09.10 - 07/20/95 - 00448

Proposed Cleanup Plan

MCB Camp Lejeune

Camp Geiger Area Fuel Farm

Site 35 - Operable Unit No. 10

Summary

This fact sheet outlines the proposed plan of Department of the Navy (DON) to clean up contaminated soil at the Camp Geiger Area Fuel Farm (Site 35), Marine Corps Base, Camp Lejeune, North Carolina. Several environmental studies have been performed at this site. These studies have shown that the soil, which is contaminated by petroleum products, does not present a significant threat to public health or the environment. However, levels of petroleum chemicals (called hydrocarbons) at four locations are higher than the North Carolina Department of Environment, Health, and Natural Resources (NC DEHNR) allows. Therefore, a remedial action or cleanup will be required.

Public Participation

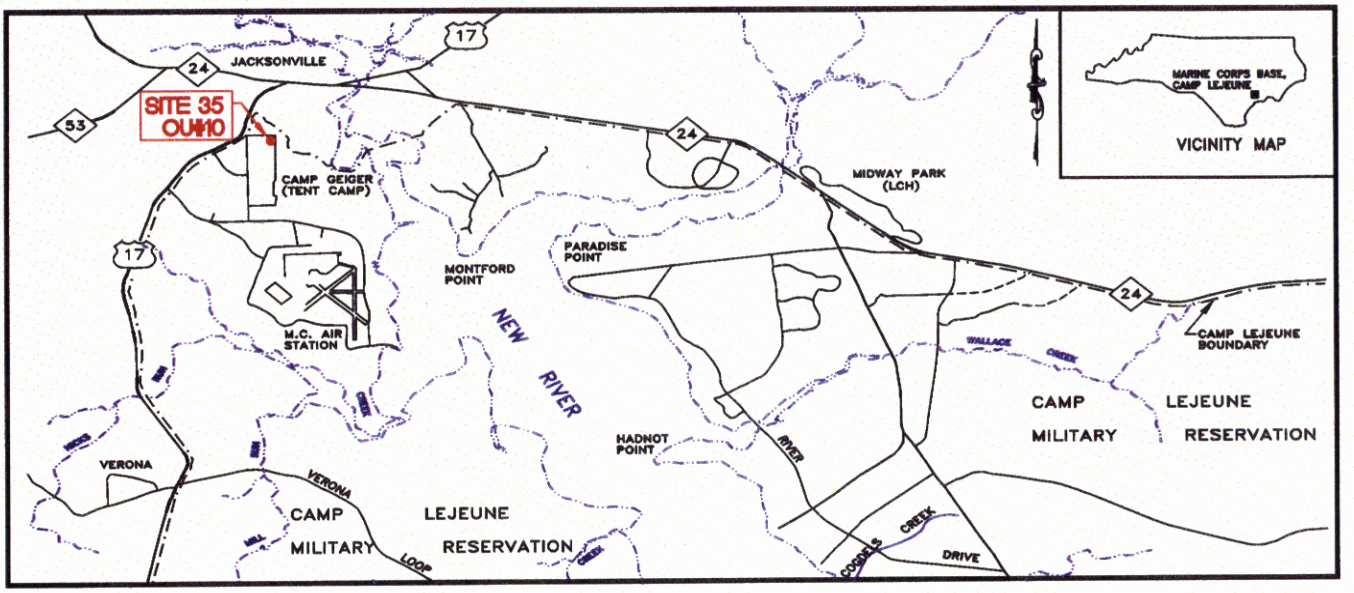
The DON encourages public participation in their environmental program. In the past, public meetings have been held to provide the community with information about the continuing environmental studies and to receive comments and ideas from the community. This Proposed Plan for Site 35 is available for public review and comment. Page 4 lists local facilities where the Site 35 information can be obtained and contact persons who can supply additional information.

Site 35 Background

Site 35 includes a Fuel Farm with five, 15,000-gallon, aboveground storage tanks (ASTs), a pump house, and an unloading pad. The Fuel Farm is located within Camp Geiger just north of the intersection of Fourth and "G" Streets (see figure and photograph on page 2). The Fuel Farm ASTs, which date back to the opening of Camp Geiger in 1945, have been used exclusively to store fuel products including No. 6 fuel oil, unleaded gasoline, diesel fuel, and kerosene. Reports of leaks in

Acronyms

AST	Aboveground Storage Tank
NCDEHNR	North Carolina Department of Environment, Health, and Natural Resources
NCDOT	North Carolina Department of Transportation
DON	Department of the Navy
MCB	Marine Corps Base
PPM	Parts Per Million
RAA	Remedial Action Alternative
RI/FS	Remedial Investigation/Feasibility Study
COPC	Chemical of Potential Concern
TPH	Total Petroleum Hydrocarbons
SSE	Site Sensitivity Evaluation



underground lines and surface spills date back to the 1950s. In the past interceptor trenches were dug where the fuel was collected and burned and as much as 20 cubic yards of contaminated soil were excavated.

The Fuel Farm is scheduled to be dismantled and decommissioned by December, 1994 so that a four lane, divided highway proposed by the North Carolina Department of Transportation (NC DOT) can be built. (See figure on page 4.)

Environmental Investigations

Environmental investigations at Site 35 began in 1983. Separate studies were performed in 1983, 1984, 1987, 1990, and 1991. An Interim Remedial Action Remedial Investigation/Feasibility Study (RI/FS) was conducted in 1993. This study focused on contaminated soil because it was believed that the soil was the source of heavy, fuel-like odors reported along Brinson Creek (see photograph on page 5) and, therefore, posed a potential immediate threat to the environment. The DON is also conducting a comprehensive site-wide RI/FS at Site 35. This

study includes investigations of groundwater, surface water, sediment, and fish that are not being studied under the Interim Remedial Action RI/FS.

Interim Remedial Action RI Results

The results of the Interim Remedial Action RI show that soil contaminated with fuel is present in the subsurface soil above the groundwater surface at four locations (see figure on page 4).

A human health risk assessment, performed as part of this study, identified arsenic and benzene as Chemicals of Potential Concern (COPCs) in the contaminated areas. A worker involved in remediation or highway construction was identified as the most likely person to be exposed to the contamination. The risk assessment determined that no significant health impacts could be expected if the construction workers were exposed to the contaminated soil.

An ecological risk assessment was not conducted because the contaminated soil was below the surface where wildlife would not be exposed to it. An ecological risk assessment will be included under the comprehensive, site-wide RI/FS being conducted currently being performed.

Interim Remedial Action FS Results

Based on the results of the risk assessment, unacceptable human health risks are not expected at Site 35. Therefore, the scope and goals for the cleanup of contaminated soil were developed based on NC DEHNR guidelines. These guidelines include a Site Sensitivity Evaluation (SSE). Cleanup goals were identified based on levels of fuel chemicals or total petroleum hydrocarbons (TPH) as follows:

- TPH (gasoline) = 40 mg/kg (ppm)
- TPH (diesel) = 160 mg/kg (ppm)

Various technologies and cleanup options were studied and evaluated. Six Remedial Action Alternatives (RAAs) that should be able to meet the cleanup goals were chosen. The six RAAs are as follows:

❍ **RAA 1 (No Action)** - No action is always considered as a baseline to evaluate other alternatives. In this case, No Action means that the contaminated soil will remain in place. Natural biological cleanup should take place. Such natural remediation can reduce contaminants but the time required for cleanup is difficult to predict. (Estimated cost: $0)

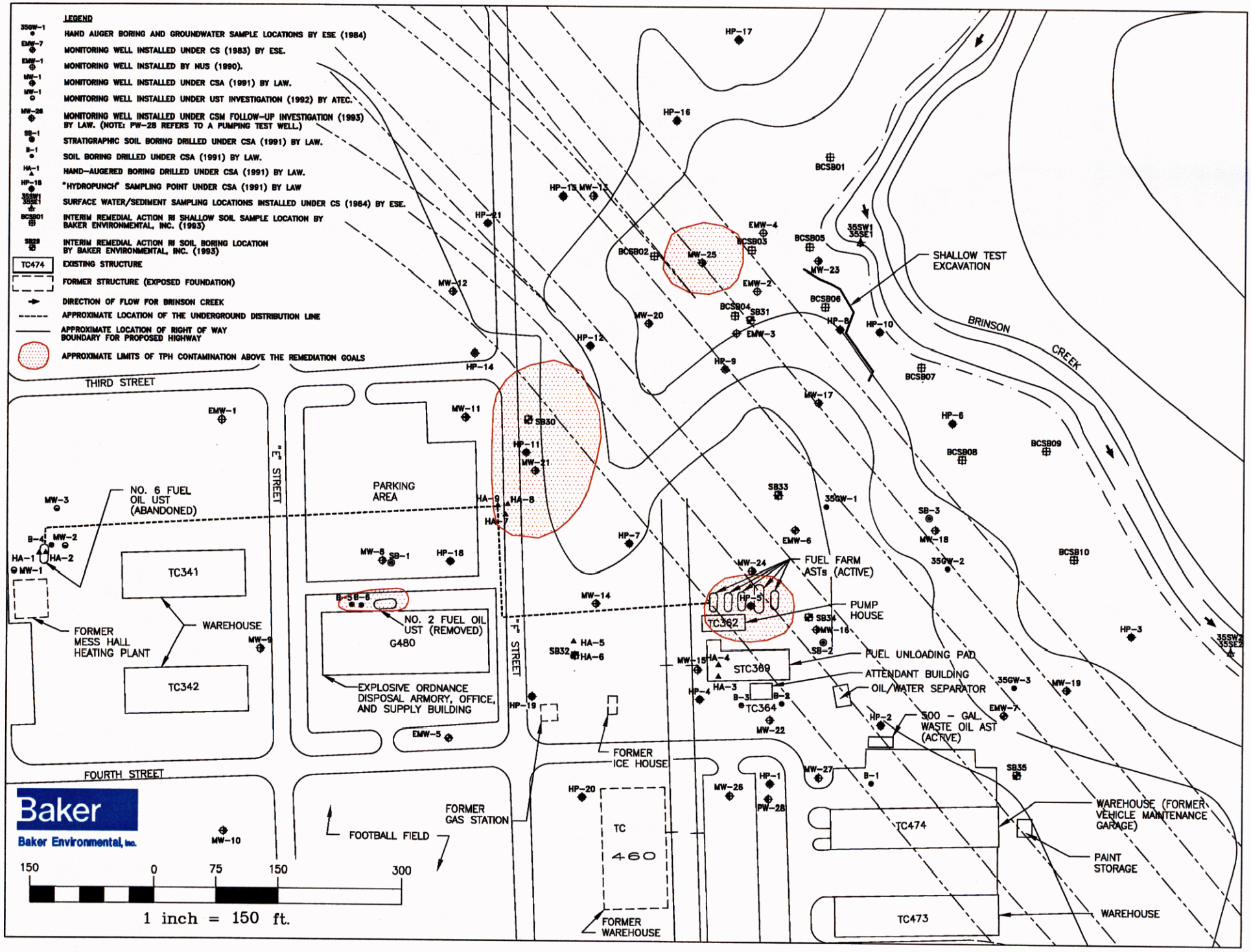
❍ **RAA 2 (Source Removal and Off-Site Landfill Disposal)** - Under RAA 2 contaminated soil will be dug up, transported off site, and disposed at a state permitted solid waste landfill. Clean backfill will be used to replace the excavated contaminated soil. (Estimated cost: $527,000)

❍ **RAA 3 (Source Removal and Off-Site Biotreatment)** - Under RAA 3 contaminated soil will be dug up, transported off site, and treated biologically at a commercial composting/landfarming facility. Clean backfill will be used to replace the contaminated soil. (Estimated cost: $558,000)

❍ **RAA 4 (Source Removal and On-Site, Soil Aeration)** - Under RAA 4 contaminated soil will be dug up and vigorously mixed at an on-site staging area. Mixing should separate the volatile contaminants from the soil. This process is known as soil aeration. The treated soil will be returned to the excavation. (Estimated cost: $455,000)

❍ **RAA 5 (Source Removal and Off-Site Soil Recycling)** - Under RAA 5 contaminated soil will be dug up and transported off site to a commercial soil recycling facility. The facility will use the contaminated soil to produce basic materials such as bricks and asphalt. Clean backfill will be used to replace the contaminated soil. (Estimated cost: $558,000)

❍ **RAA 6 (Source Removal and On-Site Low Temperature Thermal Desorption)** - Under RAA 6 contaminated soil will be dug up and treated on site. A commercial process will be used to heat wastes to temperatures ranging from 200 to 600 degrees Fahrenheit. The heat causes the volatile contaminants to be released from the soil to the air. The contaminants are then either collected, destroyed, or released to the atmosphere. (Estimated cost: $613,000)


LEGEND
HAND AUGER BORING AND GROUNDWATER SAMPLE LOCATIONS BY ESE (1984)
MONITORING WELL INSTALLED UNDER CS (1983) BY ESE.
MONITORING WELL INSTALLED BY NUS (1990).
MONITORING WELL INSTALLED UNDER CSA (1991) BY LAW.
MONITORING WELL INSTALLED UNDER UST INVESTIGATION (1992) BY ATEC.
MONITORING WELL INSTALLED UNDER CSM FOLLOW-UP INVESTIGATION (1993) BY LAW. (NOTE: PW-28 REFERS TO A PUMPING TEST WELL.)
STRATIGRAPHIC SOIL BORING DRILLED UNDER CSA (1991) BY LAW.
SOIL BORING DRILLED UNDER CSA (1991) BY LAW.
HAND-AUGERED BORING DRILLED UNDER CSA (1991) BY LAW.
"HYDROPUNCH" SAMPLING POINT UNDER CSA (1991) BY LAW
SURFACE WATER/SEDIMENT SAMPLING LOCATIONS INSTALLED UNDER CS (1984) BY ESE.
INTERIM REMEDIAL ACTION RI SHALLOW SOIL SAMPLE LOCATION BY BAKER ENVIRONMENTAL, INC. (1993)
INTERIM REMEDIAL ACTION RI SOIL BORING LOCATION BY BAKER ENVIRONMENTAL, INC. (1993)
TC474
EXISTING STRUCTURE
FORMER STRUCTURE (EXPOSED FOUNDATION)
DIRECTION OF FLOW FOR BRINSON CREEK
APPROXIMATE LOCATION OF THE UNDERGROUND DISTRIBUTION LINE
APPROXIMATE LOCATION OF RIGHT OF WAY BOUNDARY FOR PROPOSED HIGHWAY
APPROXIMATE LIMITS OF TPH CONTAMINATION ABOVE THE REMEDIATION GOALS
THIRD STREET
FOURTH STREET
"E" STREET
"F" STREET
BRINSON CREEK
NO. 6 FUEL OIL UST (ABANDONED)
FORMER MESS HALL HEATING PLANT
TC341
WAREHOUSE
TC342
PARKING AREA
NO. 2 FUEL OIL UST (REMOVED)
G480
EXPLOSIVE ORDNANCE DISPOSAL ARMORY, OFFICE, AND SUPPLY BUILDING
FOOTBALL FIELD
FORMER GAS STATION
FORMER ICE HOUSE
TC 460
FORMER WAREHOUSE
FUEL FARM ASTs (ACTIVE)
PUMP HOUSE
TC362
FUEL UNLOADING PAD
STC369
ATTENDANT BUILDING
OIL/WATER SEPARATOR
TC364
500 - GAL. WASTE OIL AST (ACTIVE)
SHALLOW TEST EXCAVATION
TC474
WAREHOUSE (FORMER VEHICLE MAINTENANCE GARAGE)
PAINT STORAGE
TC473
WAREHOUSE
Baker
Baker Environmental, Inc.
150 0 75 150 300
1 inch = 150 ft.

Proposed Alternative

The proposed alternative for cleaning up contaminated soil at Site 35 is RAA 5 (Source Removal and Off-Site Soil Recycling). The proposed alternative will protect human health and the environment because contaminated soil will be removed from the site. It also meets all applicable federal, state, and local regulations and guidelines. In addition, recycling technology is available at several state-permitted commercial facilities that serve the Camp Lejeune area.

RAA 3 (Source Removal and Off-Site Biotreatment) will be considered as an alternate RAA. RAA 3 also protects human health and the environment and meets applicable regulations and is roughly equal in cost. It was not selected as the proposed alternative because there are fewer commercial biotreatment facilities than available soil recycling facilities near Camp Lejeune and, therefore, soil recycling will likely be easier to implement.

Public Involvement In The Selecting Process

The public is encouraged to participate in the decision making process. The Proposed Plan is available for review along with the Administrative Record at the information repositories established by MCB Camp Lejeune. These repositories are located at the Onslow County Library and at Building 67, Camp Lejeune. The Administrative Record is a compilation of all the information evaluated to develop the Proposed Plan.

Public Comment Period

The 30-day public comment period will be held from July 26, 1994, and end in August 26, 1994. Opinions and concerns may be forwarded in writing to the Navy's Project Manager, Ms. Katherine Landman (address on page 6).

Public Meeting

A public information meeting will be sponsored by MCB Camp Lejeune on July 26, 1994 at the Camp Lejeune Elementary School Gymnatorium. A public notice for the meeting will be published in the *Jacksonville Daily News* one week before the meeting.

Verbal and written comments received during the public comment period will be considered in selecting the remedial alternative. These public comments will be addressed in the Responsiveness Summary portion of the Record of Decision, which describes the final decision for the remedial action.

Installation Restoration Program Process

Preliminary Assessment/Site Inspection (PA/SI):
identifies potential threats to human health and the environment

Remedial Investigation (RI):
analyzes contaminants and determines possible contamination migration from site and risks to human health and the environment

Feasibility Study (FS):
evaluates feasible cleanup methods to achieve environmental standards for human health and the environment

Proposed Remedial Action Plan (PRAP):
outlines feasible alternatives and recommends remediation or cleanup method

Public Comment Period/Meeting:
allows for public examination of the PRAP and expression of comments to appropriate agency; meeting held to present plan and answer questions

Record of Decision (ROD):
specifies the cleanup method after evaluating public comments

Remedial Design (RD):
involves preparation of construction specifications and other design plans for remediation

Remedial Action (RA):
encompasses the actual remediation or cleanup of the site to approved environmental standards

Information Repositories

Onslow County Library
58 Doris Avenue East
Jacksonville, North Carolina 28540
919/455-7350

Hours:
Mon-Thu: 9:00 A.M. - 9:00 P.M.
Fri-Sat: 9:00 A.M. - 6:00 P.M.
Sun: closed

MCB Camp Lejeune
Environmental Management Department
Building 67, Room 237
Marine Corps Base
Camp Lejeune, North Carolina 28542
910/451-5068

Hours:
Mon-Fri: 7:00 A.M. - 3:00 P.M.
Sat-Sun: closed

Contacts For More Information

Ms. Katherine Landman, Code 1823
Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Bldg. N-26)
Norfolk, Virginia 23511-2699
804/322-4818

Mr. Neal Paul
Commanding General
AC/S EMD (IRD)
Marine Corps Base
PSC Box 20004
Camp Lejeune, North Carolina 28542-0004
910/451-5068

Printed on Recycled Paper