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LETTER REPORT REGARDING SITE SPECIFIC VARIANCE FOR CLEANUP LEVELS
FACILITY ID 0-791709 REGULATED TANKS 1, 303, AND 1241 AND NON-REGULATED
TANKS 304 AND 1239 AT MILLINGTON SUPPACT TN
4/3/1995
ENSAFE, INC

077

April 3, 1995

Mr. Don Dills, Commissioner
 Tennessee Department of Environment and Conservation
 21st Floor, L&C Tower
 401 Church Street
 Nashville, Tennessee 37243-0435

Re: Site Specific Variance for Cleanup Levels
 Facility I.D. 0-791709 — Regulated tanks 7, 303, and 1241
 and Non-regulated tanks 304 & 1239
 NAS Memphis, Millington, Tennessee

Dear Mr. Dills:

Through cover of this letter, the Navy is requesting a site specific variance for the cleanup level of total petroleum hydrocarbons (TPH) in groundwater from the "drinking water" standard of 0.10 parts per million (ppm) level to the "non-drinking water" standard of 1.0 ppm. Additionally, the Navy is requesting a variance for the applicable cleanup level of TPH in soil from the "drinking water" standard of 500 ppm to the "non-drinking water" standard of 1,000 ppm. A variance is requested due to overlapping contaminant plumes associated with regulated tanks and non-regulated tanks and the Navy's wish to clean up the site using a single cleanup standard. It is our understanding that contamination associated with non-regulated tanks should be addressed under Tennessee's Water Quality Act. Under this regulation, a TPH action level does not exist; therefore, according to Tennessee's Enforcement and Compliance Division of Water Pollution Control personnel, the most stringent TPH cleanup level established under the underground storage tank (UST) Division is used by default. The applicable "drinking water" cleanup levels for TPH in groundwater and soil are 0.10 ppm and 500 ppm, respectively.

The site is located at the North Fuel Farm near Building N-126 at the Naval Air Station (NAS) Memphis, in Millington, Tennessee. The fuel farm contained five tanks, three of which have been removed and two are scheduled for removal in the immediate future. Tanks currently and formerly present include the following:

<u>Tank Number</u>	<u>Capacity</u>	<u>Contents</u>	<u>Status</u>
304	100,000	heating oil	non-regulated
1239	100,000	heating oil	non-regulated
7	560	JP-5	regulated - closed
303	25,000	JP-5	regulated - closed

1241

25,000

JP-5

regulated - closed

All tanks have been registered under facility I.D. 0-791709, which inadvertently included non-regulated tanks 304 and 1239. Two contamination assessments have been conducted at the fuel farm, both of which found elevated TPH concentrations in soil and groundwater. A brief chronology of the site is summarized below.

- November 17, 1993 - A *Final Environmental Assessment Report* completed for tanks 7, 303, and 1241 found TPH concentrations up to 17 ppm and 110 ppm in groundwater and soil, respectively.
- January 21, 1994 - Due to action levels exceeding the "non-drinking" water cleanup level, a *Site Specific Standard Request* was submitted to the TDEC for tanks 7, 303, and 1241. Quarterly monitoring and a TPH-DRO action level of 100 ppm was requested in lieu of corrective action.
- October 27, 1994 - A *Final Environmental Assessment Report* was submitted to the TDEC for non-regulated heating tanks 304 and 1239, located immediately adjacent to tanks 7, 303, and 1239. TPH concentrations in groundwater and soil were found up to 170 ppm and 2,300 ppm, respectively.
- November 18, 1994 - As a result of the site being slated for transfer to the city of Millington under the Base Realignment and Closure (BRAC) program, the Navy rescinded the *Site Specific Standard Request* for tanks 7, 303, and 1239 and instead decided to remediate the site. In the letter the NAVY indicated that a Corrective Action Plan would be prepared outlining the best course of action to remediating soil and groundwater associated with the five USTs.
- March 10, 1995 - A letter was submitted to the Navy, as a followup to a meeting between Mr. Glen Birdwell and Mr. Ghattas Murr with the TDEC UST Division and Mr. John Karlyk with the Navy. The UST Division required that the tanks 304 and 1239 follow UST guidance outlined for investigation and clean-up, with exception that groundwater follow the TN Water Quality Act. Under the TN Water Quality Act, a TPH action level does not exist however, personnel from the Enforcement and Compliance Division of Water Pollution Control indicated that they default to the most stringent TPH cleanup level (0.10 ppm for "drinking water") established under the Division of UST.

In summary, regulated tanks 7, 303, and 1241 are eligible for corrective action to the "non-drinking" water standard", however, non-regulated tanks 304 and 1239 must meet the "drinking water" standard.

The Navy would like to remediate both of these sites under one corrective action plan in an expeditious manner, however, a variance is requested from the currently imposed "drinking

water" standards for tanks 304 and 1239 to the "non-drinking water" standard that is applicable to the adjacent regulated tanks. The basis of this request is the following:

- Soil permeabilities at the site are in the 10^{-7} cm/sec range. This is significant in that the recharge rate associated with the low permeability is not conducive to a production (drinking water) well. Additionally, the low permeabilities suggest the spread of contamination off site is not likely.
- A water use survey conducted in the vicinity during the EAR for tanks 7, 303, and 1241 indicated the closest shallow well is approximately one mile west of the site. Groundwater analyzed for Primary and Secondary Drinking Water Standards from the affected water bearing zone found iron, manganese, and turbidity in excess of the suggested drinking water levels.
- Due to the low soil permeability and the present contaminant plume, it has been estimated that a cleanup level of 1.0 ppm will require 8 to 15 years. A "drinking water" cleanup level of 0.1 ppm would require 20 to 30 years of remediation. This estimate is based on the present migration of TPH in the soil and the soil properties. A more accurate time frame for achieving cleanup will require detailed design and preliminary testing of the selected remedial alternative.
- Operation and maintenance costs, including required sampling activities, would be at least doubled if the cleanup goal is 0.1 ppm. The total cost of the groundwater remediation based on a cleanup goal of 0.1 ppm could be fifty to sixty percent more than remediation based on a 1.0 ppm cleanup goal.
- Conversations with the Navy's consultant, EnSafe/Allen & Hoshall, indicated that to their knowledge, no site has undergone TPH remediation to 0.10 ppm.

The Navy appreciates your consideration of this request and anticipates your response. A Corrective Action Plan will be prepared with the appropriate target cleanup levels and submitted to the TDEC following your decision. Should you need relevant site information or have any questions please do not hesitate to contact me or Ben Brantley with E/A&H at 901-372-7962.

Sincerely,

cc: Ben Brantley, E/A&H
John Karlyk, EIC
Ghattas Murr, TDEC