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STATEMENT OF BASIS SOLID WASTE MANAGEMENT UNIT 61 (SWMU 61) FORMER  
PRINTING SHOP AT BUILDING N-26 MILLINGTON SUPPACT TN  
11/01/2005  
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

STATEMENT OF BASIS



SWMU 61 — Former Printing Shop at Building N-26  
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) 61 — Former Print Shop at Building N-26 at Naval Support Activity (NSA) Mid-South, Millington, Tennessee. NSA Mid-South is responsible for corrective action at SWMU 61, 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**  
SWMU 61 (Figure 1), was approximately 250 feet east of Helena Avenue (formerly 8<sup>th</sup> Ave.), adjacent to the east side of former Building N-26 on the NSA Mid-South's Northside. SWMU 61 was a concrete pad area reportedly used as a cleaning area for printing equipment from Building N-26, which was demolished in July 1997. The sides of the pad sloped toward two central drains that discharged into the sewer. During a 1990 inspection, stains were observed surrounding SWMU 61.



Figure 1 SWMU 61 at NSA Mid-South in Millington, Tennessee

SWMU 61 — Former Print Shop at Building N-26 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 61, 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:

**How Can You Participate?**

TDEC solicits public review and comment on this SB prior to implementation of the proposed remedy as the final one. The final remedy for



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Investigative reports and documents related to SWMU 61 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 Naval Support Activity (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 61 is part of the remaining NSA Mid-South property. Building N-26 (demolished in 1997) was formerly used as a printing shop and stored printing inks that may have contained solvents and heavy metals such as cadmium, chromium, and lead. The exact time range of this cleaning operation is not known, but it is estimated to be several years in the early 1980s. During a 1990 inspection, stains were observed surrounding SWMU 61.

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 61 was designated as a site warranting further evaluation to determine its potential risk to human health and the environment. Previous investigations at SWMU 61 include the *RCRA Facility Assessment* (RFA; ERC/EDGE, 1990) and the *Confirmatory Sampling Investigation* (CSI; EnSafe, 2000). Due to elevated petroleum hydrocarbon concentrations in surface soil, a removal action was subsequently conducted in July 1997. Because the contaminated soil was removed, analytical results from the CSI 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 to soil had occurred at SWMU 61. The soil investigation consisted of both surface (0-1 foot depth) and subsurface (3-4 foot depth) intervals. Environmental samples collected from soil as part of the CSI were analyzed for inorganic constituents (metals and cyanide), volatile organic compounds,



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semi-volatile organic compounds, pesticides/polychlorinated biphenyls, and total petroleum hydrocarbons (TPH). A summary of major findings is provided below.

**Soil**

Eleven soil samples were collected from 6 locations (6 from the surface and 5 from the subsurface) in and around the former printing shop, as shown on Figure 2 (Attachment 1). Contaminant concentrations were compared to the United States Environmental Protection Agency’s (USEPA’s) risk-based screening concentrations and site background reference concentrations, where applicable. Because no risk-based screening criteria values exist for TPH, TDEC soil cleanup values were used for comparison.

Only one metal was detected above the risk-based screening concentration and background reference concentration: lead exceeded both its background reference concentration (26 parts per million [ppm]) and USEPA’s soil cleanup value of 400 ppm in surface sample 061S0002.

Benzo(a)pyrene (a semi-volatile organic compound that is typically found in asphalts and fuels) was the only detected organic contaminant that exceeded its residential risk-based screening concentration (88 parts per billion [ppb]) in four surface samples, as shown in Table 1.

**Table 1**  
**Benzo(a)pyrene Soil Detections**

Sample ID	Depth	Concentration (ppb)	Residential RBC (ppb)	Industrial RBC (ppb)
061S0001	1'	370	88	780
061S0002	1'	160	88	780
061S0003	1'	110	88	780
061S0005	1'	190	88	780

RBC = Risk-Based Concentration

TPH was detected at surface sample location 061S0001 at a concentration of 3,600 ppm,

which exceeded the most conservative TDEC soil cleanup value of 100 ppm. Based on these exceedances, 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**

Since soil contaminants were limited primarily to surface soil and they were removed as part of the TPH removal action, the potential leaching concern to groundwater was eliminated. Therefore, no groundwater monitoring was conducted during the CSI.

**Summary of Site Risk**

As part of the CSI, risks to human health and the environment from the contaminants identified at SWMU 61 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**

Risk assessments use estimated intake as part of the calculations. Intake is affected by the land-use scenarios, where one scenario may account for lifetime exposure to groundwater and soil, and another scenario may only include occasional exposure to soil with no groundwater exposure. Human health risk at SWMU 61 was assessed using three scenarios: site worker, child trespasser, and future site resident.



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- **Soil**

Polycyclic aromatic compounds (typical components of asphalts, fuels, oils, and greases) and lead were the only compounds requiring evaluation and comparison to risk-based screening values. This evaluation did not identify any chemicals of concern and concluded that soil poses no risk under the three scenarios. However, the CSI recommended that TPH-contaminated soil be removed to within TDEC-approved levels. Following this removal action, the property was considered suitable for unrestricted land use (EnSafe, 2000).

- **Groundwater**

As discussed above, no groundwater samples were collected at SWMU 61.

### ***Ecological Risk***

During the CSI, no complete exposure pathway was identified because there was a lack of ecological receptors; the immediate vicinity of the contamination was gravel-covered, with no quality habitat available. Based on the 1997 removal action (described below), site TPH contamination was removed, and Building N-26 was demolished. The limited data that were available were collected from locations that were removed in 1997. Therefore, both the contamination and the sample locations no longer exist. Because no ecological exposure pathways exist, there is no risk to potential receptors.

### **Removal Actions**

During the CSI, elevated concentrations of TPH detected in the surface soil at SWMU 61 necessitated a subsequent soil removal action in 1997. In July 1997, approximately 18 mncubic yards of soil were excavated to about 2 feet deep. Excavation areas are shown on Figure 2 (Attachment 1). All

petroleum-impacted soils were removed to within TDEC-acceptable levels.

Results of the removal action were forwarded in the CSI to the USEPA and TDEC on April 28, 2000. Included in the report was a recommendation for No Further Action (EnSafe, 2000). Based on this report, regulatory approval of the No Further Action request was received from TDEC on May 19, 2000, and from USEPA on June 8, 2000.

### **Selected Remedy for SWMU 61**

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 and
- Compliance with standards for management.

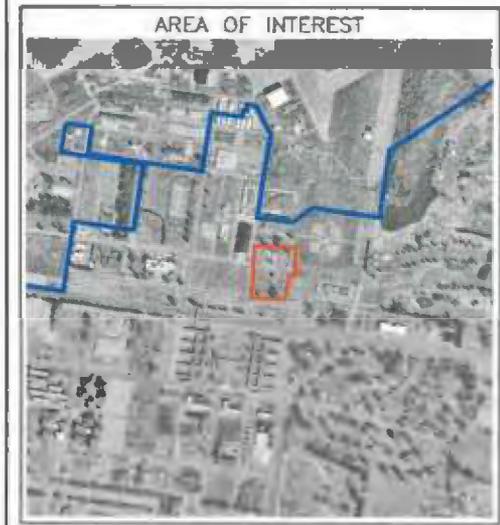
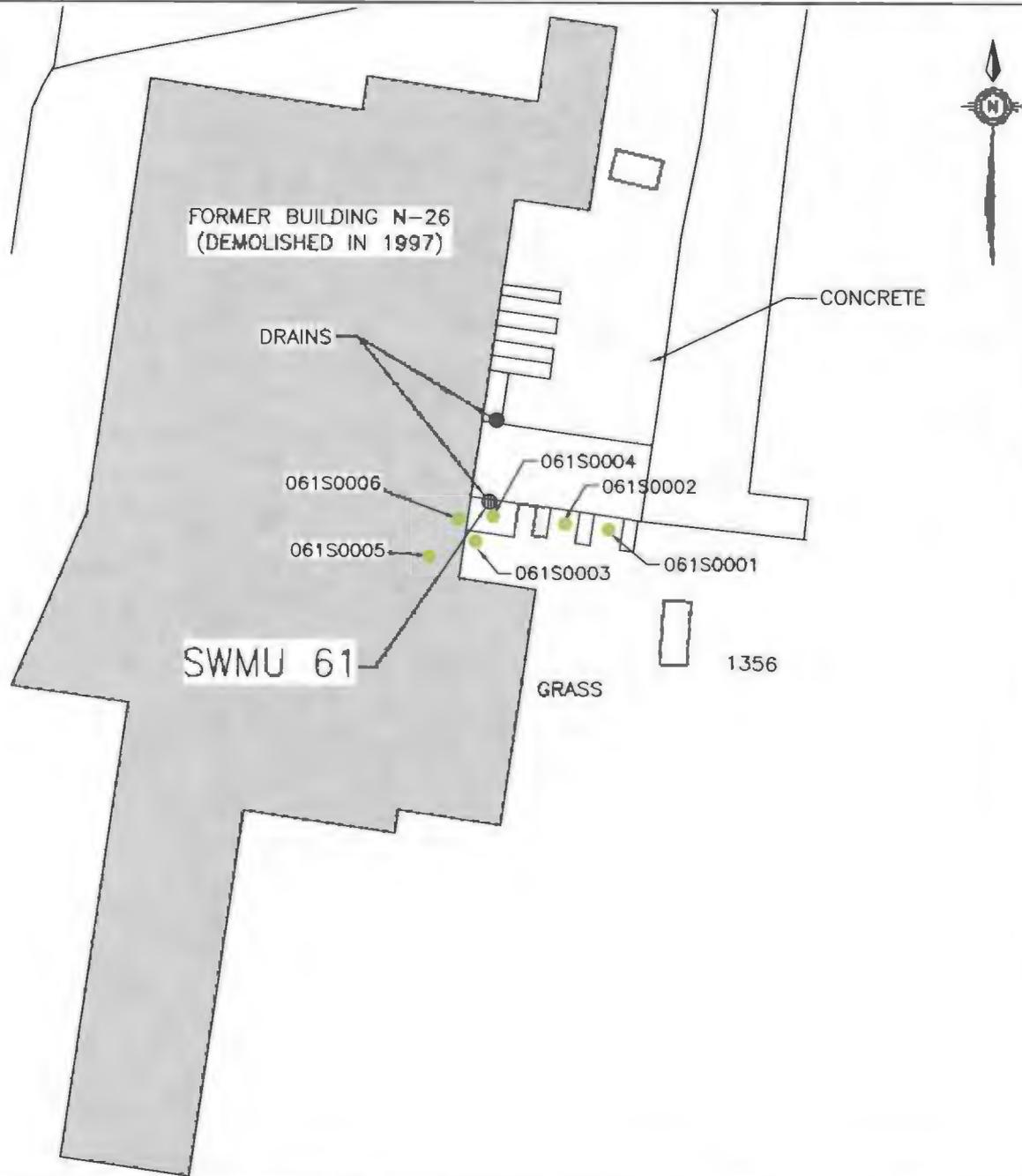
There are no site-related contaminants that would pose an excessive risk to an unrestricted reuse of the property or warrant implementation of institutional controls.

### **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.
- ERC/EDGe. (1990, September). *RCRA Facility Assessment (RFA), NAS Memphis*. Nashville, Tennessee.

**Attachment 1**  
**Figure**

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- LEGEND**
- - SOIL SAMPLE LOCATION
  - - NSA MID-SOUTH BOUNDARY
  - - AREA OF INVESTIGATION
  - - BUILDING

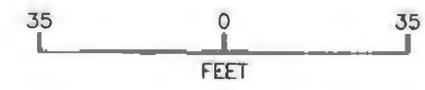


FIGURE 2  
SWMU 61 STATEMENT OF BASIS  
SOIL SAMPLE LOCATIONS