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STATEMENT OF BASIS SOLID WASTE MANAGEMENT UNIT 45 (SWMU 45) HAZARDOUS WASTE ACCUMULATION POINT S-142 MILLINGTON SUPPACT TN

12/01/2005

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

STATEMENT OF BASIS

SWMU 45 – Hazardous Waste Accumulation Point S-142
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) 45 — Hazardous Waste Accumulation Point, at Naval Support Activity (NSA) Mid-South, Millington, Tennessee. NSA Mid-South is responsible for corrective action at SWMU 45, 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.

Site Description

Located approximately 50 feet north of the former brig (Building S-143), SWMU 45 (Figure 1) is the site of a former 12-square-foot building used as an accumulation point for drummed paint waste generated by prisoners at the brig from 1983 to 1989. Paint solvents, strippers, mineral spirits, and other paint-related chemicals are believed to have been stored there. The building and its slab have since been demolished.

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.

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 SWMU 45 will be incorporated into the Hazardous and Solid Waste Amendments Permit TNHW-094 for NSA Mid-South, scheduled to be updated in 2006.

Figure 1 SWMU 45 at NSA Mid-South in Millington, Tennessee

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 45, 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:

Mr. Roger Donovan
TDEC — Division of Solid Waste Management
5th Floor, L&C Annex
401 Church Street
Nashville, TN 37243-1538
Telephone: (615) 532-0864
E-mail: roger.donovan@state.tn.us

Investigative reports and documents related to SWMU 45 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 Civic Center
8077 Wilkinsville Road
Millington, Tennessee 38053
(901) 873-5770

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, including SWMU 45, 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.

Visual site inspections conducted in 1983, 1987, and 1989 did not indicate any signs of a release (ERC/EDGe, 1990). However, dried paint observed on the ground and inside the building pad by a 1990 Navy inspection prompted the designation of the site as a SWMU (Navy, 1990). As required by the Navy's RCRA Permit, NSA Mid-South is required to evaluate and assess all SWMUs for potential environmental impacts. Therefore, SWMU 45 was designated as a site warranting further evaluation to determine its potential risk to human health and the environment.

A subsequent Interim Measures (IM) investigation and removal were completed in 1994 (EnSafe/Allen&Hoshall, 1995) and resulted in the recommendation of No Further Action. The basis for the remedy selection is provided under the "Summary of Contaminant Evaluation" and "Summary of Site Risk" sections of the SB.

Summary of Contaminant Evaluation

As part of the IM investigation, five soil samples were initially collected from three locations (sample locations 045S0001, 045S0002, and 045S0004) beneath and beside the former building slab, as shown on Figure 2 (Attachment 1). Upon discovery of paint beneath the pad, a backhoe was used to remove the pad, at which point a second pad was discovered. Upon removal of the second pad, a petroleum odor and grey staining were noted in the excavation. Subsequent interviews with Navy personnel found that an oil-water separator from the aircraft firefighting training area had previously backed up a mixture of JP-5 fuel and water into the sanitary sewer and overflowed through a manhole approximately 30 feet northeast of the site (see Figure 2, Attachment 1).

The IM investigation evolved to assess potential petroleum impacts to soil and groundwater through collection and analysis of 24 soil samples and 20 groundwater samples. Soil and groundwater samples were analyzed in the field using a portable gas chromatograph/flame ionization detector for total volatile organic compounds (VOCs) in addition to benzene, toluene, ethyl benzene, and xylenes. Soil samples

were collected from 16 different locations and multiple depth intervals at locations SS-01 through SS-18 (see Figure 2, Attachment 1). Groundwater samples were collected from the two groundwater units: (1) 16 samples were collected from the clay and silt loess deposits (GW-01 through GW-17), at depths ranging between 9 and 15 feet below land surface groundwater units; and (2) 4 samples were collected from the fluvial sand and gravel unit (45GH07 through 45GH10), at depths between 37 and 42 feet.

Soil

The IM investigation identified xylenes and toluene in subsurface soil at two locations (SS-02 and SS-09) however, comparison to the USEPA's risk-based concentration (RBC) screening values indicated they were below the screening thresholds. The only contaminant that exceeded the USEPA's risk-based screening criteria was benzo(a)pyrene, which was detected in two of surface soil samples, above the residential (88 parts per billion [ppb]) but below the industrial (390 ppb) RBC. The maximum benzo(a)pyrene detection was identified at location 0451S0003 where 210 ppb were detected (EnSafe/Allen & Hoshall, 1995).

Groundwater

The only contaminants identified in the site's groundwater were xylenes, which were isolated to two locations in the shallow loess groundwater, one of which exceeded the USEPA's RBC screening criteria for groundwater. Location GW-02 contained 404 ppb, above the 210 ppb tap water RBC. The four groundwater samples collected from the deeper fluvial deposits groundwater contained no VOCs (EnSafe/Allen & Hoshall, 1995).

A comparison of the maximum xylenes detected in groundwater with the USEPA's target groundwater concentration (22,000 ppb) that would correspond to potential indoor air quality concern (USEPA, 2005) indicates that the detected xylenes would not pose a potential indoor air quality risk to future occupants of the site.

Removal Action

Approximately 20 cubic yards of petroleum-contaminated soil and concrete debris were removed from the site and confirmation samples collected from the base of the excavation found that total petroleum hydrocarbon (TPH) concentrations were below TDEC's most stringent 100 parts per million (ppm) cleanup criteria for TPH in soil. Due to the low concentrations of petroleum constituents in soil and loess groundwater, and the absence of groundwater contaminants in the fluvial deposits groundwater, the IM report recommended no further action (EnSafe/Allen & Hoshall, 1995).

Summary of Site Risk

As part of the IM, risks to human health at SWMU 45 were evaluated using human health risk assessment methods developed in accordance with existing USEPA and TDEC methods.

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. To assess human health risk at SWMU 45, data from the IM were used to evaluate risks using future residential and industrial land-use scenarios. Conclusions regarding potential site risk under the land-use scenarios are discussed below:

- ***Soil***
  A single contaminant — benzo(a)pyrene, was identified above the residential RBC screening value but below the industrial screening value. However, the aggregate risk associated with site soil is within USEPA's acceptable risk range for a residential or industrial reuse of the site (EnSafe/Allen & Hoshall, 1995).

- ***Groundwater***
  Groundwater was not evaluated in the risk evaluation due to the absence of contaminants in the fluvial deposits groundwater. While xylenes were detected in the shallow groundwater at a single location above the USEPA's groundwater screening criteria, the loess groundwater is considered a non-drinking water source due to the lack of yield and the naturally occurring metals (EnSafe/Allen & Hoshall, 1995).

Ecological Risk

An ecological risk assessment was not completed as part of the IM. The 12-foot by 12-foot SWMU has been removed and the predominance of buildings, sidewalks, parking lots, and limited grassy areas, would provide a limited habitat for ecological receptors.

Selected Remedy

The IM report recommended no further action since the removal action addressed the petroleum constituents beneath the former building slab and impacts to the deeper fluvial deposits groundwater were absent (EnSafe/Allen & Hoshall, 1995). The IM report was approved by USEPA and TDEC and USEPA in January and February of 1996.

Since TDEC's goals for human health and ecological risks have been met, no alternative remedies were evaluated. The Navy's proposed remedy 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 a risk to an unrestricted reuse of the property or warrant implementation of institutional controls.

References

EnSafe/Allen & Hoshall (1995, August 23). *Interim Measures Technical Memorandum; SWMU 45 — S-142 Hazardous Waste Accumulation Point; Naval Air Station Memphis; Millington, Tennessee., Memphis*, Tennessee.

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

U.S. Environmental Protection Agency. (1994). *Risk-Based Concentration Table*. USEPA Region 3.

U.S. Environmental Protection Agency. (1996, October). *Drinking Water Regulations and Health Advisories.* Office of Water: Washington, D.C.

U.S. Environmental Protection Agency. (2005). *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. November, 2002 and updates. EPA530-D-02-004. Retrieved September 2005 from http://www.epa.gov/epaoswer/hazwaste/ca/eis/vapor.htm.

Attachment 1
Figures

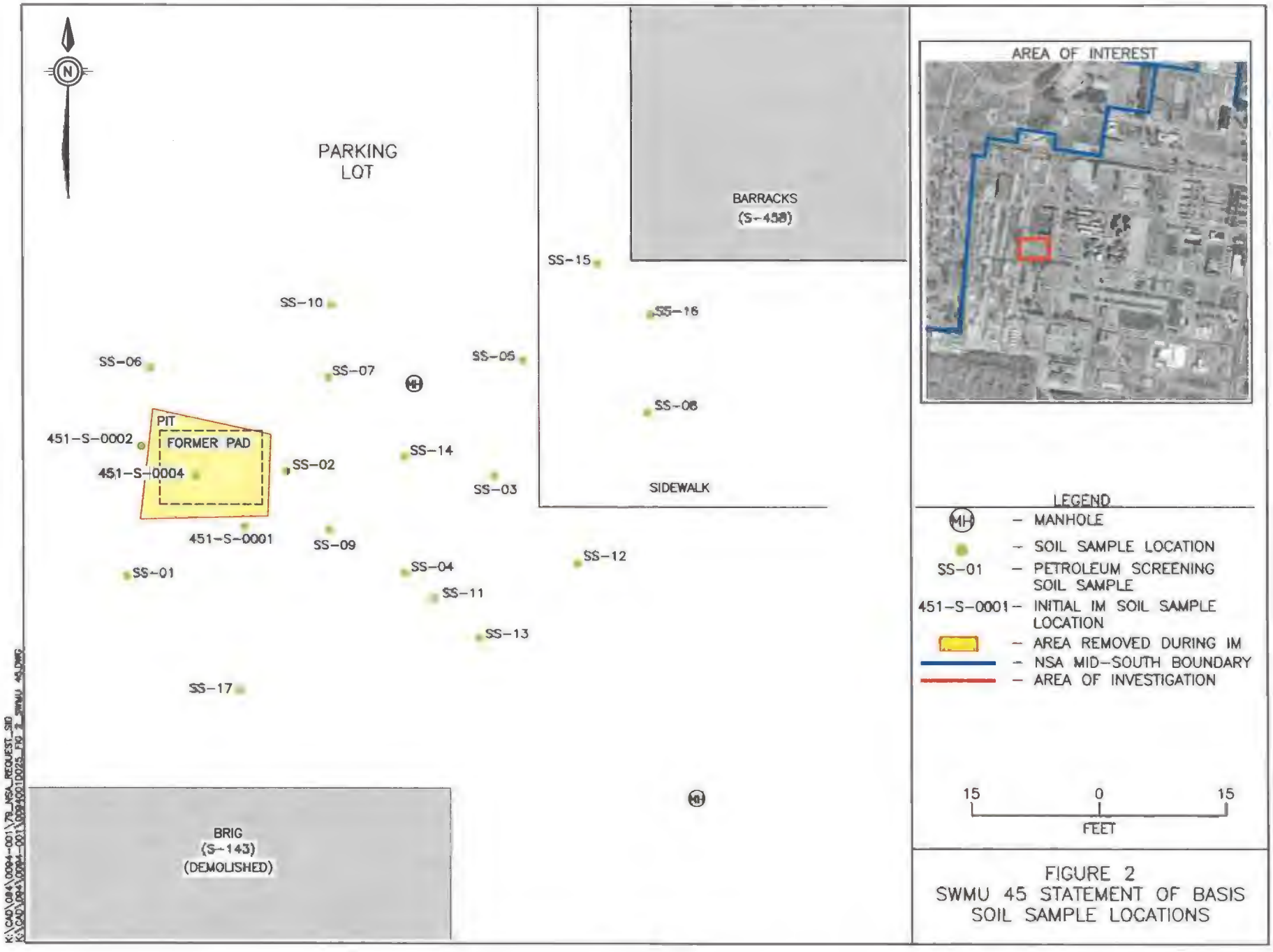

FIGURE 2
SWMU 45 STATEMENT OF BASIS
SOIL SAMPLE LOCATIONS

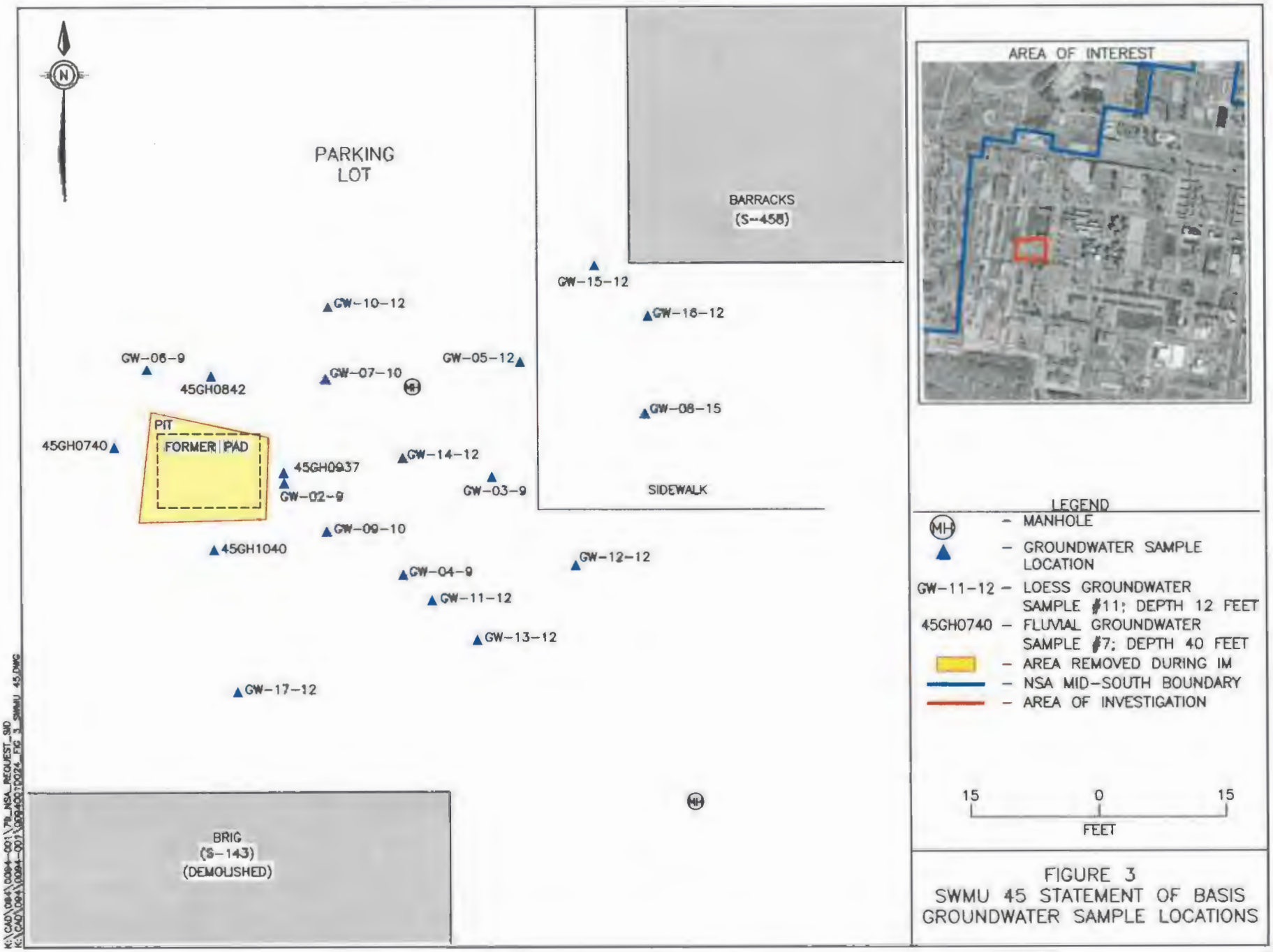

FIGURE 3
SWMU 45 STATEMENT OF BASIS
GROUNDWATER SAMPLE LOCATIONS