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FINAL EXPLANATION OF SIGNIFICANT DIFFERENCES FOR OPERABLE UNIT 4 (OU 4) SITE 15 PESTICIDE RINSATE DISPOSAL AREA NAS PENSACOLA FL

10/1/2015

NAVFAC SOUTHEAST

Final
Explanation of Significant Differences
Operable Unit 4, Site 15
Pesticide Rinsate Disposal Area
Naval Air Station Pensacola, Florida

INTRODUCTION AND STATEMENT OF PURPOSE

This Explanation of Significant Differences (ESD) modifies the site remedy selected in the Record of Decision (ROD) for Operable Unit (OU) 4, also known as the Site 15 — Pesticide Rinsate Disposal Area, at Naval Air Station (NAS) Pensacola, Florida, dated 24 September 2000. It does so in the following ways:

1. Changes the cleanup goal for arsenic in groundwater from 50 micrograms per liter (µg/L) to the current United States Environmental Protection Agency (U.S. EPA) promulgated Maximum Contaminant Level (MCL) of 10 µg/L;

2. Modifies the groundwater remedy to add the remedial action objective (RAO) of restoring within a reasonable timeframe, site groundwater to beneficial use as a potential drinking water source;

3. Substitutes reliance upon use of a to be developed Land Use Control (LUC) Remedial Design (LUC RD) rather than the current LUC Assurance Plan (LUCAP) and associated LUC Implementation Plan (LUCIP) to specify those contaminated soil and groundwater related LUC maintenance and oversight procedures which shall be applicable in the future to Site 15.

Although these modifications significantly change the Site 15 remedy, they do not fundamentally alter the remedy (i.e., risk reduction) specified in the ROD. The modifications will make the remedy more protective because the revised cleanup goal will be reduced from 50 µg/L to 10 µg/L, LUC maintenance and oversight procedures will be clarified, and a goal of the remedy will be to restore the groundwater to drinking water quality. Although LUCs will remain in place to prevent exposure to contaminated groundwater, the remedy for site groundwater will not be considered protective of human health and the environment in the long term until the groundwater beneath Site 15 reaches the new MCL throughout the plume.

The Navy serves as the lead agency and U.S. EPA and Florida Department of Environmental Protection (FDEP) serve as supporting agencies for hazardous substance release sites at NAS Pensacola. The cleanup is being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as modified by the Superfund Amendments and Reauthorization Act and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) pursuant to the NAS Pensacola Federal Facilities Agreement signed by the Navy, U.S. EPA, and State of Florida.

The Navy and U.S. EPA are issuing this ESD for OU 4 at NAS Pensacola consistent with the public participation requirements under Section 117(c) of CERCLA, Section 300.435(c)(2)(i) of the NCP, and the Navy Environmental Restoration Program. In accordance with Section 300.825(a)(2) of the NCP, this ESD will become part of the Administrative Record file for the facility. The Administrative Record file also contains background information that was used in determining the original remedy, as documented in the 2000 ROD and for this ESD. The Administrative Record file for NAS Pensacola is available online at: http://go.usa.gov/DyRV and is included in the Information Repository, which is available for review at:

Naval Air Station Pensacola
310 John Tower Road
Pensacola, Florida 32508
850-452-3131, ext. 3007

Hours of Availability:
Monday — Friday/8:00 am — 3:00 pm

SITE DESCRIPTION, CONTAMINANTS, AND SELECTED REMEDY

Site Description: NAS Pensacola is in the northwest portion of the Florida Panhandle, and is bordered by Bayou Grande to the north and Pensacola Bay to the south and east. Various housing, training, and support facilities are on the base. Most industrial operations were conducted in the older portion of the base, on the eastern end of the peninsula. The western end of the facility includes the active airfield (Forrest Sherman Field) and undeveloped forest land. Currently the primary mission of NAS Pensacola is to serve as a training center for student aviators, as well as to "fully support the operational and training missions of tenants assigned; enhancing the readiness of the Navy, its sister armed services, and other customers."

OU 4 is in the northern portion of NAS Pensacola (Figure 1-1) within the confines of the NAS Pensacola Golf Course (Figure 1-2). Site 15 is accessible from the west by an unpaved road and includes portions of the golf course, golf course maintenance facilities, three concrete wash-down pads, two asphalt wash-down pads, a former pesticide/drum storage building, equipment storage buildings, and several buildings. The OU is bordered by the golf course on its southern and western sides and Bayou Grande approximately 665 feet to the north.

Surface cover at OU 4 is soil and/or grass. The site is separated from the golf course by a border of oak and palm trees. Water hazards associated with the golf course are 765 feet to the northeast and 425 west from the central part of the site.

Groundwater beneath NAS Pensacola including OU 4 is currently classified by FDEP as G-II per Florida Administrative Code (F.A.C.) 62-520.410 and that according to F.A.C. 62-520.420 Standards for Class G-II, groundwater should meet the Drinking Water Standards (MCLs) in F.A.C. 62-550.310 and 320.

Depth to groundwater ranges from 10 to 15 feet below land surface, depending on precipitation, tidal influence, and ground surface elevation. Storm water management on the site is addressed through direct infiltration into the surface through sandy surficial soil (EnSafe 1997). Groundwater flow generally mimics the peninsular topography, with flow to the northwest, north, and northeast towards Bayou Grande. Groundwater is not currently used as a potable water source at OU 4 (CH2M Hill 2006). The main source of potable water for NAS Pensacola is the Navy-owned well field at the Navy Technical Training Center Corry Station, which is approximately 3 miles north of NAS Pensacola on the opposite side of Bayou Grande.

Contaminants: From 1963 to the present, fertilizer, pesticide, and herbicide products for application at the golf course have been stored and mixed at the golf course maintenance facility. Application equipment such as tractors, sprayer tanks, and spreaders were also rinsed at the facility's wash-down pads, which are northeast of Building 2692, northwest of Building 3447, and northwest of Building 3586. Before the construction of the wash racks, cleaning the equipment at the asphalt wash-down pad released diluted rinsate solutions directly onto the surrounding ground surface, where the products infiltrated the soil (Geraghty and Miller 1984).

In the past, a sink outside of Building 3586 and a floor drain in a concrete pad north of the building collected pesticide and herbicide residue wastes and discharged them into an underground storage tank (UST). The UST contents were periodically pumped out by a contracted agent. The UST was removed in 1993 and the contents of the tank spread across the ground surface approximately 200 feet north-northwest of Building 3447 (EnSafe 1999).

The Remedial Investigation/Feasibility Study (RI/FS) concluded that the impacted media and contaminants included:

- Soil — arsenic, benzo(a)pyrene equivalents, dieldrin, and chlordane (alpha and gamma)

- Groundwater — arsenic

Selected Remedy: Based on the multi-phase RI performed and reported by EnSafe in 1995, 1996, and 1997 and the Baseline Risk Assessment prepared by EnSafe in 1997 related to soil and groundwater impacts at Site 15, the Navy and U.S. EPA, with concurrence from FDEP, selected the following remedy for contaminated soil and groundwater at OU 4 in the 2000 ROD:

Soil: Excavation, Offsite Disposal and Institutional Controls. As a source control and direct human exposure prevention measure, excavate and dispose of offsite, those contaminated surface and subsurface soils posing carcinogenic risk above $1x10^{-6}$, to the hypothetical industrial worker. An Institutional Control (a type of LUC) in the form of a restriction to limit future land use to industrial purposes was to be maintained and overseen via procedures set forth in an existing base-wide LUCAP and a post-ROD developed OU 4 specific LUCIP.

Groundwater: Monitored Natural Attenuation and Institutional Controls. Groundwater contamination exceeding the then applicable arsenic cleanup standard is to be monitored to ensure that such contamination was not migrating offsite and to ensure that natural attenuation processes would be effective. Both the progress of groundwater attenuation, extent of any groundwater migration, and compliance with that performance standard would be monitored in accordance with a groundwater monitoring plan to be approved by U.S. EPA and FDEP. An institutional control in the form of a prohibition on the extraction or use of groundwater from the surficial zone of the Sand-and-Gravel Aquifer within 300 feet of identified site boundaries was imposed via procedures set forth in the aforementioned LUCAP and LUCIP.

Since the date of ROD execution, source soils have been excavated and were disposed offsite as documented in the OU4 Remedial Action Completion Report (CH2M HILL 2006). Additionally, site groundwater monitoring has been ongoing in accordance with the Groundwater Monitoring Plan (CH2M Hill 2004) and subsequent modifications to the plan, which were submitted by the Navy and approved by U.S. EPA and FDEP.

Because unrestricted use/unrestricted exposure was not achieved, the ROD noted that, consistent with Section 121(c) of CERCLA, a statutory review to assess continued protectiveness of the selected remedy would be conducted at least every five years.

BASIS FOR THE DOCUMENT

While not fundamentally altering the overall cleanup approach, the basis for executing this ESD are as follows:

- To change the cleanup goal for arsenic in groundwater to the current U.S. EPA MCL of 10 µg/L. This change is warranted because in January 2001 after the OU 4 ROD had been finalized, U.S. EPA adopted that more stringent MCL which qualifies as a federal Applicable or Relevant and Appropriate Requirement (ARAR) under CERCLA. The State of Florida likewise changed its primary drinking water standard for arsenic to 10 µg/L in January 2005.

- To add a groundwater RAO to indicate the Navy's intent to achieve site groundwater restoration in order to allow its beneficial use as a potential source of drinking water. Adopting such a goal in order to achieve protection of human health and the environment is consistent with CERCLA Section 121 threshold criteria and U.S. EPA national policy for the restoration of groundwater for beneficial reuse whenever practicable.

- To substitute reliance upon a LUC RD rather than the current LUCAP and LUCIP to establish those site-specific LUC maintenance and oversight procedures to be applicable in the future to Site 15. Making that substitution now is deemed appropriate both because of the need for this ESD to effectuate the two other above stated remedy changes and because more recent RODs effecting LUCs at other NAS Pensacola CERCLA sites have been relying upon that alternative approach.

DESCRIPTION OF SIGNIFICANT DIFFERENCES

The first significant difference being affected by this ESD is the modification of the cleanup goal for arsenic in groundwater as was reflected in Table 9-1 in the 2000 ROD. With execution of this ESD, the arsenic cleanup goal in Table 9-1 is hereby amended to change the cleanup goal from 50 µg/L to 10 µg/L. The table below replaces Table 9-1 in the ROD.

Table 9-1
Cleanup Level for Groundwater

Contaminant	Cleanup Level
Arsenic	10 µg/L

Notes:
µg/L = microgram per liter
Cleanup level is U.S. EPA MCL

Under CERCLA 121(d), remedial actions undertaken at National Priority List (NPL) sites must be protective of human health and the environment, comply with ARARs of both federal and more stringent state environmental laws and regulations unless a waiver is justified. The MCL for arsenic of 10ug/L, (which is included F.A.C. 62-550.310 Table 1 and is the same as the federal MCL promulgated at 40 CFR Part 141.62), is considered a chemical-specific ARAR and is the basis for the cleanup level for restoration of arsenic contaminated groundwater at this Site. This ESD documents the addition of this chemical-specific ARAR as well as the requirements in F.A.C. 62-520.400(1) *Minimum Criteria for Ground Water* as ARARs that the selected remedial action must attain.

Groundwater monitoring will ensure that the groundwater contamination is not migrating off site and will verify that natural attenuation processes (e.g., precipitation, adsorption, and dilution) are decreasing the concentrations of arsenic sufficiently to attain its cleanup goal within a reasonable timeframe given site specific circumstances. The Navy will evaluate the natural attenuation of arsenic by monitoring contaminant concentrations, geochemical parameters, and hydrologic parameters (i.e., hydraulic gradients) and completing statistical evaluations of the data to assess concentration trends. The evaluation of natural attenuation will be completed using the U.S. EPA guidance documents *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Volume 1 — Technical Basis for Assessment* (U.S. EPA, October 2007), *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Volume 2 — Assessment of Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium* (U.S. EPA, October 2007), and *An Approach for Evaluating the Progress of Natural Attenuation in Groundwater* (U.S. EPA, December 2011).

This modification to the arsenic cleanup goal is expected to increase the cost and time to achieve groundwater restoration. Currently only three of 14 monitoring wells (15GR03RR, 15GR65R, and 15GR66R) exceed the updated MCL for arsenic. The time frame to achieve the updated MCL is projected at 65 years. The time frame to achieve this goal may be reduced if the background concentration for arsenic in groundwater, which is currently being evaluated, is greater than the updated MCL.

The second significant difference being affected by this ESD is to modify the ROD to add an RAO of returning site groundwater to potential beneficial use as a drinking water source. That RAO will read as follows:

Restore OU 4 groundwater (classified by FDEP as G-II) to its potential beneficial use as a drinking water source throughout the plume by attaining drinking water standards (i.e., MCLs).

Groundwater restoration will generally be considered complete when well-specific monitoring data provide a scientific basis to conclude that the groundwater has met and will continue to meet cleanup levels for arsenic in the future. Monitoring of groundwater can be discontinued with concurrence of U.S. EPA and FDEP. This remedy modification in not expected to increase the cost but will increase the time needed to achieve site restoration.

The third significant difference being affected by this ESD is the requirement for the Navy to issue a LUC RD within 90 days of the issuance of the ESD for EPA and FDEP approval which contains the implementation, maintenance and oversight procedures for the LUCs and will supersede any requirements that are currently in the LUCAP and LUCIP for Site 15. The LUC objectives include the following:

- Prohibit reuse of the site for residential or residential-like uses. Residential and residential-like land use restrictions prohibit uses including, but not limited to, any form of housing, child-care facilities, any kind of school including pre-schools, elementary schools, secondary schools, playgrounds, and adult convalescent and nursing care facilities.

- Prohibit all uses of groundwater from the surficial aquifer underlying the site (including, but not limited to, human consumption, dewatering, irrigation, heating/cooling purposes, and industrial processes) without prior written approval from the U.S. EPA and FDEP.

- Maintain the integrity of any existing or future monitoring or remediation system(s).

The LUCs include updating the Base Master Plan, GIS level information and Base dig procedures on the location of the contamination and the associated use restrictions which include restrictions on use of surficial groundwater in the sand and gravel aquifer within 300 feet of Site 15 as well prohibiting residential land use and maintain the integrity of current and future monitoring wells. These LUCs will be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and unlimited exposure. The Navy is responsible for implementing, maintaining, reporting on, and enforcing the LUCs described in the ROD and this ESD in accordance with the approved LUC RD. Although the Navy may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Navy shall retain ultimate responsibility for the remedy. The Navy or any subsequent owners shall not modify, delete, or terminate any LUC without U.S. EPA and FDEP concurrence.

A recent review of documents, other ARARs, risk assumptions, and the results of previous site inspections indicate that the remedy is currently functioning as intended by the ROD. Monitoring results document that the groundwater contamination has not moved offsite. Assessment of natural attenuation continues to be conducted. The Navy will continue to monitor groundwater and perform annual reviews of the institutional controls and certify that the controls either should remain in place or be modified to reflect changing site conditions.

SUPPORT AGENCY COMMENTS

U.S. EPA and FDEP, as part of the NAS Pensacola Partnering Team, have had ongoing involvement in the decision-making process associated with the change in the cleanup goal for arsenic in the OU 4 remedy, modification of the RAO to incorporate a restoration goal, and incorporating enforceable LUC language through preparation of a LUC RD. The Navy has obtained concurrences from U.S. EPA and FDEP on these modifications to the selected remedy for OU 4, Site 15.

STATUTORY DETERMINATIONS

Remedial actions undertaken at NPL sites must meet the statutory requirements of Section 121 of CERCLA and be protective of human health and the environment, comply with ARARs of both federal and more stringent state environmental laws and regulations unless a waiver is justified, be cost-effective, and utilize to the maximum extent practicable, permanent solutions and alternative treatment or resource recovery technologies. The selected remedy will remain protective of human health and the environment and will comply with the ARARs identified in the ROD and the State of Florida regulations identified earlier in this ESD. The selected remedy of MNA does not include treatment to address the arsenic contaminated groundwater.

PUBLIC PARTICIPATION

Public participation requirements as outlined in the NCP, Section 300.435 (c)(2)(i) have been met. The notice of availability of the ESD was published in the *Pensacola News Journal* on 18 October 2015 and will be placed in the Administrative Record file in accordance with NCP 300.435 requirements.

REFERENCES

CH2M Hill. *Groundwater Monitoring Plan*, Operable Unit 4, Site 15, Naval Air Station Pensacola, Florida. 2004.

CH2M Hill. *Remedial Action Report for Operable Unit 4, Site 15*, Naval Air Station Pensacola, Florida. 2006.

EnSafe Inc. *Final Remedial Investigation Report*, Operable Unit 4 Site 15, Naval Air Station Pensacola, Florida. 1997.

EnSafe Inc. *Final Record of Decision*, Operable Unit 4, Naval Air Station Pensacola, Florida. 1999.

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Geraghty and Miller, Inc. *Verification Study, Assessment of Potential Ground-Water Pollution,* Naval Air Station, Pensacola, Florida. 1984.

United States Environmental Protection Agency. *Monitored Natural Attenuation of Inorganic Contaminants in Groundwater Water Volume 1 — Technical Basis for Assessment.* National Risk Management Research Laboratory, Office of Research and Development. EPA/600/R-07/139 October 2007.

United States Environmental Protection Agency. *Monitored Natural Attenuation of Inorganic Contaminants in Groundwater Volume 2 — Assessment of Non-Radionuclides Including Arsenic, Cadmium, Copper, Lead, Nickel, Perchlorate, and Selenium.* National Risk Management Research Laboratory, Office of Research and Development. EPA/600/R-07/140 October 2007.

United States Environmental Protection Agency. *An Approach for Evaluating the Progress of Natural Attenuation in Groundwater.* National Risk Management Research Laboratory, Office of Research and Development. December 2011.

FOR MORE INFORMATION

If you have questions or would like further information about this ESD for OU 4 at NAS Pensacola, please contact:

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DECLARATION

The issuance of this ESD for OU 4 at NAS Pensacola is approved.

United States Department of the Navy:

2 OCT 15

Keith W. Hoskins **Date**
Captain, Commanding Officer
Naval Air Station Pensacola

United States Environmental Protection Agency:

11/12/15

Franklin E. Hill **Date**
Director
Superfund Division
U.S. EPA Region 4

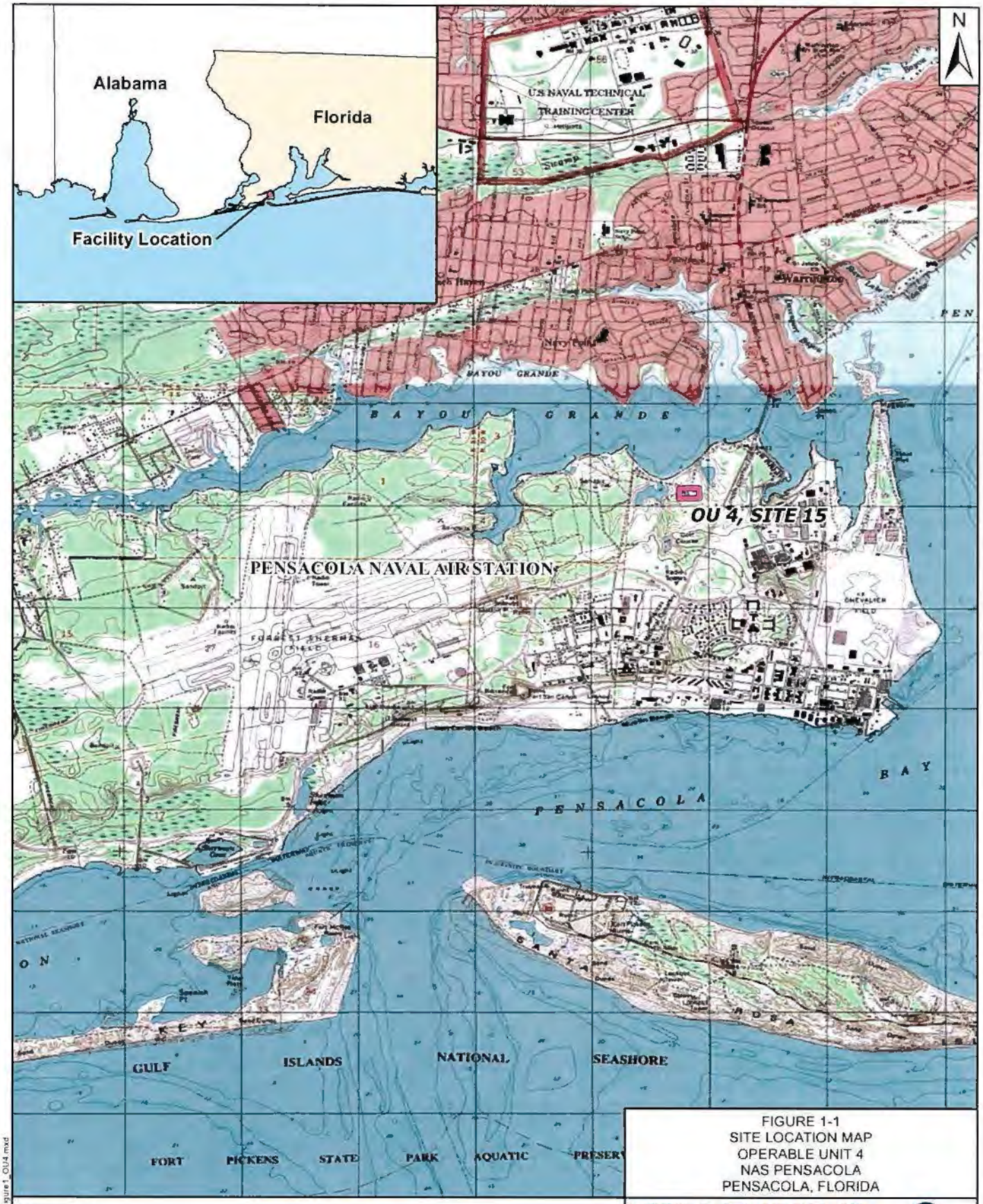

FIGURE 1-1
SITE LOCATION MAP
OPERABLE UNIT 4
NAS PENSACOLA
PENSACOLA, FLORIDA

Legend

Site Boundary

0 0.25 0.5 0.75 1 Miles

Basemap Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong) ,Esri (Thailand), TomTom, 2013, USA Topo Maps

NAVFAC Naval Facilities Engineering Command

RESOLUTION CONSULTANTS

REQUESTED BY: A. BAILEY	DATE: 5/21/2013
DRAWN BY: A. ZIMMERMAN	PROJECT NUMBER: 0888812959

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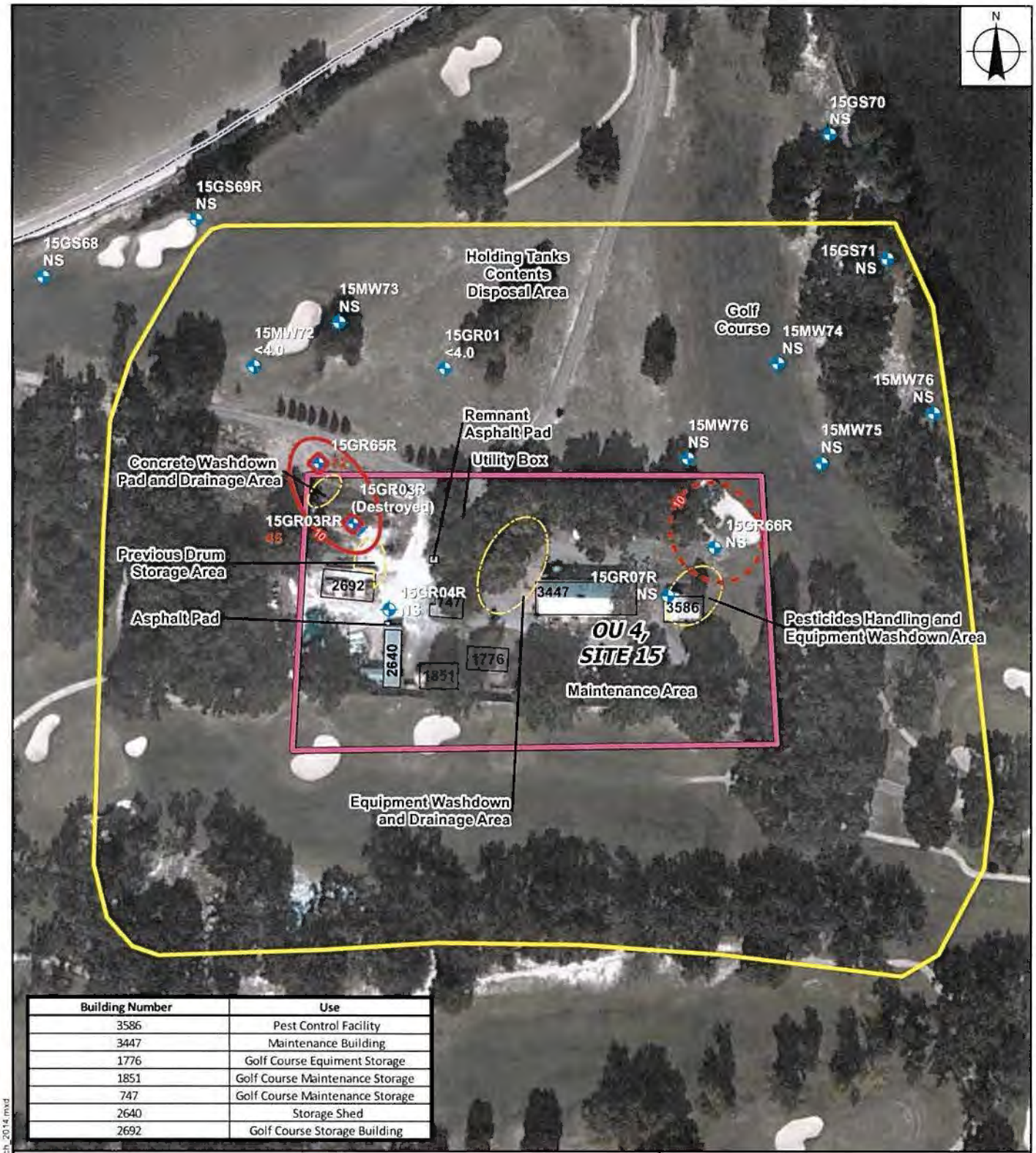

Building Number	Use
3586	Pest Control Facility
3447	Maintenance Building
1776	Golf Course Equiment Storage
1851	Golf Course Maintenance Storage
747	Golf Course Maintenance Storage
2640	Storage Shed
2692	Golf Course Storage Building

Monitoring Well
Monitoring Well (in exceedance)
EPA Arsenic MCL Contour (March 2014)
Inferred EPA Arsenic MCL Contour (March 2014)
Asphalt Pad
LUC Boundary

Site Features
Facility Boundary
OtheFeatures
Site Boundary

Notes:
CNL = Cannot Locate
NS = Not Sampled
All Concentrations in Micrograms per Liter (µg/L)
Well locations derived from Aerostar drawing and should be considered approximate

0 40 80 120 160
Feet

FIGURE 1-2
SITE MAP
OPERABLE UNIT 4
NAS PENSACOLA
PENSACOLA, FLORIDA

NAVFAC Naval Facilities Engineering Command
RESOLUTION CONSULTANTS

REQUESTED BY: P. JOBMANN	DATE: 3/23/2015
DRAWN BY: kburnum	PROJECT NUMBER: 0888812959

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