S-05-D	MPT-14-MW10S-08	MPT-14-MW10S-20100927	MPT-14-MW10S-20110118	MPT-14-MW10S-20110426	MPT-14-MW10S-20110726
SAMPLE DATE		3/19/2003	3/19/2003	10/29/2003	9/27/2010	1/18/2011	4/26/2011	7/26/2011
METALS (µg/L)								
ARSENIC	10	--	--	--	--	--	--	--
BARIUM	2000	--	--	--	--	--	--	--
CALCIUM	--	--	--	--	--	--	--	--
IRON	300	453	394	327	--	--	--	--
MAGNESIUM	--	--	--	--	--	--	--	--
MANGANESE	50	108	106	78.4	--	--	--	--
SODIUM	160000	--	--	--	--	--	--	--
DISSOLVED METALS (µg/L)								
IRON	300	--	--	--	--	--	--	--
MANGANESE	50	--	--	--	--	--	--	--
MISCELLANEOUS PARAMETERS (mg/L)								
ALKALINITY	--	**170**	**170**	**156**	--	--	--	--
AMMONIA	3	**0.60 J**	**0.18 J**	--	--	--	--	--
AMMONIUM	--	--	--	--	--	--	--	--
CHLORIDE	250	**20**	**20**	20 U	--	--	--	--
HARDNESS	--	--	--	--	--	--	--	--
NITRATE	10	0.10 U	0.10 U	--	--	--	--	--
ORTHOPHOSPHATE	--	**0.16**	**0.19**	**0.22**	--	--	--	--
PHOSPHORUS (ELEMENTAL)	0.0001	--	--	--	--	--	--	--
SULFATE	250	**21**	**21**	**20.3**	--	--	--	--
TOTAL DISSOLVED SOLIDS	500	--	--	--	--	--	--	--
TOTAL KJELDAHL NITROGEN	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	--	--	--	--	--	--	--	--
TOTAL PHOSPHORUS	--	--	--	--	--	--	--	--
SEMIVOLATILES (µg/L)								
CHRYSENE	4.8	**0.02**	0.01 U	1 U	--	--	--	--
NAPHTHALENE	14	2.1 U	2.2 U	**0.61 J**	--	--	--	--
PHENANTHRENE	210	**0.03 J**	**0.03 J**	1 U	--	--	--	--
VOLATILES (µg/L)								
METHANE	--	**30**	**33**	**10.2**	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (UG/L)								
NAPHTHALENE	14	--	--	--	0.03 U	0.0465 U	0.048100 U	0.0926 U
PETROLEUM HYDROCARBONS (mg/L)								
TOTAL PETROLEUM HYDROCARBONS	5	0.19 U	0.19 U	**0.258**	--	--	--	--
TPH (C08-C40)	5	--	--	--	**0.92**	**0.187 J**	0.163 U	0.315 U

Notes:
-- = The chemical was not analyzed or no value was available.
Data Qualifiers:
Blank (i.e., no qualifier) = the chemical was detected.
J = The chemical was detected but the concentration reported is an estimated value.
U = The chemical was not detected.

TABLE B-2
CMS DATA SET SWMU 18 SOIL

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FL CTL 62-777	FL CTL 62-777	FL CTL 62-777	MPT-18-SD01	
SAMPLE IDENTIFICATION	Industrial	Residential	Leachability	18D00101	18D00101-D
SAMPLE DATE	Soil-Direct	Soil-Direct	Based GW	4/19/1995	4/19/1995
METALS (mg/kg)					
ARSENIC	12	2.1	--	**0.44 J**	**0.59 J**
BARIUM	130000	120	1600	**8.9 J**	**12.3 J**
BERYLLIUM	1400	120	63	**0.10 J**	**0.08 J**
CADMIUM	1700	82	7.5	**0.65 J**	**0.56 J**
CHROMIUM	470	210	38	**4.6**	**6.2**
COBALT	42000	1700	--	**0.93 J**	0.79 U
COPPER	89000	150	--	**20.2**	**19.4**
LEAD	1400	400	--	**15.6**	**34.4 J**
MERCURY	17	3	2.1	**0.13**	**0.11**
SELENIUM	11000	440	5.2	**0.13 J**	0.13 U
TIN	880000	47000	--	**3.6 J**	3.5 U
VANADIUM	10000	67	980	**1.9 J**	**2.3 J**
ZINC	630000	26000	--	**86.6 J**	**131 J**
MISCELLANEOUS PARAMETERS (mg/kg)					
CYANIDE	11000	34	0.8	**0.08 J**	0.06 U
SEMIVOLATILES (MG/KG)					
BIS(2-ETHYLHEXYL)PHTHALATE	390	72	3600	**0.27 J**	**0.29 J**
BUTYL BENZYL PHTHALATE	380000	17000	310	0.77 U	**0.23 J**
PYRENE	45000	2400	880	0.77 U	**0.085 J**
VOLATILES (mg/kg)					
ACETONE	68000	11000	25	0.012 U	**0.01 J**
PESTICIDES/PCBS (mg/kg)					
CHLORDANE	14	2.8	9.6	**0.011**	**0.016**

Notes:

-- = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

J = The chemical was detected but the concentration reported is an estimated value.

U = The chemical was not detected.

TABLE B-3
CMS DATA SET SWMUs 20 AND 21 GROUNDWATER

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FL CTL 62-777 GW-Table I	MPT-20-MW01S	MPT-20-MW02S	MPT-20-MW03S		MPT-21-MW01S	MPT-21-MW02S	MPT-21-MW03S
SAMPLE IDENTIFICATION		20G00101	20G00201	20G00301	20G00301-D	21G00101	21G00201	21G00301
SAMPLE DATE		6/1/1995	6/3/1995	6/1/1995	6/1/1995	6/2/1995	6/2/1995	6/2/1995
METALS (µg/L)								
ARSENIC	10	2.3 UJ	3.4 UJ	**5.4 J**	**5.5 J**	1.8 UJ	1.2 UJ	3 UJ
BARIUM	2000	**9.9 J**	**13.1 J**	**28 J**	**29.8 J**	**2.9 J**	**3.2 J**	**1.8 J**
CALCIUM	--	**61400**	**90800**	**86900**	**89600**	**54900**	**66900**	**38000**
IRON	300	**136**	1250	474	477	**102**	**125**	**54.6 J**
MAGNESIUM	--	**9110**	**5130**	**24500**	**24300**	**16100**	**6130**	**1430 J**
MANGANESE	50	81.6	107	129	140	**47.9**	50.5	**15.3**
NICKEL	100	5.7 U	5.7 U	**6 J**	**6.4 J**	5.7 U	5.7 U	5.7 U
SELENIUM	50	0.50 U	0.50 U	**0.91 J**	0.50 U	0.50 U	0.50 U	0.50 U
SODIUM	160000	**17800**	**10400**	**29400**	**27100**	**13100**	**13100**	**5160**
VANADIUM	49	**4 J**	**3.6 J**	**1.8 J**	**2 J**	**1.8 J**	**2.1 J**	**1.8 J**
MISCELLANEOUS PARAMETERS (mg/L)								
ALKALINITY	--	**201**	**221**	**282**	--	**209**	**198**	**108**
AMMONIA	3	**0.80**	**0.80**	**1.1**	--	**1**	**1**	0.30 U
CHLORIDE	250	**14**	**16.8**	**22.3**	--	**11**	**16.2**	**3.66**
HARDNESS	--	**190**	**257**	**329**	--	**206**	**194**	**102**
PHOSPHORUS (ELEMENTAL)	0.0001	0.39	0.33	0.33	--	0.18	0.17	0.10 U
SULFATE	250	**14.4**	**30.9**	**80.3**	--	**22.2**	**9.56**	**8.86**
SULFIDE	--	1 U	1 U	**1.6**	--	1 U	1 U	1 U
TOTAL DISSOLVED SOLIDS	500	**292**	**311**	**463**	--	**283**	**275**	**145**
TOTAL KJELDAHL NITROGEN	--	**1**	**1**	**1.3**	--	**1**	**1.1**	0.30 U
TOTAL ORGANIC CARBON	--	**7.6**	**10.3**	**7.5**	--	**6.6**	**6**	**3.5**
SEMIVOLATILES (µg/L)								
BIS(2-ETHYLHEXYL)PHTHALATE	6	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
VOLATILES (µg/L)								
ACETONE	6300	10 UJ	10 U	10 UJ	10 UJ	**4 J**	**4 J**	10 U

Notes:
-- = The chemical was not analyzed or no value was available.

Data Qualifiers:
Blank (i.e., no qualifier) = the chemical was detected.
J = The chemical was detected but the concentration reported is an estimated value.
U = The chemical was not detected.

TABLE B-4
CMS DATA SET SWMUs 20 AND 21 SOIL

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FL CTL 62-777 Industrial Soil-Direct	FL CTL 62-777 Residential Soil-Direct	FL CTL 62-777 Leachability Based GW	20S00401	20S00501	MPT-20-MW01S		MPT-20-MW02S		MPT-20-MW02S	MPT-20-MW03S
SAMPLE IDENTIFICATION				20S00401	20S00501	20B00105	20S00101	20B00205	20B00205-D	20S00201	20B00305
SAMPLE DATE				5/5/1995	5/5/1995	5/4/1995	5/4/1995	5/5/1995	5/5/1995	5/5/1995	5/5/1995
METALS (MG/KG)											
ARSENIC	12	2.1	--	**0.30 J**	**0.31 J**	**0.49 J**	2.2 J	**0.63 J**	**0.69 J**	**1.1 J**	**0.50 J**
BARIUM	130000	120	1600	**9.2 J**	**6.6 J**	**2.8 J**	**25.7 J**	**3 J**	**3.3 J**	**9.4 J**	**2.5 J**
BERYLLIUM	1400	120	63	**0.11 J**	**0.06 J**	0.07 U	**0.10 J**	0.07 U	0.07 U	**0.10 J**	**0.11 J**
CADMIUM	1700	82	7.5	**0.40 J**	0.25 U	0.30 U	**1.4**	0.27 U	0.27 U	**0.34 J**	0.30 U
CHROMIUM	470	210	38	**4.8**	**3.9**	**1.6 J**	**13.8**	**1.6 J**	**1.2 J**	**9.2**	**1.6 J**
COBALT	42000	1700	--	0.67 U	0.65 U	0.76 U	**0.85 J**	0.69 U	0.69 U	0.64 U	0.78 U
COPPER	89000	150	--	1.4 UJ	1.7 UJ	0.73 UJ	**29**	0.72 UJ	0.72 UJ	**3.9 J**	0.75 UJ
LEAD	1400	400	--	**2.2 J**	**3.1 J**	**1.6 J**	**234 J**	**2.7 J**	**3.2 J**	**19.9 J**	**1.4 J**
NICKEL	35000	340	130	**1.3 J**	1.2 U	1.4 U	**6.7 J**	1.3 U	1.3 U	**1.4 J**	1.4 U
SELENIUM	11000	440	5.2	**0.12 J**	0.10 UJ	0.12 U	0.11 UJ	0.11 U	0.11 U	**0.15 J**	0.13 U
VANADIUM	10000	67	980	**4.8 J**	**4.2 J**	**2 J**	**8.9 J**	**1.8 J**	**2.1 J**	**5.5 J**	**1.2 J**
ZINC	630000	26000	--	**3.9 J**	**4.7**	**5.6**	**161**	**4.2 J**	**4.1 J**	**23.6**	**3.8 J**
MISCELLANEOUS PARAMETERS											
CYANIDE (MG/KG)	11000	34	0.8	0.05 U	0.05 U	0.06 U	0.05 U	0.06 U	0.06 U	0.05 U	0.06 U
SEMIVOLATILES (MG/KG)											
BAP EQUIVALENT	0.7	0.1	8	0.72 U	0.50377	--	0.840333	--	--	0.68 U	--
BENZO(A)ANTHRACENE	--	--	0.8	0.72 U	**0.077 J**	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
BENZO(A)PYRENE	0.7	0.1	8	0.72 U	**0.098 J**	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
BENZO(B)FLUORANTHENE	--	--	2.4	0.72 U	**0.15 J**	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
BENZO(G,H,I)PERYLENE	52000	2500	32000	0.72 U	0.69 U	0.81 U	**0.075 J**	0.74 U	0.74 U	0.68 U	0.82 U
BENZO(K)FLUORANTHENE	--	--	24	0.72 U	**0.12 J**	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
BUTYL BENZYL PHTHALATE	380000	17000	310	0.72 U	0.69 U	**0.086 J**	**0.27 J**	0.74 U	0.74 U	0.68 U	0.82 U
CHRYSENE	--	--	77	0.72 U	**0.12 J**	0.81 U	**0.083 J**	0.74 U	0.74 U	0.68 U	0.82 U
DIBENZO(A,H)ANTHRACENE	--	--	0.7	0.72 U	0.69 U	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
FLUORANTHENE	59000	3200	1200	0.72 U	**0.17 J**	0.81 U	**0.089 J**	0.74 U	0.74 U	0.68 U	0.82 U
INDENO(1,2,3-CD)PYRENE	--	--	6.6	0.72 U	0.69 U	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
PHENANTHRENE	36000	2200	250	0.72 U	0.69 U	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
PYRENE	45000	2400	880	0.72 U	**0.14 J**	0.81 U	0.73 U	0.74 U	0.74 U	0.68 U	0.82 U
VOLATILES (MG/KG)											
2-BUTANONE	110000	16000	17	0.011 U	0.01 U	0.012 U	0.011 U	**0.004 J**	0.012 U	0.01 U	0.012 U
CARBON DISULFIDE	1500	270	5.6	0.005 U	0.005 U	0.006 U	**0.004 J**	0.006 U	0.006 U	**0.002 J**	0.006 U
ETHYLBENZENE	9200	1500	0.6	0.005 U	0.005 U	0.006 U	0.006 U	0.006 U	0.006 U	0.005 U	0.006 U
TOLUENE	60000	7500	0.5	0.005 U	0.005 U	0.006 U	0.006 U	0.006 U	0.006 U	**0.002 J**	0.006 U
TOTAL XYLENES	700	130	0.2	**0.001 J**	0.005 U	**0.001 J**	**0.002 J**	0.006 U	0.006 U	**0.012**	0.006 U
PESTICIDES/PCBS (MG/KG)											
4,4'-DDD	22	4.2	5.8	0.0014 U	0.0014 UJ	0.0016 U	**0.0018 J**	0.0015 UJ	0.0015 UJ	0.0013 U	0.0016 UJ
4,4'-DDE	15	2.9	18	0.00073 U	0.0007 UJ	0.00083 U	0.00074 U	0.00075 UJ	0.00075 UJ	**0.0055**	0.00084 UJ
4,4'-DDT	15	2.9	11	0.0014 U	0.0014 UJ	0.0016 U	0.0014 U	0.0015 UJ	0.0015 UJ	**0.0042**	0.0016 UJ
CHLORDANE	14	2.8	9.6	0.0073 U	**0.059 J**	0.0083 U	0.0074 U	0.0075 UJ	0.0075 UJ	0.0069 U	0.0084 UJ
ENDRIN KETONE	--	--	--	0.0014 U	0.0014 UJ	0.0016 U	**0.0024 J**	0.0015 UJ	0.0015 UJ	0.0013 U	0.0016 UJ

TABLE B-4
CMS DATA SET SWMUs 20 AND 21 SOIL

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	FL CTL 62-777 Industrial Soil-Direct	FL CTL 62-777 Residential Soil-Direct	FL CTL 62-777 Leachability Based GW	MPT-20-MW03S	MPT-21-MW01S			MPT-21-MW02S		MPT-21-MW03S	
SAMPLE IDENTIFICATION				20S00301	21B00104	21S00101	21S00101-D	21B00203	21S00201	21B00303	21S00301
SAMPLE DATE				5/5/1995	5/4/1995	5/4/1995	5/4/1995	5/4/1995	5/4/1995	5/4/1995	5/4/1995
METALS (MG/KG)											
ARSENIC	12	2.1	--	**1.3 J**	**0.77 J**	**0.81 J**	**0.52 J**	**0.64 J**	**0.55 J**	**0.73 J**	**0.96 J**
BARIUM	130000	120	1600	**18.5 J**	**4.2 J**	**3.9 J**	**3.3 J**	**4.6 J**	**3.9 J**	**3.1 J**	**3.5 J**
BERYLLIUM	1400	120	63	0.06 U	0.07 U	**0.07 J**	0.06 U	0.07 U	0.06 U	0.07 U	**0.09 J**
CADMIUM	1700	82	7.5	**1.6**	0.27 U	0.25 U	0.25 U	0.27 U	0.24 U	0.27 U	0.26 U
CHROMIUM	470	210	38	**17.3**	**0.66 J**	**1.7 J**	**1.7 J**	**1.8 J**	**1.5 J**	**0.57 J**	**3.9**
COBALT	42000	1700	--	0.63 U	0.70 U	0.64 U	0.64 U	0.69 U	0.63 U	0.71 U	0.66 U
COPPER	89000	150	--	**40.9**	0.93 UJ	1.3 UJ	1 UJ	2.7 UJ	2.8 UJ	1.1 UJ	2.1 UJ
LEAD	1400	400	--	**240 J**	**3.6 J**	**3.9 J**	**3 J**	**16.4 J**	**36.8 J**	0.77 UJ	0.79 UJ
NICKEL	35000	340	130	**9.6**	1.3 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U	1.2 U
SELENIUM	11000	440	5.2	0.10 U	0.11 UJ	0.10 UJ	0.10 UJ	0.11 U	0.10 U	0.11 UJ	0.11 UJ
VANADIUM	10000	67	980	**6.2 J**	**2.2 J**	**2.2 J**	**2.1 J**	**2.8 J**	**2.5 J**	**1.9 J**	**5 J**
ZINC	630000	26000	--	**137**	2.8 UJ	**5.1**	**4.2**	**13.2**	**13.6**	2.1 UJ	**2.9 J**
MISCELLANEOUS PARAMETERS											
CYANIDE (MG/KG)	11000	34	0.8	0.05 U	**0.14 J**	0.05 U	0.05 U	0.06 U	0.05 U	0.06 U	0.05 U
SEMIVOLATILES (MG/KG)											
BAP EQUIVALENT	0.7	0.1	8	0.44204	--	0.68 U	--	--	0.67 U	--	0.71 U
BENZO(A)ANTHRACENE	--	--	0.8	**0.24 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
BENZO(A)PYRENE	0.7	0.1	8	0.28 J	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
BENZO(B)FLUORANTHENE	--	--	2.4	**0.38 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
BENZO(G,H,I)PERYLENE	52000	2500	32000	**0.17 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
BENZO(K)FLUORANTHENE	--	--	24	**0.35 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
BUTYL BENZYL PHTHALATE	380000	17000	310	**0.32 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
CHRYSENE	--	--	77	**0.34 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
DIBENZO(A,H)ANTHRACENE	--	--	0.7	**0.08 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
FLUORANTHENE	59000	3200	1200	**0.56 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
INDENO(1,2,3-CD)PYRENE	--	--	6.6	**0.18 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
PHENANTHRENE	36000	2200	250	**0.16 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
PYRENE	45000	2400	880	**0.34 J**	0.75 U	0.68 U	0.69 U	0.73 U	0.67 U	0.75 U	0.71 U
VOLATILES (MG/KG)											
2-BUTANONE	110000	16000	17	0.01 U	0.012 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U
CARBON DISULFIDE	1500	270	5.6	**0.011**	0.006 U	0.005 U	0.005 U	0.006 U	0.005 U	0.006 U	0.005 U
ETHYLBENZENE	9200	1500	0.6	**0.001 J**	0.006 U	0.005 U	0.005 U	0.006 U	0.005 U	0.006 U	0.005 U
TOLUENE	60000	7500	0.5	0.005 U	0.006 U	0.005 U	0.005 U	0.006 U	0.005 U	0.006 U	0.005 U
TOTAL XYLENES	700	130	0.2	**0.018**	**0.001 J**	0.005 U	**0.001 J**	**0.003 J**	**0.005 J**	**0.001 J**	0.005 U
PESTICIDES/PCBS (MG/KG)											
4,4'-DDD	22	4.2	5.8	0.0013 U	0.0015 U	0.0013 U	0.0014 UJ	0.0014 U	0.0013 U	0.0015 U	0.0014 U
4,4'-DDE	15	2.9	18	**0.0012 J**	0.00076 U	0.00069 U	0.0007 UJ	0.00074 U	0.00068 U	0.00076 U	0.00072 U
4,4'-DDT	15	2.9	11	0.0013 U	0.0015 U	0.0013 U	0.0014 UJ	0.0014 U	0.0013 U	0.0015 U	0.0014 U
CHLORDANE	14	2.8	9.6	0.0068 U	**0.031**	**0.24**	**0.18 J**	0.0074 U	0.0068 U	0.0076 U	0.0072 U
ENDRIN KETONE	--	--	--	0.0013 U	0.0015 U	0.0013 U	0.0014 UJ	0.0014 U	0.0013 U	0.0015 U	0.0014 U

Notes:
-- = The chemical was not analyzed or no value was available.

Data Qualifiers: Blank (i.e., no qualifier) = the chemical was detected.
J = The chemical was detected but the concentration reported is an estimated value.
U = The chemical was not detected.

TABLE B-5
CMS DATA SET SWMUs 20 AND 21 GROUNDWATER

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION	**FL CTL 62-777 GW-Table I**	**MPT-52-MW01S**
SAMPLE IDENTIFICATION		**52G00101**
SAMPLE DATE		**6/3/1995**
METALS (µg/L)		
BARIUM	2000	**5.2 J**
CALCIUM	--	**98700**
IRON	300	**223**
MAGNESIUM	--	**21200**
MANGANESE	50	106
SODIUM	160000	**15000**
VANADIUM	49	**3.7 J**
MISCELLANEOUS PARAMETERS (mg/L)		
ALKALINITY	--	**266**
AMMONIA	3	**0.50**
CHLORIDE	250	**23.3**
HARDNESS	--	**341**
PHOSPHORUS (ELEMENTAL)	0.0001	0.13
SULFATE	250	**76.9**
TOTAL DISSOLVED SOLIDS	500	**440**
TOTAL KJELDAHL NITROGEN	--	**0.90**
TOTAL ORGANIC CARBON	--	**9.7**

Notes:

-- = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

J = The chemical was detected but the concentration reported is an estimated value.

U = The chemical was not detected.

TABLE B-6
CMS DATA SET SWMUs 20 AND 21 SOIL

NAVSTA MAYPORT
JACKSONVILLE, FLORIDA

LOCATION SAMPLE IDENTIFICATION SAMPLE DATE	FL CTL 62-777 Industrial Soil-Direct	FL CTL 62-777 Residential Soil-Direct	FL CTL 62-777 Leachability Based GW	MPT-52-MW01S 52B00104 5/5/1995	MPT-52-MW01S 52B00104RE 5/5/1995	MPT-52-MW01S 52S00101 5/5/1995
METALS (mg/kg)						
ARSENIC	12	2.1	--	**0.43 J**	--	**0.51 J**
BARIUM	130000	120	1600	**2.6 J**	--	**4.8 J**
BERYLLIUM	1400	120	63	**0.08 J**	--	0.06 U
CHROMIUM	470	210	38	**1.6 J**	--	**4.2**
LEAD	1400	400	--	0.76 UJ	--	**3.6 J**
VANADIUM	10000	67	980	**1.1 J**	--	**6.3 J**
ZINC	630000	26000	--	2.3 UJ	--	**5.4**
SEMIVOLATILES (mg/kg)						
BAP EQUIVALENT	0.7	0.1	8	--	--	0.48124
BENZO(A)ANTHRACENE	--	--	0.8	0.84 U	--	**0.087 J**
BENZO(A)PYRENE	0.7	0.1	8	0.84 U	--	**0.10 J**
BENZO(B)FLUORANTHENE	--	--	2.4	0.84 U	--	**0.14 J**
BENZO(G,H,I)PERYLENE	52000	2500	32000	0.84 U	--	**0.091 J**
BENZO(K)FLUORANTHENE	--	--	24	0.84 U	--	**0.10 J**
CHRYSENE	--	--	77	0.84 U	--	**0.13 J**
FLUORANTHENE	59000	3200	1200	0.84 U	--	**0.15 J**
INDENO(1,2,3-CD)PYRENE	--	--	6.6	0.84 U	--	**0.075 J**
PYRENE	45000	2400	880	0.84 U	--	**0.11 J**
VOLATILES (mg/kg)						
2-BUTANONE	110000	16000	17	**0.007 J**	--	0.01 U
TOTAL XYLENES	700	130	0.2	**0.002 J**	--	**0.008**
PESTICIDES/PCBS (mg/kg)						
4,4'-DDE	15	2.9	18	0.0048 R	**0.0014 J**	**0.38**
4,4'-DDT	15	2.9	11	0.0082 R	**0.0023 J**	**0.79**

Notes:

-- = The chemical was not analyzed or no value was available.

Data Qualifiers:

Blank (i.e., no qualifier) = the chemical was detected.

J = The chemical was detected but the concentration reported is an estimated value.

U = The chemical was not detected.

R = The chemical was rejected.