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STATEMENT OF BASIS SOLID WASTE MANAGEMENT UNIT 47 (SWMU 47) FORMER
HAZARDOUS WASTE ACCUMULATION POINT AT BUILDING S-344 MILLINGTON SUPPACT
TN
11/01/2005
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

STATEMENT OF BASIS



SWMU 47 — Former Hazardous Waste Accumulation Point at Building S-344 Naval Support Activity Mid-South Millington, Tennessee



Purpose of the Statement of Basis

This Statement of Basis (SB) has been prepared to inform the public and provide an opportunity to comment on a proposed remedy at solid waste management unit (SWMU) 47 — Former Hazardous Waste Accumulation Point at Building S-344 at Naval Support Activity (NSA) Mid-South, Millington, Tennessee. NSA Mid-South is responsible for corrective action at SWMU 47, as required by a Resource Conservation and Recovery Act (RCRA) permit. The Tennessee Department of Environment and Conservation (TDEC) has determined that the proposed remedy of No Further Action is protective of human health and the environment.

Before the remedy is finalized, TDEC would like to give the public an opportunity to comment

on the proposed remedy. At any time during the comment period, the public may comment as described in the following section "How Can You Participate?" Upon closure of the public comment period, TDEC will evaluate all comments and determine if there is a need to modify the proposed remedy.

Site Description

Located on the south side of Building S-344, SWMU 47 (Figure 1) is a concrete pad area that joins a concrete wash rack and abuts Building S-344. The area south of the concrete is a grass field extending approximately 50 feet to the north bank of a tributary (SWMU 38) of Big Creek Drainage Canal. SWMU 47 reportedly stored mineral spirits, waste oil, and hydraulic fluid from 1983 to 1992. No visual evidence of a release was identified during a 1990 inspection.

How Can You Participate?

TDEC solicits public review and comment on this SB prior to implementation of the proposed



Figure 1 SWMU 47 at NSA Mid-South in Millington, Tennessee

remedy as the final one. The final remedy for SWMU 47 — Former Hazardous Waste Accumulation Point at Building S-344 will be incorporated in the Hazardous and Solid Waste Amendments Permit TNHW-094 for NSA Mid-South, scheduled to be updated in 2006. Public comment on this SB and the proposed remedy will begin on the date that a notice of the SB's availability is published in *The Millington Star* and *The Commercial Appeal*, local daily newspapers. Since community input could affect selection of a final remedy for SWMU 47, a public comment period has been established for 45 days from *(insert date)*. If requested during the comment period, TDEC will hold a public meeting to respond to any oral comments or questions regarding the proposed remedy. To request a hearing or to provide comments, contact the following person in writing within the 45-day comment period:



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Investigative reports and documents related to SWMU 47 are referenced at the end of this SB and are included in the Administrative Record, which can be reviewed in the Information Repository that was established to provide public access to documents pertaining to the Navy's environmental program. The Information Repository is maintained at:

Millington Public Library
4858 Navy Road
Millington, Tennessee 38053
(901) 872-1585

Background Summary

Past operations at the former Naval Air Station (NAS) Memphis included metal plating, manufacturing, and other operations that involved the use of toxic and hazardous materials. Land use changed as a result of the 1990 Base Closure and Realignment (BRAC) Act, and the name of the facility was changed from NAS Memphis to NSA Mid-South.

A significant portion of NSA Mid-South's Northside was transferred to the City of Millington, and the remaining property was realigned (i.e., an operation was reassigned from NSA Mid-South to another facility, and/or an operation from another facility was reassigned to NSA Mid-South). Three facility operations changed: (1) Navy airfield operations ceased in October 1995, (2) training operations were realigned to NAS Pensacola in 1996, and (3) administrative operations for the Navy Bureau of Personnel were realigned from

Washington, D.C., to NSA Mid-South in 1997. SWMU 47 is part of the remaining NSA Mid-South property. The area identified as SWMU 47 is a concrete pad area that abuts the south side of Building S-344 and joins a concrete wash rack, a former hazardous waste accumulation point. Between 1983 and 1992, SWMU 47 reportedly stored mineral spirits, waste oil, and hydraulic fluid. However, no visual evidence of a release was identified during a 1990 inspection (ERC/EDGe, 1990).

As required by the Navy's RCRA Permit, NSA Mid-South is required to evaluate and assess all SWMUs for potential environmental impacts. Due to the former operations at the site, SWMU 47 was designated as a site warranting further evaluation to determine its potential risk to human health and the environment. Previous investigations at SWMU 47 include the *RCRA Facility Assessment* (RFA; ERC/EDGe, 1990) and a *Confirmatory Sampling Investigation* (CSI; EnSafe, 2000), from which the subsequent *Voluntary Corrective Action Report* (VCA; EnSafe, 2001) was produced and describes the removal of petroleum-contaminated soil at SWMU 47. Analytical results from the CSI and VCA resulted in a "No Further Action" remedy. The basis for the remedy selection is provided under the "Summary of Contaminant Evaluation" and "Summary of Site Risk" sections of this SB.

Summary of Contaminant Evaluation

The primary objective of the CSI was to determine whether a release had occurred at SWMU 47. During the CSI, a soil investigation was conducted at the site. Groundwater was assessed using direct-push technology sampling equipment. Soil samples were collected, via the hand-auger method, in and around the former hazardous waste accumulation area, as shown on Figure 2 (Attachment 1).



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Soil samples were collected from the surface (0 to 1 foot) interval and from the subsurface (3 to 4 feet depth) interval. Two surface samples, collected from the most visibly stained area underwent full-scan analysis for risk assessment purposes; the remaining samples were analyzed for volatile organic compounds, semi-volatile organic compounds, Appendix IX metals, and total petroleum hydrocarbons (TPH). To assess groundwater, two samples were collected from the deep alluvium (approximately 50 feet below ground surface). The samples were analyzed for volatile organic compounds, an indicator analysis of petroleum constituents and solvents. Both soil and groundwater sample locations are shown on Figure 2 (Attachment 1) and a summary of investigation findings is provided below.

Soil

Eight soil samples were collected from five hand-auger locations. Contaminant concentrations were compared to the U.S. Environmental Protection Agency's (USEPA) residential risk-based screening criterion (RBCs) and site background reference concentrations, where applicable. Because no RBC values exist for TPH, TDEC soil cleanup values were used for comparison.

Thirteen metals were detected in surface soil at SWMU 47. Of these, none exceeded risk-based screening criterion; therefore, none were considered contaminants of concern.

Dieldrin was the only pesticide detected (in sample 047X000201 at a concentration of 420 parts per billion [ppb]) at a concentration that was above its residential RBC (40 ppb), industrial RBC (360 ppb), and RC of 262 ppb. Based on this exceedance, dieldrin was the only carcinogen identified as a contaminant of potential concern and was evaluated for risk during the CSI.

TPH was detected in all but one soil sample. Two surface soil samples contained TPH at concentrations exceeding the most conservative TDEC soil-cleanup value of 100 ppm. Those samples and their TPH concentration levels were sample 047X000201 at 320 parts per million (ppm) and sample 047000601 at 340 ppm. Based on these detections, the CSI recommended that the TPH-contaminated soil be removed. Details of the soil removal are provided under the "Removal Actions" section of this SB.

Groundwater

No contaminants were detected in the two groundwater samples collected at SWMU 47.

Summary of Site Risk

As part of the CSI, risks to human health and the environment from the contaminants identified at SWMU 47 were evaluated using human health and ecological risk assessments, which were developed in accordance with existing USEPA and TDEC methods.

No risks were identified based on TPH because the risk evaluation methods were based on individual chemicals only, and TPH includes multiple chemicals. However, TPH was identified as a concern based on TDEC's most conservative cleanup value of 100 ppm (EnSafe, 2000). The overall recommendation of the CSI was to remove TPH-contaminated soil to within TDEC-acceptable levels.

Human Health Risk

Dieldrin was identified as a contaminant of potential concern during the CSI. It was the only parameter that required additional risk evaluation beyond a comparison to RBCs. Based on this evaluation, residential and industrial excess cancer risks for dieldrin were both below USEPA's upper bound acceptable risk range. No contaminants were detected in groundwater samples taken at SWMU 47.



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Ecological Risk

Since a quantitative ecological risk assessment was not completed as part of the CSI and habitat could be present near SWMU 47, a screening level ecological risk assessment (SLERA) was completed to assess potential ecological receptors and to help clarify the decision-making process for SWMU 47 (EnSafe, 2005). The SLERA was conducted by comparing contaminant concentrations to the largest food-chain-derived values for mammals and birds. The SLERA screening comparisons found there are no unacceptable ecological risks associated with SWMU 47.

Removal Actions

Based on the CSI recommendation, soil was excavated to dimensions of 5 feet squared and a depth of 2 feet below grade to remove petroleum-contaminated soil. The excavated soil was not visibly stained and had no petroleum odor. Following excavation, composite confirmation soil samples were collected from the excavation bottom and side walls. All confirmation TPH results were less than the most conservative TDEC cleanup standard of 100 ppm. Selected metals (arsenic, cadmium, chromium, copper, and lead), also analyzed during the removal confirmation, were less than their applicable action levels.

Results of the removal actions were forwarded to the USEPA and TDEC on June 29, 2001, in a Voluntary Corrective Action Report. Included in the report was a recommendation of No Further Action (EnSafe, 2001). Based on this report, TDEC approved the No Further Action request on August 24, 2001.

Selected Remedy for SWMU 47

Since TDEC's goals for human health and ecological risks have been met, no alternative remedies were evaluated. The Navy's proposed remedy of No Further Action is considered protective of human health and the

environment. The remedy meets the four general standards of corrective measures, which are:

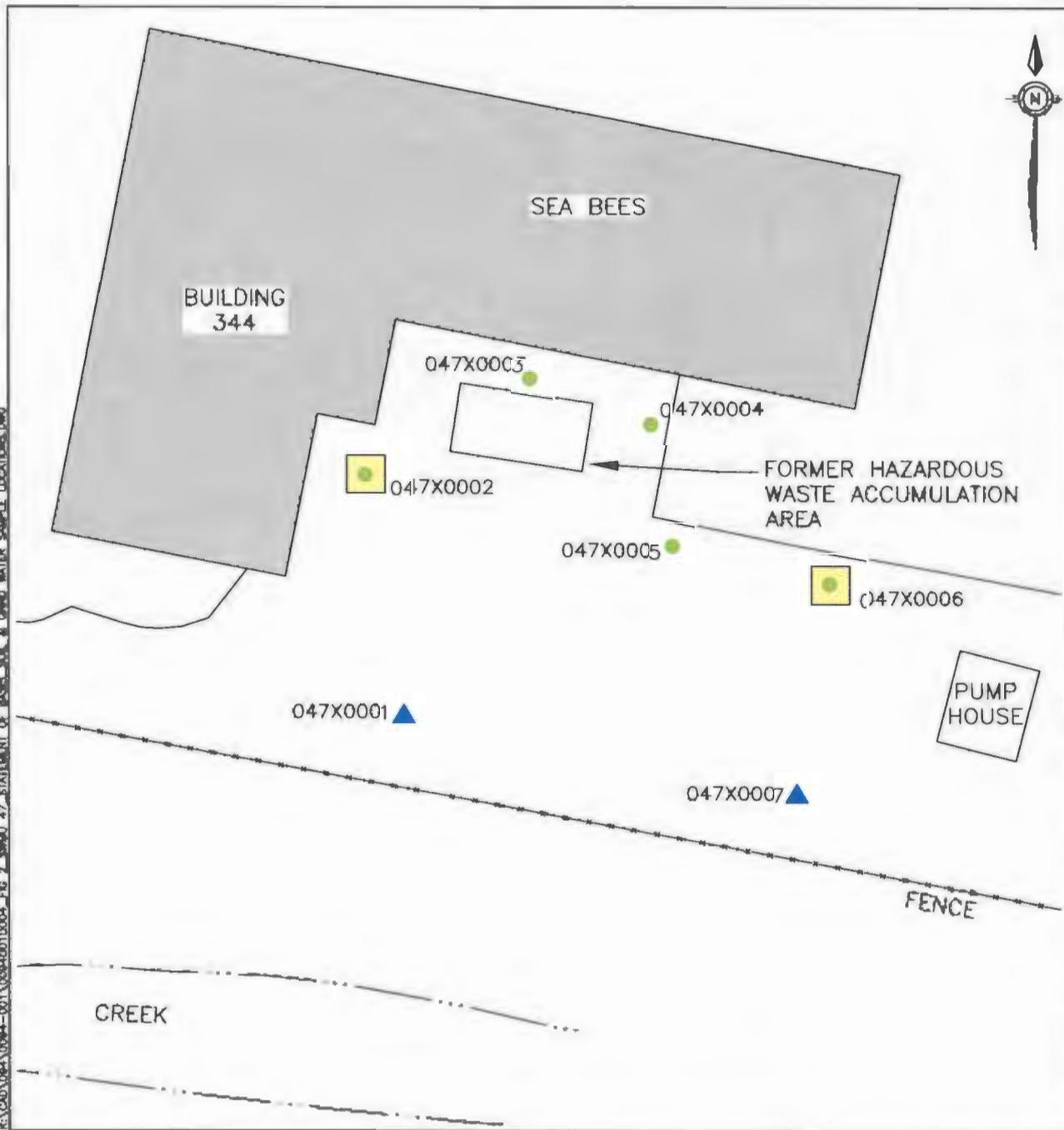
- Overall protection of human health and the environment
- Attainment of media cleanup standards
- Controlling the sources of release
- Compliance with standards for management

There are no site-related contaminants that would pose an excessive risk to an unrestricted reuse of the property or warrant implementation of institutional controls.

References

- EnSafe Inc. (2000, April 28). *Confirmatory Sampling Investigation Report, Assemblies G and H, Naval Support Activity Mid-South, SWMUs 23, 24, 41, 43, 47, 48, 49, and 61. Revision 2.* Memphis, Tennessee.
- EnSafe Inc. (2001, June 29). *Voluntary Corrective Action Report, RCRA Facility Investigation, Naval Support Activity Mid-South, Petroleum-Contaminated Soil Removal Buildings S-362/SWMU 65, S-235, S3-94, N-114/SWMU 24, N-1211, N-105, N-108, S-203, SWMU 41, SWMU 43, SWMU 47, SWMU 48, and SWMU 49.* Revision 1. Memphis, Tennessee.
- EnSafe Inc. (2001, November). *Assemblies G and H RCRA Facility Investigation Report, Naval Support Activity Mid-South.* Revision 1. Memphis, Tennessee.
- EnSafe Inc. (2005, November 4). *Supplementary Screening Level Ecological Risk Assessment SWMU 47 — Former Hazardous Waste Accumulation Point at Building S-344 NSA Mid-South.* Memphis, Tennessee.
- ERC/EDGE. (1990). *RCRA Facility Assessment, NAS Memphis.* Nashville, Tennessee.

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- LEGEND**
- ▲ -- GROUNDWATER SAMPLE LOCATION
 - -- HAND AUGER SOIL SAMPLE LOCATION
 - -- EXCAVATION AREA
 - -- AREA OF INVESTIGATION
 - -- NSA MID-SOUTH BOUNDARY
 - ▭ -- BUILDING

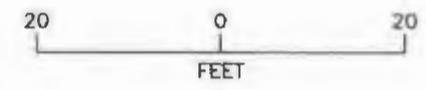


FIGURE 2
 SWMU 47 STATEMENT OF BASIS
 SOIL AND GROUNDWATER
 SAMPLE LOCATIONS