

10/2/00-3116

**FINAL**

**FISCAL YEAR 2001  
SITE MANAGEMENT PLAN**

**MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA**

**CONTRACT TASK ORDER 0120**

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*Prepared for:*

**DEPARTMENT OF THE NAVY  
ATLANTIC DIVISION  
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*Under the:*

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## LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AST	Aboveground Storage Tank
Baker	Baker Environmental, Inc.
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
CWM	Chemical Warfare Material
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DNAPL	Dense Non-Aqueous Phase Liquid
DoN	Department of the Navy
DRMO	Defense Reutilization Marketing Office
EE/CA	Engineering Evaluation/Cost Analysis
FFA	Federal Facilities Agreement
FS	Feasibility Study
HPIA	Hadnot Point Industrial Area
HRSS	Hazardous Ranking System Score
IAS	Initial Assessment Study
IM	Interim Measures
IR	Installation Restoration
IROD	Interim Record of Decision
IRP	Installation Restoration Program
LANTDIV	Naval Facilities Engineering Command, Atlantic Division
LTTD	Low Temperature Thermal Desorption
LUCIP	Land Use Control Implementation Plan
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
MORFORLANT	Marine Forces Atlantic
mg/kg	milligram per kilogram
NA	Natural Attenuation
NACIP	Navy Assessment and Control of Installation Pollutants
NAE	Natural Attenuation Evaluation
NC DENR	North Carolina Department of Environment and Natural Resources
NC	North Carolina
NCP	National Oil and Hazardous Substances Pollution Control Contingency Plan
NCWQS	North Carolina Water Quality Standards

**LIST OF ACRONYMS AND ABBREVIATIONS**  
*(Continued)*

NFA	No Further Action
NFESC	Naval Facilities Engineering Services Center
NPL	National Priorities List
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PCP	pentachlorophenol
PITT	Partitioning Interwell Tracer Test
POL	petroleum, oil, lubricant
ppb	parts per billion
PRAP	Proposed Remedial Action Plan
Pre-RI	Pre-Remedial Investigation
RBC	Residential Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SEAR	Surfactant Enhanced Aquifer Remediation
SI	Site Investigation
SMP	Site Management Plan
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TCRA	Time Critical Removal Action
TPH	total petroleum hydrocarbon
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic contaminant

## **1.0 INTRODUCTION**

This document presents the Final Fiscal Year 2001 Site Management Plan (SMP) for Marine Corps Base (MCB), Camp Lejeune, North Carolina. The SMP presents planned activities to be conducted at MCB, Camp Lejeune during Fiscal Year 2001 and provides projections for long-term progress in accordance with the Department of Navy (DoN), Installation Restoration (IR) Program through FY 2003. This document has been prepared by Baker Environmental, Inc. (Baker) for the Atlantic Division, Naval Facilities Engineering Command (LANTDIV) and the MCB, Camp Lejeune IR Program. This document has been submitted to representatives of the North Carolina Department of Environment and Natural Resources (NC DENR) and the U.S. Environmental Protection Agency (USEPA), Region IV.

### **1.1 General Description**

Located in Onslow County, North Carolina, MCB, Camp Lejeune is host to five Marine Corps commands and two Navy commands. All of the real estate and infrastructure is owned, operated, and maintained by the host command. MCB, Camp Lejeune also provides support and training for the following tenant commands: Headquarters Nucleus, Second Marine Expeditionary Force; Second Marine Division; Second Marine Force Service Support Group; Second Marine Surveillance, Reconnaissance, and Intelligence Group; Sixth Marine Expeditionary Brigade; the Naval Hospital; and the Naval Dental Clinic.

The entire facility includes approximately 236 square miles and is located within the generally flat, Atlantic Coastal Plain. MCB, Camp Lejeune is bisected by the New River, which flows in a southeasterly direction and forms a large estuary before entering the Atlantic Ocean. The Atlantic Ocean forms the southeastern boundary of the facility. The western and northwestern boundaries are U.S. Route 17 and State Route 24, respectively. The City of Jacksonville, North Carolina is located immediately northwest of MCB, Camp Lejeune. Three large, publicly-owned tracts of land are located within 15 miles of the facility: Croatian National Forest, Hoffman Forest, and Camp Davis Forest. A majority of the land surrounding the facility is used for agriculture. Estuaries along the coast support commercial fishing and residential resort areas are located adjacent to MCB, Camp Lejeune along the Atlantic Ocean.

### **1.2 Environmental History**

MCB, Camp Lejeune has been actively involved with environmental investigations and remediation programs since 1983, beginning with the Navy Assessment and Control of Installation Pollutants (NACIP) Program. An Initial Assessment Study (IAS) was the first investigation of potentially hazardous sites conducted under NACIP. The IAS, which was conducted in 1983, identified areas of concern that might potentially cause threats to human health and the environment as a result of past storage, handling, and disposal of hazardous materials. Based on a review of historical records, field inspections, and personal interviews, 76 areas of concern (AOCs) were identified. The IAS concluded that, while none of the sites posed an immediate threat to human health or the environment, further investigations to assess the potential long-term impacts were warranted at 23 of the 76 sites.

The Department of Navy's IR Program was initiated in 1986 following enactment of the Superfund Amendments and Reauthorization Act (SARA) legislation. The IR Program, which was implemented to follow the requirements of SARA, replaced the NACIP. MCB, Camp Lejeune was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National

Priorities List (NPL) on October 4, 1989 (54 Federal Register 41015, October 4, 1989). Following that listing, a Federal Facilities Agreement (FFA) between USEPA Region IV, North Carolina Department of Environment, Health, and Natural Resources (now NC DENR), and the Department of Navy was signed in February 1991. The FFA was prepared to fulfill the following objectives:

- To ensure that potential environmental impacts associated with past and present activities at MCB, Camp Lejeune are thoroughly investigated and appropriate CERCLA response actions are developed and implemented as necessary to protect public health, welfare, and the environment;
- To establish a procedural framework and a schedule for developing, implementing, and monitoring appropriate response actions at MCB, Camp Lejeune in accordance with CERCLA, the National Oil and Hazardous Substances Pollution Control Contingency Plan (NCP), and relevant USEPA remediation policy;
- To encourage public participation, facilitate cooperation, and exchange of information among parties associated with the investigation and remediation process.

The original FFA pertained to 23 of the initial sites identified at MCB, Camp Lejeune. The 23 sites have been investigated in accordance with the NCP, CERCLA, and SARA, under the terms and conditions of the FFA. Based upon the conclusions and recommendations identified by subsequent site inspections, newly identified sites throughout MCB, Camp Lejeune have been added to the original list of 23.

### **1.3 Purpose**

This Fiscal Year 2001 SMP is a forward-looking management tool and one of the primary documents identified in the FFA. The SMP includes proposed deadlines for completion of deliverables, as specified in the FFA, to be submitted during Fiscal Year 2001. In addition, the SMP identifies IR Program activities projected for the next three-year period (2001-2003).

### **1.4 Site Listing Changes**

The FFA identified 23 sites where Remedial Investigation and Feasibility Study (RI/FS) activities were to be conducted; however, Site 22 and Site 45 have been reassigned to the Underground Storage Tank (UST) Program at MCB, Camp Lejeune and will not require an RI/FS.

Based upon the results of Site Inspections conducted at MCB, Camp Lejeune during 1991, 1992, and 1993, the following sites were added to the IR Program:

- Site 3 (Old Creosote Plant)
- Site 7 (Tarawa Terrace Dump)
- Site 43 (Agan Street Dump)
- Site 44 (Jones Street Dump)
- Site 54 (Crash Crew Fire Training Burn Pit)
- Site 63 (Verona Loop Dump)
- Site 65 (Engineer Area Dump)
- Site 80 (Paradise Point Golf Course Maintenance Area)
- Site 82 (Volatile Organic Compound [VOC] Disposal Area at Piney Green Road)

Based upon findings from UST investigations conducted at MCB, Camp Lejeune during 1994, 1995, and 1996, the following sites have also been added to the IR Program:

- Site 88 (Building 25, Base Dry Cleaners)
- Site 89 (STC - 868)
- Site 90 (Building BB-9)
- Site 91 (Building BB-51)
- Site 92 (Building BB-46)
- Site 93 (Building TC-942)
- Site 94 (Building 1613)

Lastly, Site 84 (Building 45 Area) was added to the IR Program in 1998 based on the findings of the Pre-Remedial Investigation (Pre-RI) Study and post study sampling activities conducted from 1996 through 1998. As of September 1999, a total of 42 sites were included in the IR Program at MCB, Camp Lejeune. Provided in Table 1-1 is a listing of all the IR sites and Table 1-2 provides a listing of activities to be conducted during Fiscal Year 2001. Figure 1-1 depicts all IR sites located throughout MCB, Camp Lejeune. (Note that tables and figures are provided after each text section of the report.)

### **1.5 Federal Facilities Agreement**

As noted in Section 1.2, a FFA was signed for Camp Lejeune in 1989. This agreement was created under CERCLA Section 120 (page 2) and was signed by the Navy, the USEPA and the state of North Carolina. At the present time, there are no specific needs to amend the FFA. If, however, amendments to the FFA are necessary a summary of the changes will be outlined in this section of the SMP.

### **1.6 Site Management Plan Format**

The Fiscal Year 2001 SMP for MCB, Camp Lejeune consists of six sections. Section 1.0 describes the purpose of the SMP and the overall history of environmental program activities at MCB, Camp Lejeune, and the FFA. Section 2.0 describes the history and current status of each Operable Unit (OU) and each Pre-RI site at MCB, Camp Lejeune. A summary of ongoing and planned activities associated with each OU and each Pre-RI site is provided in Section 3.0. Also provided within Section 3.0 of the SMP are schedules for conducting CERCLA activities and specific target submittal dates for Fiscal Year 2001 documents. Previous, ongoing, and planned removal actions are presented in Section 4.0. Additional activities conducted as part of the Resource Conservation and Recovery Act (RCRA) at solid waste management units (SWMUs) located throughout MCB, Camp Lejeune are presented in Section 5.0. Lastly, references are provided in Section 6.0.

## **2.0 OPERABLE UNITS**

As defined in the NCP, an "Operable Unit" is an incremental step toward comprehensively addressing site problems. This portion of a remedial response action is devised to either eliminate or mitigate a release, threat of a release, or pathway of exposure. The cleanup of a particular site may be divided into a number of operable units, depending on the complexity of the problems associated with the site. OUs may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site. In accordance with guidance provided in the NCP, the Navy and Marine Corps have recommended that the 35 of the 42 IR Program sites be grouped into 20 OUs to proceed with RI/FS activities. In July 2000 Site 86 was removed from OU No. 6 and a new OU, 20, was created for this site. Each of the 20 OUs is listed in Table 2-1 and their locations are depicted in Figure 1-1.

Section 2.0 of the SMP identifies each of the 20 OUs at MCB, Camp Lejeune where IR Program activities have been implemented or will be implemented. Anticipated project start dates for IR Program activities are also identified. The project start dates reflect the priority of each OU based on the potential for groundwater contamination, proximity to receptors, contaminants verified, and potential ecological impacts as well as the availability of funding. It should be noted that a major re-prioritization of project start ups dates for Fiscal Years 2001 through 2003 was accomplished at the June 2000 IR Partnering Meeting. Accordingly, the projected dates for various site activities presented in this document reflect the priorities established at that meeting. A summary of IR Program activities since inception is provided in Table 2-2.

### **2.1 Operable Unit No. 1 (Sites 21, 24, and 78)**

An Interim Record of Decision (IROD) was signed on September 23, 1992 for the shallow aquifer. The Final Record of Decision (ROD) for OU No. 1 was signed on September 15, 1994.

#### **2.1.1 Site 21 - Transformer Storage Lot 140**

Site 21 is located within Site 78, between Ash Street and Sneads Ferry Road on Center Road. In 1950 and 1951, an on-site pit, located in the northern portion of the site, was used as a drainage receptor for oil from transformers. Site 21 was used from 1958 to 1977 for pesticide mixing and as a cleaning area for pesticide application equipment. The mixing area for the pesticides was in the southern portion of the site.

The Remedial Investigation (RI) conducted at Site 21 concluded that soils within portions of the site were impacted by pesticides and polychlorinated biphenyls (PCBs). A soil removal action was implemented at Site 21 to remove pesticide and PCB contaminated soil. Initial excavation in three AOCs was performed during Fiscal Year 1995. A Land Use Control Implementation Plan (LUCIP) was completed during Fiscal Year 2000 that restricts residential development and use of groundwater at the site. No additional remedial action or monitoring is planned for Site 21.

#### **2.1.2 Site 24 - Industrial Area Fly Ash Dump**

Site 24 is located south and east of the intersection of Birch and Duncan Streets, adjoining Site 78. Site 24 was used for the disposal of fly ash, cinders, solvents, used paint stripping compounds, sewage sludge, and water treatment sludge from the late 1940s to 1980. Approximately 100 acres in size, the site lies adjacent to upstream portions of Cogdels Creek.

An RI/FS was conducted at Site 24 during 1993-1994. Due to elevated pesticide (heptachlor epoxide) levels in groundwater, a monitoring program was implemented in 1995. After four consecutive quarterly sampling periods without any pesticide detections, the monitoring program at Site 24 was discontinued. Land and aquifer use controls will be implemented through a LUCIP that was completed during FY 2000. No additional remedial action or monitoring is planned for Site 21.

### **2.1.3 Site 78 - Hadnot Point Industrial Area**

The Hadnot Point Industrial Area (HPIA) is the area bounded by Holcomb Boulevard to the west, Sneads Ferry Road to the north, Louis Street to the east, and the Main Service Road to the south. A transformer storage lot (Site 21), the former UST fuel farm (Site 22), and an active service station (Site 94) are located within HPIA. The HPIA is comprised of approximately 590 acres and includes maintenance shops, gas stations, administrative offices, printing shops, warehouses, storage yards, and other similar industrial facilities.

An interim remedial action RI/FS was conducted at Site 78 concerning the shallow groundwater aquifer in 1992. Based on this initial study, an interim remedial action groundwater extraction and treatment system was implemented in 1995. An RI/FS was completed at Site 78 during 1993 and 1994. The results of this investigation indicated that organics (e.g., solvents and fuel-related compounds) had impacted the groundwater within certain areas of the study area.

Separate groundwater extraction and treatment systems were constructed in the northern (also referred to as Site 78 North) and southern (also referred to as Site 78 South) portions of Site 78. Groundwater extraction and treatment operation and monitored natural attenuation (MNA) of the groundwater are currently ongoing in the northern area. Groundwater samples are collected on a semi-annual basis at the north plant to evaluate the effectiveness of the remediation system. Operations at the south plant were shut down in January 2000; however, MNA of groundwater is ongoing at the southern area. Land and aquifer use controls were implemented through a LUCIP that was completed during Fiscal Year 2000.

During Fiscal Year 2001, operations at the northern plant will continue to be performed and information on the systems effectiveness will be incorporated into the Annual Monitoring Report. In addition, an extensive NA study will be conducted in the northern portion of Site 78 as part of the NFESC optimization project. This study is anticipated to be completed by April 2001.

### **2.2 Operable Unit No. 2 (Sites 6, 9, and 82)**

The Final ROD for OU No. 2 was signed on September 24, 1993.

#### **2.2.1 Site 6 (Storage Lots 201 and 203) and Site 82 (Piney Green Road VOC Area)**

Sites 6 and 82 adjoin one another and comprise over 200 acres. The sites are bounded by Wallace Creek to the north, Site 9 to the south, Piney Green Road to the east, and Holcomb Boulevard to the west. Prior to the late 1980s, much of the northern area (i.e., Storage Lot 203 and Site 82) was reportedly used for storage, disposal, and handling of potentially hazardous waste and materials. During the initial site reconnaissance in 1991, soil mounds were noted throughout the northern portion of the sites. Currently, Lot 201 is used for equipment staging and much of the former wooded areas have been converted to open storage. Most of Lot 203 remains an open field that is used on occasion for temporary storage and vehicle parking. The groundwater extraction and treatment operations building, and Baker's and OHM/IT's field offices are located on the northeastern portion of Lot 203.

An RI/FS at OU No. 2 was initiated during August 1992 and completed in September 1993 with the Final ROD. Several AOCs were identified during the investigation. Soil and groundwater sampling conducted during the RI revealed elevated levels of VOCs. Chlorinated solvents in groundwater were found as deep as 240 feet below ground surface. Groundwater remains contaminated with solvent constituents such as trichloroethene (TCE), 1,2-dichloroethene, and vinyl chloride.

A time-critical removal action (TCRA) was conducted for the removal of the debris and soil in 1994. Twenty drums of dichlorodiphenyl trichloroethane (DDT) were removed and contaminated soil was excavated during the removal action. Another TCRA was conducted in 1995 and 1996 to remove drums, batteries, and communications wire. The soil was contaminated with petroleum, oil, and lubricants (POL) constituents. In addition, a soil vapor extraction system (SVE) was in operation for six months in 1996 to remediate residual soil contamination in the vadose zone.

Construction of a groundwater extraction and treatment system was initiated in December 1994 and full-scale operation of the treatment system began in July 1996. Groundwater from both the surficial and Castle Hayne aquifers are being treated by this system. Operation of the plant is expected to continue through 2001. Information on the systems effectiveness will be incorporated into the Annual Monitoring Report.

During Fiscal Year 1997, a groundwater monitoring program was initiated. Monitoring of wells associated with the monitoring of the plant's performance and the migration of contamination will be conducted under a monitoring program with samples collected on a semiannual basis. Monitoring and treatment system evaluation reports will be provided on a semiannual and annual basis during Fiscal Year 2001.

The ROD also includes institutional controls as part of the selected remedy. These controls include land and aquifer use controls that were implemented through a LUCIP that was completed in Fiscal Year 2000.

### **2.2.2 Site 9 - Fire Fighting Training Pit at Piney Green Road**

Site 9 is located immediately south of Site 6 and west of Piney Green Road. The area encompasses approximately 2.6 level acres. The fire training area consists of a concrete-lined pit with an oil and water separator. There were four 500-gallon aboveground storage tanks (ASTs) located near the training area that are no longer present. The pit has been used for training since the early 1960s. Until 1981, the training exercises were conducted in an unlined pit (the pit is now asphalt-lined). Flammable liquids including heating oil, solvents, and fuels are used as accelerants during the training exercises.

Soil and groundwater samples collected during the RI in 1992 did not reveal extensive contamination. Accordingly, no remedial actions were required at this site based on the RI findings.

During Fiscal Year 2000, the new POL Spill Training Simulator was completed. The new training facility will employ a petroleum source for burning operations. During the installation of the new facility, POL contaminated soils were excavated and removed from the site. No additional remedial action or monitoring is planned for Site 9.

### **2.3 Operable Unit No. 3 (Site 48)**

The Final ROD for OU No. 3 was signed on September 10, 1993.

### **2.3.1 Site 48 - MCAS Mercury Dump**

Site 48 is located within Marine Corps Air Station (MCAS), New River. The site is bounded by Longstaff Road to the west and to the east by the New River. An unnamed tributary to the New River borders the site to the north. The site includes approximately four flat acres and consists of Building AS-804 and a lawn area behind the building. During the late 1950s to the mid-1960s, Building AS-804 was used for photographic development. Mercury was drained from radar units and disposed in small quantities behind the building. It was reported that approximately one gallon of mercury per year over a ten-year period was disposed in this manner. Building AS-804 is currently used as a classroom training facility.

During the 1992 RI/FS, historical aerial photographs were obtained and evaluated in order to identify the suspected disposal area(s). A geophysical investigation was also performed to identify the presence of mercury. The geophysical investigation did not reveal anything associated with mercury disposal. A soil and groundwater investigation was conducted, focusing on the anomalies identified in the aerial photographs. The results of this study did not identify mercury in either soil or groundwater. The RI concluded that the absence of mercury at Site 48 was most likely due to washout of the area and periodic flooding during severe storms because of its proximity to the New River. No additional remedial action or monitoring is planned for Site 48.

### **2.4 Operable Unit No. 4 (Sites 41 and 74)**

The Final ROD for OU No. 4 was signed on December 5, 1995.

#### **2.4.1 Site 41 - Camp Geiger Dump Near Former Trailer Park**

Site 41 is located within the Camp Geiger area of MCB, Camp Lejeune and is comprised of approximately 30 acres. The site is situated between Highway 17 to the west, Tank Creek to the south, an unnamed tributary to the north, and an unimproved road to the east. From 1946 to 1970, the area was used as an open burn dump. Construction debris, POL wastes, mirex (a pesticide), solvents, batteries, ordnance, and chemical training agents were reportedly disposed at Site 41. Based upon background information, the debris was burned and graded over with soil.

An RI/FS was initiated in December 1993 and completed in May 1995. Results of the RI indicated that the site contains a significant amount of buried construction debris. Analytical results indicated that surface soil in the central portion of the study area was contaminated with polynuclear aromatic hydrocarbon (PAH) compounds, most likely the result of previous burning activities. Groundwater samples obtained from the site exhibited chromium, iron, lead, and manganese above North Carolina 2L Water Quality Standards (NCWQSs) for groundwater. The human health risk assessment concluded that there were no risks to human health because groundwater in this area is not used as a potable supply. The ecological risk assessment concluded that potential adverse impacts to ecological receptors were low due to the low levels of contamination in soil, sediment, and surface water.

A groundwater reclassification and surface water variance were requested due to the nature of potential contamination that could not feasibly be remediated. In August 1997, a letter from NC DENR Wilmington Regional Office informed MCB, Camp Lejeune that, based on limited site contamination, the groundwater reclassification and surface water variance were no longer required.

The selected remedy for Site 41 includes groundwater and surface water monitoring, and aquifer and land use controls prohibiting development of the site. These controls were implemented through a LUCIP that was completed in Fiscal Year 2000. Groundwater, surface water, and sediment monitoring will continue on a semiannual basis through Fiscal Year 2001.

#### **2.4.2 Site 74 - Mess Hall Grease Disposal Area**

Site 74 is located approximately one-half mile east of Holcomb Boulevard in the northeast section of MCB, Camp Lejeune just north of Henderson Pond. During the early 1950s through the early 1960s, grease from the mess hall was reportedly taken to the area and disposed in trenches. It was also reported that drums containing PCBs and "pesticide soaked bags" were taken to the site and buried. Chemical warfare materials (CWM), similar to the types documented at Site 69, also were reportedly taken to Site 74.

A RI was conducted at Site 74 in conjunction with Site 41. Historical aerial photographs of Site 74 depict extensive trenching operations. Results of the RI did not indicate widespread contamination. Some pesticides were detected in soil at the former pest control area, and one monitoring well exhibited low levels of a pesticide. Based on the results of the human health and ecological risk assessments, Site 74 poses no unacceptable risks.

The selected remedy for Site 74 includes land use controls prohibiting the development of the site, restrictions on the use of the groundwater as a potable supply, and groundwater monitoring. Monitoring was discontinued in July 1998 because detected metal concentrations are indicative of naturally occurring metals in the presence of acidic soils. The decision to restrict development of the site is based on the potential presence of buried CWM near the grease pit disposal area. These land use controls will be implemented through a LUCIP that was completed in Fiscal Year 2000.

#### **2.5 Operable Unit No. 5 (Site 2)**

The Final ROD for OU No. 5 was signed on September 15, 1994.

##### **2.5.1 Site 2 - Former Nursery/Day Care Center**

Site 2 is located at the intersection of Holcomb and Brewster Boulevards, just inside the main gate of MCB, Camp Lejeune. From 1945 to 1958 an on-site building was used for the storing, handling, and dispensing pesticides. This building, Building 712, was later used as a day care center for children. Chemicals known to have been used at Site 2 include chlordane, 4,4'-DDT, diazinon, and 4,4'-dichlorodiphenyldichloroethane (DDD). Chemicals known to have been stored at this site include dieldrin, lindane, malathion, and silvex. A preliminary soil sampling investigation conducted in 1982 indicated the presence of pesticides. Based on these results, the day care center was moved to another location. Building 712 is currently being used as a personnel office for non-appropriated funding personnel.

An RI/FS was initiated in April 1993 and completed in September 1994. Based on results of the RI/FS, elevated levels of pesticides were detected in soil near the former mixing pads. In addition, a plume consisting of low levels of ethylbenzene and toluene was present in the shallow aquifer. Ethylbenzene and toluene are known constituents in petroleum based pesticides similar to what was used on Site 2. Contamination of site environmental media was believed to be the result of small spills, washout, and excess disposal.

A TCRA was initiated in January 1994. The TCRA involved the excavation and off-site treatment of pesticide-contaminated soil and concrete. A total of 1,049 tons of pesticide contaminated soils were excavated and sent for off-site disposal.

Institutional controls, including groundwater monitoring, were implemented at Site 2. Aquifer and land use controls were implemented through a LUCIP that was completed in Fiscal Year 2000. A groundwater monitoring program for volatile organics was initiated in 1995 and will continue on a semiannual basis throughout 2001.

## **2.6 Operable Unit No. 6 (Sites 36, 43, 44, and 56)**

A Final ROD (which includes a LUCIP) is anticipated to be signed for OU No. 6 during Fiscal Year 2001.

### **2.6.1 Site 36 - Camp Geiger Dump Area**

Site 36 is located approximately 1,000 feet east of Camp Geiger and 500 feet west of the New River, adjacent to the Camp Geiger Sewage Treatment Plant (STP). Camp Geiger is situated directly north of MCAS, New River, and approximately three miles southwest of Jacksonville, North Carolina. Site 36 was originally estimated to be approximately 1.5 acres in size. However, based upon a review of aerial photographs and observations recorded during a site scoping visit, the size of the site was adjusted to include nearly 20 acres. The site was reported to have been used for the disposal of mixed industrial wastes including trash, waste oils, solvents, and hydraulic fluids. Most of the material was first burned and then buried; however, some unburned material was buried. The dump was active from the late 1940s to the late 1950s.

A RI field investigation at Site 36 commenced during February 1995 and continued through May 1995. Additional monitoring wells were installed and a second round of groundwater samples was collected in July of 1995. Additional soil borings and two sediment samples were collected in October of 1995. The RI indicated that positive detections of organic compounds in groundwater were limited to the northern and western portions of the study area. The presence of volatile compounds was confirmed by results of the second groundwater sampling round. In addition, PCBs were detected among soil samples obtained from the western portion of the site. A limited number of volatile and pesticide compounds were also detected among surface water and sediment samples.

Removal of the PCB-contaminated soil was completed during Fiscal Year 1998 as part of a Non-Time Critical Removal Action. The PCBs impacted area was located in the northwestern region of the site at the intersection of two dirt roads.

Site 36 was placed in the monitoring program in 1998. Groundwater samples have been collected at this site on a quarterly basis since that time. Surface water samples from Brinson Creek are also collected under the monitoring program. Monitoring will continue through the Fiscal Year 2001.

Three temporary groundwater monitoring wells were installed and sampled (for TCE only) in June 2000 to determine if contaminants were migrating off of Base property. The data indicated non-detectable levels of TCE in all three wells. In addition, groundwater elevation data from the temporary wells confirmed that groundwater within the surficial aquifer discharges into Brinson Creek. Accordingly, it was determined that the creek is serving as a "drain" where shallow groundwater on both sides of the creek discharge.

The Final ROD is anticipated to be signed in Fiscal Year 2001 and will include monitoring with MNA with institutional controls as the selected alternatives. Institutional controls will be implemented through a LUCIP which defines land and aquifer use controls for Site 36. A Natural Attenuation Evaluation (NAE) will be completed in Fiscal Year 2001 and will be included in the 2001 Annual Monitoring Report.

### **2.6.2 Site 43 - Agan Street Dump**

Site 43 is comprised of approximately 11 acres and is located within the operations area of MCAS, New River, and two miles west of the main entrance. The site is bordered to the north by Edwards Creek and to the east and south by Strawhorn Creek. The Agan Street Dump reportedly received inert material such as construction debris (i.e., fiberglass and lumber) and trash. Sludge from a former sewage disposal facility, located adjacent to the study area, and was also dumped onto the ground surface of Site 43. It is not clear when disposal operations took place.

The RI field investigation commenced in February 1995 and continued through May 1995. Positive detections of semivolatile organic compounds (SVOCs) among soil samples obtained at Site 43 were primarily limited to a cleared portion of the study area adjacent to the gravel access road. In general, higher concentrations of pesticides were observed in samples obtained from a small portion of the study area with partially buried containers. No other organic compounds were detected among groundwater samples obtained from the shallow and deep aquifers.

A surficial metallic debris removal action was performed during July 1995. Approximately 7.3 tons of metallic debris was routed to recycling recovery in July 1995.

No additional remedial action or monitoring will be required for Site 43. The ROD for Site 43 is anticipated to be approved during Fiscal Year 2001.

### **2.6.3 Site 44 - Jones Street Dump**

Site 44 encompasses approximately 5 acres and is located at the northern terminus of Baxter Street, behind base housing units along Jones Street within the New River operations area. The site is bordered to the north and west by Edwards Creek, to the south by base housing units along Jones Street, and to the east by woods and an unnamed tributary to Edwards Creek. Edwards Creek flows east from the study area toward Site 43, which is located about 2,000 feet to the east. Site 44 was reportedly in operation during the 1950s. Although the quantity of waste is not known, debris, cloth, lumber, and paint cans were reportedly disposed of at the site.

A RI field investigation at Site 44 commenced in February 1995 and continued through May 1995. A total of four semivolatile contaminants, including two PAH compounds, were identified during the soil investigation at Site 44. The pesticides 4,4'-dichlorodiphenyldichroethylene (DDE), 4,4'-DDD, and 4,4'-DDT were the most widely distributed compounds in the soil. Inorganics were the most prevalent and widely distributed constituents in groundwater at Site 44. Positive detections of organic compounds were limited to two monitoring wells. A total of six VOCs were detected among the 13 surface water samples obtained from Edwards Creek. VOCs were not detected in any of the ten sediment samples obtained from Edwards Creek.

The occurrence of VOCs among the limited groundwater and surface water samples obtained from the study area was traced to Site 89, located upgradient of Site 44.

No additional remedial action or monitoring will be required for Site 44. The ROD for Site 44 is anticipated to be approved during Fiscal Year 2001.

#### **2.6.4 Site 54 - Crash Crew Fire Training Burn Pit**

Site 54 is located near the southwest end of runway 5-23, within the operations area of MCAS, New River. The burn pit is approximately 50 feet in diameter and is situated at the center of this 1.5 acre site. An 8,000-gallon UST lies to the northwest of the burn pit. Fire training exercises are conducted within the burn pit using JP-type fuel, which is stored in the nearby UST. An oil and water separator, located approximately 100 feet to the southeast of the burn pit, is used for temporary storage and collection of the spent fuel. Site 54 has served as a fire training burn pit since the mid-1950s. In 1975 a lined burn pit was constructed. The same burn pit remains in operation today; however, only JP-type fuels are currently used during training exercises.

A RI field investigation for Site 54 commenced in February 1995 and continued through May 1995. Soil borings were completed to assess the suspected impact of burn pit operations and were utilized for the installation of monitoring wells. SVOCs were identified in both surface and subsurface soil samples from the southern and southwestern portions of the study area. Positive detections of organic compounds were limited to portions of the study area immediately adjacent to the burn pit or UST and extending southwest of the burn pit. The presence of volatile and semivolatile compounds in soil samples obtained from this portion of the study area is consistent with current site operations. Both volatile and semivolatile organic compounds were also detected in groundwater samples obtained from the same portion of the study area.

Site 54 was placed in the monitoring program in 1998. Groundwater samples have been collected at this site on a quarterly basis since that time. Monitoring will continue through the Fiscal Year 2001.

Conversion of the burn pit to a training area that employs clean-burning fuels with operational and engineering controls started August 2000. During the installation, POL contaminated soils was removed. The new training facility will be completed in Fiscal Year 2001.

The Final ROD is anticipated to be signed in Fiscal Year 2001 and will include monitoring with MNA, and institutional and operational controls as the selected alternatives. Institutional controls will be implemented through a LUCIP which defines land and aquifer use controls for Site 54. A NAE will be completed in Fiscal Year 2001 and will be included in the 2001 Annual Monitoring Report.

#### **2.7 Operable Unit No. 7 (Sites 1, 28, and 30)**

The Final ROD for OU No. 7 was signed on May 16, 1996.

##### **2.7.1 Site 1 - French Creek Liquids Disposal Area**

Site 1 is located approximately one mile east of the New River and is situated along both the north and south sides of Main Service Road near the western edge of the Gun Park Area and Force Troops Complex. Site 1 had been used by several different mechanized, armored, and artillery units since the 1940s. Reportedly, liquid wastes generated from vehicle maintenance were routinely poured onto the ground surface. At times, holes were reportedly dug for waste acid disposal and then immediately backfilled. Thus, the disposal areas at Site 1 are suspected to contain POL and battery acid. The total extent of both the northern and southern disposal areas is estimated to be between seven and eight acres. The quantity of POL waste disposed at the areas is estimated to be between 5,000 and 20,000 gallons; the quantity of battery acid waste is estimated to be between 1,000 and 10,000 gallons. Site 1 continues to serve as a vehicle and equipment maintenance/staging area.

In 1994, a RI was conducted at Site 1. VOCs were not found in surface soils, but were detected in limited subsurface soil samples. Positive detections of VOCs in groundwater were limited to the northern portion of the study area. TCE was detected in samples obtained from the shallow aquifer. Vinyl chloride was also detected at concentrations that exceeded the state and federal drinking water standards.

As a result of the RI findings, institutional controls were required for Site 1. These land and aquifer use controls will be implemented through a LUCIP that was completed during Fiscal Year 2000. As such, a groundwater monitoring program for VOCs was established. Monitoring at Site 1 began in July 1996 and will continue on a semiannual basis throughout 2001. Based upon findings of the monitoring program, the number of wells sampled was been modified in 1998 from eight to two wells.

### **2.7.2 Site 28 - Hadnot Point Burn Dump**

Site 28 is located along the eastern bank of the New River, south of the HPIA on the Mainside portion of MCB, Camp Lejeune. Site 28 is surrounded by the Hadnot Point STP to the north, wooded and marshy areas to the east and south, and the New River to the west. Cogdels Creek flows into the New River at Site 28 and forms a natural divide between the eastern and western portions of the site. A majority of the estimated 23 acres that constitute Site 28 are used for recreation and physical training exercises. Site 28 operated from 1946 to 1971 as a burn area for a variety of solid wastes generated on the Base. Reportedly, industrial waste, trash, oil-based paint, and construction debris were burned then covered with soil. In 1971, the burn dump ceased operations, and was graded and seeded with grass. The total volume of fill within the dump is estimated to be between 185,000 and 375,000 cubic yards. This estimate was based upon a surface area of 23 acres and a depth ranging from five to ten feet.

In 1994, a RI was conducted at Site 28. VOCs were found in the surface soil and subsurface soil at very low concentrations. Based upon their wide dispersion, infrequent detection, and low concentration, VOCs in soils are not a significant problem resulting from previous disposal practices.

SVOCs appeared to be the most directly linked to past disposal practices. Several SVOCs were identified in both surface and subsurface soil samples, primarily from the western disposal area. Inorganics were detected in both surface and subsurface soil samples from the western portion of the study area at concentrations greater than one order of magnitude above Base-specific background levels. Inorganics were the most prevalent and widely distributed contaminants in groundwater at Site 28 and were found distributed throughout the site. Concentrations of inorganics, in samples obtained during both sampling rounds, were generally higher in shallow groundwater samples than in samples collected from the deeper aquifer.

As a result of the RI findings, institutional controls were required for Site 28. A groundwater, surface water, and sediment monitoring program for metals was then established. Monitoring at Site 28 began in July 1996 and will continue on a semiannual basis throughout 2001. Based upon findings of the monitoring program, the number of wells sampled and groundwater analyses have been modified since 1996 from 13 wells to four wells in 1998; and, recently, the number of wells has been reduced to one.

Land and aquifer use controls are included in the selected remedy as institutional controls. These were implemented through a LUCIP that was completed during Fiscal Year 2000.

### **2.7.3 Site 30 - Sneads Ferry Road Fuel Tank Sludge Area**

Site 30 is situated along a tank trail that intersects Sneads Ferry Road from the west, approximately 1 mile south of the intersection with Marines Road, and roughly 4-1/2 miles south of the HPIA. The majority of the Site 30 area is wooded, containing trees of less than three inches in diameter and a dense understory. Site 30 was reportedly used by a private contractor as a cleaning area for emptied fuel storage tanks from other locations. The tanks were used to store leaded gasoline that contained tetraethyl lead and related compounds. Since fuel residuals remaining in the emptied tanks were reportedly washed out at Site 30, the disposal area is suspected to contain fuel sludge and wastewater from the washout of the tanks.

In 1994, a RI was conducted at Site 30. A very limited number of VOCs were detected among surface and subsurface soil samples. No significant detections of any other potentially hazardous compounds were noted during the RI. Accordingly, no additional remedial action or monitoring is planned for Site 30.

### **2.8 Operable Unit No. 8 (Site 16)**

The Final ROD for OU No. 8 was signed on September 30, 1996.

#### **2.8.1 Site 16 - Former Montford Point Burn Dump**

Site 16 is located southwest of the intersection of Montford Landing Road and Wilson Drive in the Montford Point area of Camp Lejeune. The study area is approximately 4 acres in size and is bordered by wooded areas. Northeast Creek is approximately 400 feet southeast from the boundary of the burn dump. Limited information is available concerning the operational history of the burn dump. Trash from the surrounding housing area and buildings is suspected to have been burned and then covered with soil at Site 16. Records indicate that small amounts of waste oils were also disposed of at this site. Currently, the study area is semi-fenced and vacant.

An RI/FS at Site 16 was initiated in June 1994 and was completed in November 1994. A second round of groundwater samples was collected in February 1995. A confirmatory soil investigation was conducted in December 1995. Several pesticide contaminants were detected among soil and sediment samples obtained from the site. The pesticide levels detected at Site 16 were similar to levels detected at other areas within MCB, Camp Lejeune. Surface soil contamination also included PCBs. The detections of Aroclor 1254 and 1260 were from sampling locations across the site. PCBs were not found in the groundwater indicating that vertical migration to the water table had not occurred. Semivolatile compounds were infrequently encountered at low levels in the surface soil. Subsurface soil was relatively free of semivolatile contamination. The source of the semivolatile compounds is believed to be historical open burning. Benzene and ethylbenzene were detected in one groundwater sample collected during the first round of groundwater sampling. Volatile contaminants were absent in all groundwater samples collected as part of the second round.

Although several contaminants were detected among the various samples of environmental media, the levels were not high enough to warrant further action; however, institutional controls were established. The institutional controls at Site 16 include land and aquifer use controls that will be implemented through a LUCIP. The LUCIP was completed in Fiscal Year 2000. No additional remedial action or monitoring is planned for Site 16.

## **2.9 Operable Unit No. 9 (Sites 65 and 73)**

A Final ROD is anticipated to be signed for OU No. 9 during Fiscal Year 2001.

### **2.9.1 Site 65 - Engineer Area Dump**

Site 65 is located in the Courthouse Bay area of MCB, Camp Lejeune and is approximately five acres in size. Two separate disposal areas have been reported at Site 65, a battery acid disposal area and a liquid disposal area. The types of liquids that have been disposed are reported to have been comprised of POL. In addition, the dump was used to burn construction debris. The dump was in operation from before 1958 until 1972.

A RI was conducted at Site 65 in 1995. Findings from the RI indicate that there were no releases of hazardous substances from the waste disposal areas that would result in a risk to human health or the environment.

It is anticipated that the Final Proposed Remedial Action Plan (PRAP) and Final ROD will be submitted in Fiscal Year 2001. No additional remedial action or monitoring is expected for Site 65, pending approval of the Final ROD.

### **2.9.2 Site 73 - Courthouse Bay Liquids Disposal Area**

Site 73 is located within an active amphibious vehicle maintenance facility located along the northwest shore of Courthouse Bay. Available information indicates that disposal activities occurred within a 13-acre area from 1946 until 1977. An estimated 400,000 gallons of waste oil were disposed of in this area. The waste oil was generated during routine vehicle maintenance. The oil drained directly on the ground surface. In addition, approximately 20,000 gallons of waste battery acid were reportedly disposed of in this area. Waste battery acid was poured into shallow hand-shoveled holes that were backfilled after disposal.

A RI was conducted at Site 73 in 1995. Findings from the RI indicated the presence of VOCs among a select number of shallow and deep groundwater samples scattered across the study area. A follow-up Phase II RI was conducted in the spring of 1996 to further delineate the extent of groundwater contamination.

An NAE field investigation at Site 73 was completed and a draft NAE report was prepared in the second quarter of Fiscal Year 1999. A final NAE report will be completed in Fiscal Year 2000 or early Fiscal Year 2001. If natural attenuation of the VOCs in groundwater is shown to be a viable treatment option, it is anticipated that the Final PRAP and Final ROD with a LUCIP will be submitted for approval during the Fiscal Year 2001. Implementation of the preferred alternative should occur, pending approval, during the latter portion of Fiscal Year 2001 or early 2002.

In addition to natural attenuation, an in situ remediation technology may be employed to address an area of concentrated VOCs in the shallow aquifer. After further site investigation, the treatment system may be installed, if approved, in the southwest portion of the study area, adjacent to Courthouse Bay. Delineation of the plume near the bulkhead at Site 73 may be conducted during Fiscal Year 2001 although the results of the NA investigation indicate that this area has seen a significant reduction with time. Also, a Draft Free Product Investigation Site Sampling Plan for benzene, toluene, ethylbenzene, and total xylenes (BTEX) will be initiated during Fiscal Year 2002.

## **2.10 Operable Unit No. 10 (Site 35)**

IRODs were signed on September 15, 1994 and September 22, 1995 for the shallow groundwater. A Final ROD is anticipated to be signed for OU No. 10 during Fiscal Year 2002.

### **2.10.1 Site 35 - Camp Geiger Area Fuel Farm**

Site 35 is located immediately north of the intersection of G and Fourth Streets, approximately 400 feet southwest of Brinson Creek. The Fuel Farm consisted of five 15,000-gallon ASTs and associated underground distribution lines, a pumphouse, a fueling pad, a distribution island, and an oil separator.

The ASTs were erected in 1945 as part of the original Camp Geiger construction. The Fuel Farm was active until it was decommissioned in the spring of 1995 to make way for the construction of a highway. During the active life of the Fuel Farm several releases of fuel occurred. During 1957 and 58 approximately 1,000-gallons of fuel were released. To control the release, interceptor trenches were dug and the fuel was ignited. There is also evidence of a fuel release from an abandoned underground distribution line that supplied No. 6 fuel oil to a UST that fueled a boiler at the Mess Hall Heating Plant, located adjacent to "D" Street between Third and Fourth Streets.

During 1993 and 1994 an Interim RI and comprehensive RI were conducted at Site 35. The Interim RI identified elevated levels of petroleum hydrocarbon contamination in soils at three locations adjacent to the former fuel farm. The comprehensive RI began in March 1994 and was completed in July 1995. The comprehensive RI identified multiple plumes of fuel- and solvent-related groundwater contamination in the surficial aquifer. An Interim Feasibility Study (FS) and ROD were prepared that focused on fuel impacted soil at the site. A soil removal was conducted in 1995 and completed in the spring of 1996.

An IROD was signed in Fiscal Year 1995 for the shallow groundwater. The selected remedy addressed in the IROD was in-well aeration and off-gas adsorption. This remedy was intended to expedite the reduction of organic contaminants in the surficial aquifer.

Due to poor site conditions, lack of access, and a lack of BTEX contamination in groundwater east of the proposed highway, it was recommended that an in-situ air sparging system be constructed along the western edge of the proposed right-of-way. It was further recommended that the in-situ air sparging system be tested in a pilot phase prior to full-scale implementation. The pilot phase air sparging system is currently operating. A dye tracer test was completed in February 2000 and indicated groundwater flow was occurring through the air-sparging trench to the other side.

An NAE was conducted during Fiscal Year 2000. A Focused NAE for the wetlands at Site 35 will be conducted in the Fiscal Year 2002. A suspected area of free product in the northwest corner of the site will also be delineated during Fiscal Year 2002. Following these studies, the FS, PRAP, and ROD will be finalized also in Fiscal Year 2002.

Site 35 was incorporated into the monitoring program in October 1998. Groundwater monitoring with MNA is expected to continue through the Fiscal Year 2001.

## **2.11 Operable Unit No. 11 (Sites 7 and 80)**

The Final ROD for OU No. 11 was signed on August 21, 1997.

### **2.11.1 Site 7 - Tarawa Terrace Dump**

Site 7 is approximately 5 acres in size and is situated just south of the Tarawa Terrace community center between Tarawa Boulevard and Northeast Creek. Site 7 is a former dump that was used during the construction of the base housing located in Tarawa Terrace. Precise years of operation are unknown, but it has been reported that the dump was closed in 1972. Historical records do not indicate that hazardous materials were disposed at this facility; only construction debris, water treatment plant filter media, and household trash are known to have been disposed.

The RI field program at Site 7 was conducted in 1994 and consisted of a site survey; a soil investigation that included drilling and sampling; a groundwater investigation that included monitoring well installation and sampling; a surface water and sediment investigation; a habitat evaluation; and an earthworm bioaccumulation study. The pesticides dieldrin, 4,4'-DDE, 4,4'-DDT, and 4,4'-DDD were the most prevalent pesticide contaminants among the soil and sediment samples. Semivolatile contamination was detected in the north and eastern portions of the study area. Metals were the most prevalent and widely distributed contaminants in the groundwater. None of the contaminants detected was considered to pose a threat to human health or the environment. Accordingly, no additional remedial action or monitoring is planned for Site 7.

### **2.11.2 Site 80 - Paradise Point Golf Course Maintenance Area**

Site 80 is located northwest of Brewster Boulevard within the Paradise Point Golf Course, behind Building 1916. Information regarding past golf maintenance procedures is unknown; however, the facility is currently operating.

The initial phase of the RI field investigation commenced in October 1994 and continued through December 1994. A subsequent soil and groundwater investigation at Site 80 commenced in June 1995 and continued through July 1995. Based upon the results of the investigations, pesticides were the predominant contaminants at Site 80. Six of the eleven pesticides detected in soils at Site 80 were in 20 of the 55 samples analyzed.

Based on the risk assessment presented in the RI report, a TCRA was performed to remove soil contaminated with pesticides. The TCRA was completed during 1996. Remedial action levels were based upon Region III Risk-Based Concentrations for industrial workers, which resulted in a ten-fold increase in the action levels for dieldrin and aldrin, the drivers of the remedial effort. Approximately 988 tons of contaminated soils were excavated from Site 80.

After completion of the TCRA, a No Action Alternative was presented in the ROD signed in August 1997. No additional remedial action or monitoring is planned for Site 80.

### **2.12 Operable Unit No. 12 (Site 3)**

The Final ROD for OU No. 12 was signed on April 3, 1997 and was amended in Fiscal Year 1999. The Amended ROD includes a LUCIP and was signed on June 20, 2000.

### **2.12.1 Site 3 - Old Creosote Plant**

Site 3 is located on the mainside portion of MCB, Camp Lejeune, approximately one mile north of Wallace Creek along Holcomb Boulevard. Site 3 encompasses approximately 5 acres, is generally flat, and is intersected by a dirt access road. Remnants of a former creosote plant, including the chimney, concrete pads, and train rails, are present in the southern portion of Site 3. The creosote plant reportedly operated from 1951 to 1952 to supply treated lumber during construction of the Camp Lejeune Railroad. The former sawmill, which supplied the cut timbers for creosote treatment, was reportedly located in the cleared area in the northern portion of the Site 3. The treated lumber was used during construction of the Camp Lejeune Railroad.

The RI field investigation commenced in September 1994 and continued through December 1994. A follow-up phase of the RI field investigation was completed in June and July of 1995. Due to volatile and PAH contamination detected within the groundwater during the first round of sampling, additional monitoring wells were installed to further define the vertical and horizontal extent of contamination. Naphthalene was the only PAH constituent detected above applicable standards in the groundwater. PAH constituents were also detected among soil samples obtained from the site. The highest concentrations of PAHs occurred in the central portion of the site, the former treatment area. Fuel constituents, such as ethylbenzene and xylene, were also detected in surface and subsurface soils at Site 3, primarily at the former treatment area in the central portion of the site.

Based on the findings of the RI/FS, the recommended alternative presented in the ROD included excavation of contaminated soil, on-site treatment of the soil, and groundwater monitoring. An Amended ROD was prepared and submitted for approval during the first quarter of Fiscal Year 1999. The Amended ROD proposed that the excavated soil be taken off-site for disposal at a permitted facility in lieu of on-site treatment; however, due to a change in the regulatory status of creosote contaminated soils, other remediation options have been considered. These options include in situ solidification, monitored natural attenuation, and removal/on site treatment/off-site disposal.

The remedy, which included removal and disposal to base landfill, was selected and implemented in Fiscal Year 2000. The Final Amended ROD was signed on June 20, 2000. The Amended ROD also includes a LUCIP which implement aquifer and land use controls at Site 3. Semiannual monitoring of groundwater conditions at Site 3 will continue through Fiscal Year 2001.

### **2.13 Operable Unit No. 13 (Site 63)**

The Final ROD for OU No. 13 was signed on April 3, 1997.

#### **2.13.1 Site 63 - Verona Loop Dump**

Site 63 is comprised of approximately five acres and is located nearly two miles south of the MCAS, New River operations area. Site 63 is bordered to the south by Verona Loop Road, to the east by an unnamed tributary to Mill Run, and to the west by a gravel access road. Much of the site is heavily vegetated with dense understory and trees greater than three inches in diameter. Very little information is known regarding the history or occurrence of waste disposal practices at Site 63. The study area reportedly received wastes generated during training exercises. The type of materials generated during these exercises are described only as "bivouac" wastes. Additional information suggests that no hazardous wastes were disposed of at Site 63. The years during which disposal operations may have taken place are not known. Training exercises, maneuvers, and recreational hunting are frequently conducted in the area.

The RI field investigation of OU No. 13 was completed during November 1995. The RI field program at Site 63 consisted of a site survey, a soil investigation, a groundwater investigation, a surface water and sediment investigation, and a habitat evaluation. Positive detections of SVOCs, pesticides, and metals were observed in environmental samples obtained at Site 63. Pesticide concentrations were low (i.e., less than 0.1 mg/kg) and primarily limited to within and adjacent to the suspected disposal portion of the study area. The presence of SVOCs and pesticides is most likely the result of former or ongoing activities at Site 63.

Based upon the findings presented in the RI, there are no threats to human health and the environment from the contamination at Site 63. No additional remedial action or monitoring is planned for Site 63. LUCIPs were recommended for intrusive activities and aquifer use control, and were implemented in Fiscal Year 2000.

#### **2.14 Operable Unit No. 14 (Site 69)**

A Final Interim ROD (which includes a LUCIP) was signed for OU No. 14 on June 29, 2000.

##### **2.14.1 Site 69 - Rifle Range Chemical Dump**

Site 69 is located approximately one-quarter mile west of the New River in the Rifle Range area of MCB, Camp Lejeune. The site includes approximately 14 acres and is situated in a topographically high area. The former disposal area slopes downward in all directions from the central portion of the study area. From 1950 to 1976, the area was used to dispose of chemical wastes including PCBs, solvents, pesticides, calcium hypochlorite, and drums of "gas" that possibly contained CN (i.e., tear gas) or other training agents. Based upon background information, chemical training agents may be buried at this site.

The RI/FS at Site 69 commenced in 1992 and, after a number of supplemental investigations, concluded in 1995. Results from the RI indicate that groundwater is contaminated with solvent constituents. The groundwater contamination is believed to be centered in the south-central portion of the site and has not migrated extensively from the disposal area. Surface soil has not been impacted by the former disposal activities; however, it is believed that the top two feet of soil may be cover material that was placed over the debris. No intrusive investigations were conducted due to the potential for encountering chemical agents. Geophysical investigations have indicated buried metallic objects near the groundwater source area. It is likely that the buried material consists of drums or canisters that contain solvents. Surface water and sediment collected from the New River, Everett Creek, and an unnamed tributary north of the site have not been impacted by the former disposal operations.

A treatability study was initiated in March 1996 to assess the effectiveness of an innovative groundwater treatment technology called in-well aeration. After two years of operation and testing, in-well aeration was determined to be ineffective at reducing the number and concentration of contaminants in the groundwater aquifer.

During Fiscal Year 2000, a Final Interim ROD that identifies MNA and institutional controls as the most feasible treatment alternatives for the groundwater aquifer was signed. Institutional controls include aquifer and land use controls that will be implemented with a LUCIP. Groundwater monitoring will continue on a semi-annual basis. The Interim ROD will be in effect until it is feasible to remove the CWM from the site.

## **2.15 Operable Unit No. 15 (Site 88)**

A Focused RI was completed for Operable Unit No. 15 (Site 88) on May 15, 1998. An FS for Operable Unit No. 15 will be prepared during Fiscal Year 2002, followed by a PRAP and ROD. Site 88 was added to the monitoring program in Fiscal Year 1999.

### **2.15.1 Site 88 - Base Dry Cleaners**

Site 88 is located at the Base dry cleaners (Building 25) within a densely populated area of MCB, Camp Lejeune. Barracks, office buildings, and other occupied structures are located adjacent to Building 25. The USTs were installed in the 1940s and were used to store varsol, an early dry cleaning chemical. Tetrachloroethene replaced varsol in the 1970's and was stored in an AST. In the mid-1980's the AST was taken out of service. The tanks were removed between November 1995 and January 1996.

A Focused RI was completed that identified the limits of soil and groundwater contamination at the site. In general, contaminated soil appears to be concentrated beneath the building and the parking lot to the northwest near Building 43. Groundwater contamination extends to a depth 50 feet below ground surface and extends approximately 700 feet to the northwest. Isolated areas of free phase dense non-aqueous liquid (DNAPL) exist beneath Building 25 and areas immediately north of the building.

To address the DNAPL situation at Site 88, a partial free phase liquid recovery has been completed in addition to a pre-surfactant remediation characterization and delineation study. These studies have established the nature and extent of residual phase of DNAPL. Surfactant enhanced aquifer remediation (SEAR) was conducted to remove the residual phase DNAPL and some free phase DNAPL. This pilot program was completed in August 1999. The Final SEAR Report was issued January 25, 2000.

Site 88 was added to the monitoring program at Camp Lejeune with the first round of sampling conducted in April 1999. Analysis for natural attenuation parameters is part of this monitoring program. Groundwater monitoring with MNA is expected to continue through the Fiscal Year 2001. The FS will be completed in Fiscal Year 2002, followed by a PRAP and ROD in the following Fiscal Year 2003.

## **2.16 Operable Unit No. 16 (Sites 89 and 93)**

Operable Unit No. 16 consists of Site 89 (STC-868) and Site 93 (TC-942). A remedial investigation has been completed for both sites and was issued as final on June 15, 1998. Both sites were included in the monitoring program in Fiscal Year 1999.

### **2.16.1 Site 89 - (STC-868)**

Due the presence of chlorinated solvents detected during UST investigations, Site 89 has been further characterized by a remedial investigation under the IR Program. The site is located near the intersection of G and 8th Streets in the Camp Geiger area of MCB, Camp Lejeune. A UST containing waste oil was installed in 1983 and removed in 1993. UST investigations detected elevated levels of total petroleum hydrocarbon (TPH), oil and grease, and chlorinated solvents in soil and groundwater samples.

The RI was conducted in two phases in 1996 and in 1997. Activities under this investigation included the installation of temporary and permanent monitoring wells with associated soil and groundwater sampling. In addition, surface water and sediment samples were collected from Edwards Creek, which borders the southern portion of the site. The RI at Site 89 identified impact to the soil and groundwater at the site by chlorinated solvents. The majority of the groundwater contamination is located in the area of the Defense Reutilization Marketing Office (DRMO). The contaminant plume extends to approximately 50 feet below ground surface and extends approximately 1,200 feet east of the DRMO. In addition, solvents in the groundwater impacted Edwards Creek which is located along the southern boundary of Site 89.

Two immediate response field efforts were conducted: one in June and July 1999, and a second in October 1999. Activities included the installation of permanent monitoring wells and associated groundwater sampling, the collection of soil samples, and the collection of surface water and sediment samples. These investigations concluded that the extensive amounts of chlorinated solvents had impacted the immediate and surrounding areas of Site 89.

A follow up investigation was conducted in December 1999 to further delineate the extensive soil contamination in the southern portion of Site 89. Soil samples were collected from the southern portion of Site 89 both inside and outside the DRMO. This sampling event confirmed that extremely high levels of chlorinated solvents were impacting an extensive area within the southern portion of the site.

Based on this and follow up sampling events that were conducted at in March and April 2000, a TCRA will be completed in early Fiscal Year 2001 for the removal of the most contaminated soil. A mobile Low Temperature Thermal Desorption (LTTD) unit will be used to treat the contaminated soil. In addition, an aeration system will be installed in Edwards Creek to assist in the remediation of VOCs in the creek. This operation is anticipated to be ongoing through Fiscal Year 2001.

The contaminated media (soil and groundwater) that remains at Site 89 after the TCRA was addressed through a follow up EE/CA and remedial design. EE/CA field activities followed by the EE/CA document will be completed by May 2001. The selection of a remedial alternative, design, and implementation of the selected remedy are expected to be completed during Fiscal Year 2002.

Following implementation of residual soil and groundwater remediation, a RI will be conducted for the northern portion of the DRMO area because it has not been fully characterized. Based on data from the remedial actions and the northern area RI, FS, PRAP, and ROD for all of Site 89, it is expected to be completed in the Fiscal Year 2003.

Site 89 was added to the monitoring program in April 1999 where MNA is conducted on a semi-annual basis and is expected to continue through Fiscal Year 2001.

#### **2.16.2 Site 93 - (TC-942)**

Site 93 is located northwest of the intersection of "E" and 10th Streets at Camp Geiger. The site consisted of one UST that was used to store used oil. The UST was removed in December 1993. Subsequent investigations detected chlorinated solvents, and oil and grease compounds at the site. In addition, cadmium and lead were detected at concentrations exceeding state groundwater standards.

The remedial investigation identified shallow groundwater contamination in the area near the former UST. The impact to the groundwater at Site 93 is not as severe as what was discovered at Site 89. The depth, concentration, and the areal extent of contamination are much less at Site 93. Because of the significant contamination at Site 89, the completion of the evaluation of Site 93 will be done separately. An FS will be completed during Fiscal Year 2001 with PRAP and ROD completion anticipated for the following fiscal year.

Site 93 was added to the monitoring program in April 1999. Groundwater monitoring with MNA is expected to continue through the Fiscal Year 2001. The projected completion of the FS, PRAP, and ROD will occur in Fiscal Year 2002.

### **2.17 Operable Unit No. 17 (Sites 90, 91, 92)**

Operable Unit No. 17 is located in the southeast portion of MCB, Camp Lejeune in the Courthouse Bay Complex. Sites 90, 91, and 92 are all former UST program sites that have been placed on the IR Program list because contaminants not typically related to petroleum UST sites were detected. Each of the sites was investigated under the IR Program through a Focused RI completed in April 1997. As a result of the findings of the Focused RI, additional sampling was completed in September 1999. The Final Focused RI was submitted in Fiscal Year 2000.

#### **2.17.1 Site 90 - (BB-9)**

Site 90 contained three USTs used to contain heating oil. These tanks were removed in March 1993. Subsequent investigations confirmed the presence of soil and groundwater contamination. The Focused RI field activities detected toluene in the soil samples. Groundwater samples were collected from existing and newly installed temporary monitoring wells. The laboratory analysis of these samples only detected chloroform, which is not suspected to be a site related compound.

Additional groundwater samples were collected from permanent monitoring wells to confirm the presence or absence of suspected a non-site related compound. A Supplemental Groundwater Report was issued and commented on by all reviewing parties. The comments were incorporated into the Final Focused RI Report.

Three temporary wells were installed around a monitoring well that had detectable concentrations of TCE during the Supplemental Groundwater Study. These wells were installed to delineate the possible TCE plume. Samples from the three temporary wells did not contain TCE and, therefore, no further actions were required.

Site 90 will likely be included into the monitoring program starting in Fiscal Year 2001.

#### **2.17.2 Site 91 - (BB-51)**

Site 91 contained one UST that was removed in August 1992. At the time of the UST closure, TPH contamination was detected in the soil samples. The groundwater samples collected during the Focused RI detected tetrachloroethene (PCE); however, the concentrations were below state and federal standards. Additional groundwater samples were collected from permanent monitoring wells to confirm the presence or absence of suspected a non-site related compounds. A supplemental groundwater report was issued and commented on by all reviewing parties. The comments were incorporated into the Final Focused RI Report.

Site 91 was entered into the monitoring program starting in July 2000. Groundwater monitoring is expected to continue through the Fiscal Year 2001.

### **2.17.3 Site 92 - (BB-46)**

Site 92 contained one UST that was installed in 1980 and used to store gasoline. The tank was deactivated in 1989 and removed in January 1994. A subsequent site investigation identified the presence of chlorinated hydrocarbons in the groundwater. Soil and groundwater samples were collected from existing and newly installed temporary monitoring wells as part of the Focused RI. There were no volatile organic compounds detected in the soil samples. Only chloroform was detected in the groundwater samples.

Site 92 was entered into the monitoring program starting in July 2000. Groundwater monitoring is expected to continue through the Fiscal Year 2001.

### **2.18 Operable Unit No. 18 (Site 94)**

To date, there has been no IR Program investigations conducted at Site 94. Investigations and ongoing remedial actions at the site have been completed under the UST Program. Draft Project Plans were completed in 1998 and are awaiting comment. A RI is anticipated for Operable Unit No. 18 during Fiscal Year 2003. Additional submittals will depend on the results of the RI.

#### **2.18.1 Site 94 - PCX Service Station**

Site 94 is located within the HPIA. Four gasoline USTs were reportedly installed during the 1950s northeast of Building 1613. The tanks supplied various grades of gasoline to the service station. All of the USTs were removed on January 13, 1995. Hydrocarbon contamination of the subsurface soil was confirmed at the site during the UST removal. Further investigations at the site have identified free phase hydrocarbons and chlorinated solvent related contaminants.

Dissolved purgeable aromatic constituents were identified and delineated in the area of the former UST basin and the free product plume areas. Dissolved purgeable halocarbon compounds were identified at concentrations exceeding North Carolina groundwater standards in three isolated areas, suggesting multiple sources. In addition, the vertical extent of purgeable halocarbons is at least 50 feet below ground surface. The extent of the chlorinated hydrocarbon plume is not defined.

### **2.19 Operable Unit No. 19 (Site 84)**

#### **2.19.1 Site 84 - Building 45 Area**

Site 84, including the former powerhouse, is located approximately 200 yards south of Highway 24 on the main side of MCB, Camp Lejeune, and one mile west of the main gate. The study area lies east of Northeast Creek. The site area is mostly wooded and vegetated, covered by thick vegetation and grass. There is a small lagoon, possibly manmade, hidden by trees near the center of the site. The lagoon is roughly circular in shape with a diameter of approximately 50 feet. There are no direct access roads and access to the site is restricted by locked gates. The site is relatively flat with some minor surface mounds in the wooded areas. Overland surface water drainage is west in the direction of Northeast Creek.

The site includes a former electrical powerhouse. Transformers reportedly containing PCBs were known to have been used and possibly stored at the powerhouse. A transformer was discovered near the wooded area, east of the powerhouse. Additional transformers (approximately 20) potentially containing PCB transformer oil were discovered near the woods, east of the powerhouse. Maintenance personnel at Building 45 have indicated that additional transformers may still be buried in areas near the lagoon; however, it was reported that public works had performed minor excavations in the area and did not discover any waste materials.

Baker conducted soil, groundwater, surface water and sediment sampling activities in October 1995 as part of a Site Investigation (SI). Additional sampling was performed in March 1998. Samples were analyzed for TCL PCBs only. From the results of the sampling performed at the site, it is obvious that the site has been adversely impacted by PCB contamination. PCBs have been detected at levels above 500 parts per billion (ppb) in soil collected from around the lagoon, and in surface water and sediment (above 1,000 ppb) collected from within the lagoon. A Pre-RI Screening Study was conducted in 1998 to initially characterize the site.

An EE/CA was prepared on January 15, 1999. Based on delineation sampling that was conducted for the EE/CA, it was concluded that the extent of the contamination warranted an RI/FS. Two USTs have been removed from the site under the UST Program and have been followed up with soil vapor extraction/air sparging treatment

Building 45 was demolished in August/September 1999. Baker conducted concrete sampling and surface water sampling at Building 45 in August 1999. Additional field activities in Fiscal Year 2000 included fencing and engineering controls to prevent intrusion into the basement.

The project plans for the RI/FS were submitted by Baker during the Fiscal Year 2000. It is anticipated that the RI/FS field investigation will be initiated during FY 2001.

## **2.20 Operable Unit No. 20 (Site 86)**

### **2.20.1 Site 86 - Tank Area AS419-AS421**

Site 86 is located on the southwest corner of the Foster and Campbell Street intersection, within the operations area of MCAS New River. The site is comprised of a lawn area surrounded by buildings, asphalt roads, and parking lots. Site 86 served as a storage area for petroleum products from 1954 to 1988. In 1954, three 25,000-gallon ASTs were installed within an earthen berm. The three tanks were reportedly used for No. 6 fuel oil storage until 1979. From 1979 to 1988 the tanks were used for temporary storage of waste oil. The three tanks were emptied in 1988 and were removed in 1992. Today, the former location of the tanks is grass-covered and only a very slight depression remains.

The RI field investigation at Site 86 commenced in February 1995 and continued through May 1995. Volatile and semivolatile organic compounds were detected in both surface and subsurface soil samples. The majority of SVOCs detected in soil samples were PAH compounds. Based upon the initial results from the RI, additional wells were installed at Site 86 in 1997 and 1998. The groundwater monitoring wells were installed in locations to better define the limits of the identified plumes and to determine VOC contaminant migration.

Site 86 was added to the monitoring program in 1998. Since that time, groundwater samples have been collected on a quarterly basis. In June 2000 Baker recommended that Site 86 be further evaluated based on the increased levels of TCE, as noted during monitoring, in a downgradient

intermediate well. The data also suggested that the TCE plume may be migrating as indicated by several downgradient wells. Subsequently, it was decided at the July 2000 IR Partnering Meeting that Site 86 would be permanently removed from OU No. 6 and a new OU, No. 20, would be created for this site.

## **2.21 Pre-Remedial Investigation Sites**

This section discusses sites that have been assessed through Pre-RIs. It is important to note that these Pre-RI sites are not required to adhere to the same reporting requirements as defined in the Camp Lejeune FFA for RI/FS sites. If these sites warrant further investigation based on the Pre-RI results, the sites will be added to the FFA list of RI/FS sites.

### **2.21.1 Site 10 - Original Base Dump**

Site 10 covers approximately 5 to 10 acres. It was operated prior to 1950 and was mainly used as construction debris and as a burn dump. It is located to the west of Open Storage Lot 203 along Holcomb Boulevard. This site was recently added to the IR Program when it was reported that two marines developed skin rashes after contacting a heavy oily material that may have been at the site. Project plan development for this site was completed in September 1997. This site was investigated through the completion of a SI in 1998. Results of the SI indicated minimal impact to soil, sediment, surface water, and groundwater at the site. Additional investigative activities are required prior to issuing the Final SI.

### **2.21.2 Site 12 - Explosive Ordnance Disposal**

Site 12 covers approximately 8 to 10 acres. During the early 1960s, ordnance was disposed by burning or detonating when it was found to be inert, unserviceable, or defective. Materials disposed included ordnance, colored smokes, and white phosphorous. Any undestroyed residues were typically less than one pound. Baker conducted soil and groundwater sampling activities in January and February 1996. Results indicate that neither soil nor groundwater has been significantly impacted by site activities. A Pre-Final No Further Action (NFA) Memorandum Decision Document was completed in Fiscal Year 2000 for this site. This decision document indicates that all investigations or activities for the IR Program for Site 12 are complete. Because Site 12 is an active range, it will now fall under the Navy's Active Range Program. The Final NFA will be completed in Fiscal Year 2001.

### **2.21.3 Site 68 - Rifle Range Dump**

The Rifle Range Dump is located west of Range Road approximately 2,000 feet west of the Rifle Range water treatment plant and 800 feet east of Stone Creek. This 3- to 4-acre area was used as a disposal site for various types of wastes, including garbage, building debris, waste treatment sludge, and solvents. The site was utilized as a disposal facility from 1942 to 1972. The depth of the fill area is approximately 10 feet, and the amount of material deposited has been estimated to be 100,000 cubic yards.

Organic compounds were identified in potable supply wells RR-45 and RR-97 located near the site. Even though these wells are located upgradient from the site, it was suspected that continuous pumping may have drawn contaminants to the wells. Baker conducted soil, groundwater, surface water, and sediment sampling activities in January and February 1996 with additional samples collected in March 1998.

Results indicated that none of the media sampled have been significantly impacted by site activities; however, because groundwater contains excessive levels of iron and manganese, aquifer and land use restrictions are included as part of this No Further Remedial Action Plan (NFRAP). A Final NFRAP Decision Document, which includes a LUCIP to implement aquifer and land use controls, was completed in Fiscal Year 2000. Final concurrence for this NFRAP is anticipated in Fiscal Year 2001.

#### **2.21.4 Site 75 - MCAS Basketball Court Site**

The MCAS Basketball Court Site is located along the north side of Curtis Road. This site was reportedly a drum burial area that was used on at least one occasion in the early 1950s. The excavation as seen in an aerial photograph was an oval shaped pit approximately 90 feet long by 70 feet wide and was sufficiently deep to have encountered the water table. An estimated 75 to 100 55-gallon drums were placed in this pit. The drums reportedly contained a chloroacetophenone tear gas solution used for training. Additional organic chemicals, such as chloroform, carbon tetrachloride, benzene, and chloropicrin, may have been present in the solution. Degradation of the drums could have resulted in the release of the suspected materials into the groundwater. This was of particular concern due to the proximity of several water supply wells in the area, two of them within 500 feet of the alleged disposal site.

Baker conducted soil and groundwater sampling activities in January and February 1996. In addition, a comprehensive geophysical survey was performed. The geophysical survey did not indicate that either soil or groundwater has been significantly impacted. The geophysical survey did not indicate any major subsurface anomalies that could have been the suspected drums. A Final NFA Memorandum Decision Document was completed in Fiscal Year 2000. Final concurrence for this NFRAP is anticipated in Fiscal Year 2001.

#### **2.21.5 Site 76 - MCAS Curtis Road Site**

The MCAS Curtis Road Site is located in the vicinity of and along the north side of Curtis Road. The precise location of the site is unknown, and two possible locations have been identified based on interviews and aerial photography. This alleged dump site was reportedly used as a drum disposal area on two occasions in 1949. The estimated area of the disposal unit is 1/4 acre and approximately 25 to 75 55-gallon drums were allegedly involved. It is believed that the drums contained a chloroacetophenone tear gas agent similar to that allegedly buried in the MCAS Basketball Court Site (Site 75). Potential contaminants are chloroform, carbon tetrachloride, benzene, and chloropicrin.

Baker conducted soil and groundwater sampling activities in January and February 1996. Additional groundwater data was collected in March of 1998. In addition, a comprehensive geophysical survey was also performed. The geophysical survey did not indicate that either soil or groundwater has been significantly impacted. The geophysical survey did not indicate any major subsurface anomalies that could have been the suspected drums. In response to an agency comment, groundwater was sampled again in October 1999 due to previous detections of metals above screening criteria. This data showed some metals above screening criteria but within range of the natural background of groundwater at Camp Lejeune. A Draft NFA Memorandum Decision Document was completed in Fiscal Year 2000. Final concurrence for this NFRAP is anticipated in Fiscal Year 2001.

### **2.21.6 Site 85 - Camp Johnson Battery Dump**

The Camp Johnson Battery Dump was recently discovered off Wilson Drive in the Montford Point Area during road repairs. Decomposed batteries, which were used in military communication equipment during the Korean era, were unearthed as a roadway was being widened. Military personnel utilizing this area also discovered discarded charcoal canisters from old air purifying respirators. The discarded battery packs and charcoal canisters were observed in piles, randomly located throughout a 2 to 3 acre area.

Baker conducted soil and groundwater sampling activities in August 1995. Results indicated that soil in the vicinity of the battery disposal piles has been impacted by metals leaching from the batteries. Removal of the soil and battery packs was recommended as part of a TCRA. Based upon recent comments by the USEPA (Region IV) an EE/CA was completed September 10, 1999, and an Action Memorandum was completed September 17, 1999. The removal action was completed in Fiscal Year 2000. A NFRAP Memorandum Decision Document will be completed in Fiscal Year 2001.

### **2.21.7 Site 87 - MCAS Officer's Housing Area**

The MCAS Officers' Housing Area site (formerly Site A) is located on the west bank of the New River. This area was identified during the second round of sampling conducted in 1986. Waste was identified eroding out of a cut bank along the New River in the vicinity of an officers' housing area. The materials were tentatively identified as hospital wastes. Various hospital waste materials were noted, including hypodermic needles and vials of white powder that were believed to contain a chlorine-based substance. No information was available regarding the volume of the waste or the mode of disposal.

Baker conducted soil, groundwater, surface water, sediment, and test pit sampling activities in October 1995 (groundwater, soil, surface water, and sediment) and February 1996 (test pits). Results indicate that none of the media sampled has been significantly impacted by site activities. In response to an agency comment, groundwater was sampled again in October 1999 due to a previous detection of pentachlorophenol (PCP). No PCP was detected in groundwater from the October 1999 sampling event. A Draft NFA Memorandum Decision Document was completed for Site 87 in Fiscal Year 2000. Final concurrence for this NFA is anticipated in Fiscal Year 2001.

### 3.0 SITE MANAGEMENT SCHEDULES

The purpose of this section is to present project schedules for Fiscal Years 2001 through 2003. These schedules are adjusted annually within the SMP or periodically throughout the fiscal year. Operable Units and sites that will be active during Fiscal Year 2001 are summarized below.

Operable Unit	Site	Fiscal Year 2001 Activities
1	78	Groundwater pump and treatment (Site 78 North); monitoring with monitored NA (Site 78 North and South); and NAE study at Site 78 North
2	82	Groundwater pump and treatment; monitoring of surficial and Castle Hayne aquifers, and surface water
3	48	No action
4	41 74	Monitoring of surficial aquifer and surface water No action
5	2	Monitoring of surficial aquifer
6	36 and 54 43 and 44	Final ROD; monitoring with monitored NA; and remedial action (Site 54) Final ROD
7	1 and 28	Monitoring of surficial aquifer
8	16	No action
9	65 73	ROD Final FS, PRAP, and ROD; monitoring with monitored NA; and remedial design of groundwater
10	35	Monitoring with monitored NA of surficial aquifer
11	7 and 80	No action
12	3	Monitoring of surficial aquifer
13	63	No action
14	69	Monitoring of surficial and Castle Hayne aquifers
15	88	Monitoring with monitored NA of surficial and Castle Hayne aquifers
16	79 93	Complete TCRA, EE/CA and design of residual contamination; and monitoring with monitored NA of surficial and Castle Hayne aquifers Monitoring with monitored NA of surficial and Castle Hayne aquifers
17	90, 91, and 92	Final ROD; and monitoring (Sites 91 and 92)
18	94	No Action
19	84	Complete project plans and initiate RI
20	86	Initiate the amended RI and FS; PRAP; monitoring with monitored NA of surficial and Castle Hayne aquifers

The project schedules for active OUs are presented in Tables 3-1 through 3-16. A project schedule for Pre-RI sites is presented in Table 3-17. The project schedules include a detailed listing of activities projected for Fiscal Year 2001 through 2003; the duration of each IR Program activity; the deliverables (e.g., RI/FS Project Plans, RA Work Plans, etc.); and submittal dates. A listing of deliverables projected for Fiscal Year 2001 through 2003 by Operable Unit is summarized in Table 3-18. Table 3-19 provides a list of deliverables projected, by month, for Fiscal Year 2001

through 2003 IR Program. It should be noted that not all of the dates are available at this time for all future document submittals. These dates are listed as TBD (to be determined) and will be updated in future deliveries of the SMP.

The project schedules for most of the OUs reflect government/agency review times specified in the FFA. These review durations are as follows.

- Draft Documents: 60 days to review and 60 days to prepare and submit the Final document.
- Per-Final Documents (ROD only): 30 days to review and 30 days to finalize. Pre-Final documents will become final if no comments are received within 30 days unless an extension is requested in accordance with the FFA.
- The project schedule for Remedial Design/Remedial Action (RD/RA) activities cannot be established until the RI/FS is completed. For remedial design activities, project duration of 15 months has been established because Section 120(e)(2) of CERCLA requires that remedial action activities begin within 15 months following the ROD.
- The project schedule for sites where long-term monitoring has been implemented do not indicate a government review period. Reports submitted for a long-term monitoring event are used to document recommendations and modifications to the long-term sampling requirements. Comments will be requested to implement modifications or at the five-year review period.

























Table 3-9  
 Fiscal Year 2001 Site Management Plan, CTO-0120  
 Operable Unit No. 12 (Site 3), MCB Camp Lejeune, North Carolina

Task Name	Duration	Start	Finish	2000												2001												2002												2003											
				J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F			
Remedial Action-Soil Removal	22 days	6/30/00	7/31/00	■																																															
Semi-Annual Monitoring Period	181 edays	7/3/00	12/31/00	■																																															
Field Investigation	21 edays	7/10/00	7/31/00	■																																															
Semi-Annual Monitoring Report	62 edays	8/1/00	10/2/00	■																																															
Semi-Annual Monitoring Period	180 edays	1/1/01	6/30/01													■																																			
Field Investigation	21 edays	1/10/01	1/31/01													■																																			
Annual Monitoring Report	30 edays	3/3/01	4/2/01													■																																			
Semi-Annual Monitoring Report	61 edays	2/1/01	4/3/01													■																																			
Semi-Annual Monitoring Period	182 edays	7/2/01	12/31/01													■																																			
Field Investigation	21 edays	7/10/01	7/31/01													■																																			
Semi-Annual Monitoring Report	62 edays	8/1/01	10/2/01													■																																			
Semi-Annual Monitoring Period	180 edays	1/1/02	6/30/02																									■																							
Field Investigation	21 edays	1/10/02	1/31/02																									■																							
Annual Monitoring Report	30 edays	2/27/02	3/29/02																									■																							
Semi-Annual Monitoring Report	61 edays	2/1/02	4/3/02																									■																							
Semi-Annual Monitoring Period	183 edays	7/1/02	12/31/02																									■																							
Field Investigation	21 edays	7/10/02	7/31/02																									■																							
Semi-Annual Monitoring Report	62 edays	8/1/02	10/2/02																									■																							
Semi-Annual Monitoring Period	180 edays	1/1/03	6/30/03																																					■											
Field Investigation	21 edays	1/10/03	1/31/03																																					■											
Annual Monitoring Report	30 edays	3/1/03	3/31/03																																					■											
Semi-Annual Monitoring Report	61 edays	2/1/03	4/3/03																																					■											
Semi-Annual Monitoring Period	183 edays	7/1/03	12/31/03																																					■											
Field Investigation	21 edays	7/10/03	7/31/03																																					■											
Semi-Annual Monitoring Report	62 edays	8/1/03	10/2/03																																					■											





























#### **4.0 REMOVAL ACTIONS AND INTERIM REMEDIAL ACTIONS**

Removal actions are taken to prevent immediate and substantial harm to human health. Examples of removal actions include site-control fencing, removal of waste containers on-site, and removal of buried drums. Interim remedial actions are conducted to prevent a potential release of contaminants or to limit further migration of contaminants.

##### **4.1 Operable Unit No. 1 (Site 21)**

A soil removal action was implemented at Site 21 to remove pesticide and PCB contaminated soil. Initial excavation in three AOCs was performed during Fiscal Year 1995. A total of 811 tons of contaminated soil were removed from the site.

##### **4.2 Operable Unit No. 2 (Sites 6 and 9)**

A TCRA was conducted for the removal of the debris and contaminated soil in 1994 at Site 6. Twenty drums of DDT were removed and contaminated soil was excavated during the removal action. Another TCRA was conducted in 1995 to remove drums, batteries, and communications wire. This removal action included six AOCs of POL contaminated soil.

Contaminated POL soil was removed during excavation work for the installation of the new Spill Training Pit at Site 9. This removal action was completed in Fiscal Year 2000.

##### **4.3 Operable Unit No. 5 (Site 2)**

A TCRA was initiated in January 1994. The TCRA involved the excavation and off-site treatment of pesticide contaminated soil and concrete. A total of 1,049 tons of pesticide contaminated soils were excavated and sent for off-site disposal.

##### **4.4 Operable Unit No. 6 (Sites 36)**

During Fiscal Year 1998, a removal action was performed at Site 36. Soil contaminated with PCBs was excavated from the western-most portion of the study area. Approximately 240 tons on non-regulated and regulated PCB-contaminated soils were removed.

##### **4.5 Operable Unit No. 10 (Site 35)**

A removal action for hydrocarbon contaminated soils was performed from September 1995 to May 1996. Approximately 15,700 tons of hydrocarbon contaminated soil were shipped off-site for recycling disposal.

An interim remedial action, IAS trench, at Site 35 was installed in February 1998. Support was provided to LANTDIV throughout the 6-month trial operation phase of the IAS system. Based upon a review of this IAS data, the trial phase was extended three months so that additional evaluation of the system may be performed. The IAS system operated through Fiscal Year 2000 and is still operating. A dye tracer test was completed in February 2000 and indicated groundwater was flow was occurring through the air-sparging trench to the other side.

In August 2000, 600 cubic yards of POL contaminated soil were removed from the site and temporarily stored at the Camp Geiger Biocell. A release of fuel from a former underground pipeline occurred when the pipeline was accidentally severed during the construction of the new highway. An emergency removal action was implemented to excavate the contaminated soils around the release.

#### **4.6 Operable Unit No. 20 (Site 43)**

During 1995, a TCRA for surficial metallic debris at Site 43 was conducted. Project activities involved the removal of all surficial metallic debris, including empty drums, various scrap metal, and an old tank vehicle. Additionally, four drums (1400 lbs.) of hazardous materials were shipped off-site for disposal.

#### **4.7 Operable Unit No. 11 (Site 80)**

The TCRA was completed during 1996. Remedial action levels were based upon Region III Risk-Based Concentrations for industrial workers, which resulted in a ten-fold increase in the action levels for dieldrin and aldrin, the drivers of the remedial effort. Approximately 988 tons of contaminated soils were excavated from Site 80.

#### **4.8 Operable Unit No. 15 (Site 88)**

During Fiscal Year 1999, an interim action was completed at Site 88. Surfactants were employed to remediate DNAPLs from much of the contaminated portion of the shallow aquifer. Surfactants were injected into the shallow aquifer and then extracted with the contaminants. The on-site operations for the SEAR test and post-SEAR partitioning interwell tracer test (PITT) were completed in August 1999. The results of these operations were reported during Fiscal Year 2000 (January 2000).

Future remedial actions are also anticipated at Site 88 for the residual soil and groundwater contamination. These actions are anticipated to be initiated by Fiscal Year 2002.

#### **4.9 Operable Unit No. 16 (Site 89)**

A Non-TCRA was initiated in Fiscal Year 2000 and will be completed in early Fiscal Year 2001. The most contaminated soil (i.e., hot spot source area) within the southern portion of the site will be excavated and treated using a LTTD technology. An aeration system will be installed in Edwards Creek to assist in the remediation of VOCs in the creek. This operation is anticipated to be ongoing through Fiscal Year 2001. In addition, new fencing was also installed in areas south of the site and along Edwards Creek to minimize access to the site and creek.

Residual soil and groundwater contamination within the southern portion of the site will be remediated during Fiscal Year 2002. Future remedial actions are also anticipated for the northern portion of the site to address potentially impacted soil and groundwater.

#### **4.10 Pre-Remedial Investigation Sites**

During Fiscal Year 2000, a removal action was completed for Site 85. Several battery piles at Site 85 were removed based on recommendations of the Final EE/CA for this site. The final close out report from this removal was submitted in February 2000.

## **5.0 RESOURCE CONSERVATION AND RECOVERY ACT SITES**

### **5.1 Program Summary**

MCB, Camp Lejeune was issued a RCRA Part B permit to operate a hazardous waste container storage facility in September 1984 for the long-term hazardous material/hazardous waste container storage facility (Buildings TP-451 and TP-463). A revised permit was issued on January 10, 1997 which included corrective actions at all Solid Waste Management Units (SWMUs). The USEPA Region IV and the NC DENR conducted an initial RCRA Facility Assessment (RFA) for the base in January 1989. MCB, Camp Lejeune took the initial RFA and expanded it to include units such as landfills, surface impoundments, waste piles, tanks, container storage, septic tanks, drain fields, waste water treatment units, and storm water conveyances.

The 1996 RFA identified 41 IR sites, 112 underground storage tank sites, and 56 SWMU sites that required confirmatory sampling or corrective measures. Based on discussions between NC DENR and the base, it was determined that 62 SWMUs needed confirmatory sampling. This total included the 7 IR sites.

The confirmatory sampling even consisting of a soil, surface water, and/or sediment investigation was conducted in September 1997. Analytical results from soil samples collected during the Phase I confirmatory sampling were compared to USEPA Region III Residential Risk Based Concentrations (RBCs), NC DENR Method I Category S-2 Target Concentrations, NC DENR Method I Category S-3:G-1 Target Concentrations (soil to groundwater pathway), and base background for inorganics. Based on detected inorganics and their concentrations, specifically arsenic, cadmium, lead, and mercury, NC DENR suggested that the comparison criteria/standards used for the evaluation of inorganics may not have been entirely appropriate. This suggestion was based on two main points of contention. The data gathered at MCB, Camp Lejeune during several RI studies may not adequately represent base background conditions. The second point was that it may be more prudent to establish SWMU-specific soil to groundwater target concentrations instead of using the NC DENR Method I Category S-3:G-1 Target Concentrations which are based on default values and not site-specific conditions.

It was decided that a new base background study should be conducted at MCB, Camp Lejeune. Soil samples will be collected from various locations throughout MCB, Camp Lejeune in areas not impacted by base activities to determine a base background concentration for inorganics. In addition, it was determined that a background study should be conducted in the vicinity of the SWMUs to establish SWMU-specific background conditions. Based on this new evaluation/comparison, determinations will be made as to which SWMUs require investigation as part of the Phase II Confirmatory Study Investigation. The background study is anticipated to be completed in early Fiscal Year 2001. Following completion of that study, the Phase I Confirmatory Study Investigation Report will be finalized in mid-Fiscal Year 2001.

### **5.2 Remedial Action Summary**

Removal actions or planned actions have occurred or will be occurring at several of the SWMU sites. Removal actions and/or institutional controls at SWMU 291, SWMU 299, SWMU 310, and SWMU 339 have either been completed or contracts to complete the actions have been implemented. A summary of these SWMUs are provided below.

### **5.2.1 SWMU 291 – 034 Ditch**

MCB, Camp Lejeune initiated a contract to delineate the contaminated area, remove the contaminated soil, and backfill the area to prevent surface water accumulation. This work is anticipated to be completed by Fiscal Year 2001.

### **5.2.2 SWMU 299 – AS 114 Aboveground Storage Tank MCAS Auto Hobby Shop**

In Fiscal Year 2000, the tank exterior and overflow containment were cleaned. Surrounding contaminated soil was removed replaced with clean soil. Procedures were also established to collect POLs in a small portable container within the shop area, which subsequently will be emptied into the AST by employees of the hobby shop. Future plans will involve relocating the AST to an adjacent concrete pad and constructing a secondary containment system.

### **5.2.3 SWMU 310 – PT33 Pond Oil Water Separator**

Concrete pad pits were removed from the site in Fiscal Year 1998. MCB, Camp Lejeune initiated a contract in Fiscal Year 2000 to delineate the contaminated area associated with the pad and remove the contaminated soil.

### **5.2.4 SWMU 339 – AS 4146 Sandblasting Area**

The Phase I SWMU Confirmation Sampling Report recommended that controls be implemented to prevent the migration of contaminated sand and grit to the storm water collection system. In Fiscal Year 2000, a high-pressure baking soda paint remover replaced the former sand blasting method. A new wash rack and associated oil/water separator has also been constructed.

### **5.2.5 SWMU 358 – Sneads Ferry Road Battery Dump**

This site was discovered on May 8, 2000. The site is located near the intersection of Main Service Road and Sneads Ferry Road, and lies northeast of the Base's soil borrow pit. The area is clear of vegetation and is primarily in a sandy geology. The SWMU was initially reported to the Environmental Compliance Division (ECD) at Camp Lejeune by a jogger who saw a few batteries. Upon inspection, ECD contacted the RCRA Branch at Camp Lejeune who then filled two 55-gallon drums with batteries. Following that action, the IR Division was alerted and began notification/remediation procedures established through the Facility's RCRA Permit. A letter of notification was sent to NC DENR and USEPA Region IV.

The SWMU encompasses an area approximately 15 feet long and 20 feet wide and extends to an estimated depth of six to eight feet. It contains an undetermined quantity of lithium, magnesium, and nickel-cadmium batteries. Historically, battery dumps at Camp Lejeune contain 150 to 200 tons of batteries. The affected area has been fenced off and the borrowing pit operator notified to prevent any intrusive activities at the SWMU. To prevent the any further releases of contaminants to the environment, the Camp Lejeune plans on performing a RCRA Interim Measure (IM) to remove the batteries and associated soil. This action is anticipated to be completed by early Fiscal Year 2001.

## 6.0 REFERENCES

Baker, 1992. Draft Operable Unit Prioritization Report for MCB, Camp Lejeune, North Carolina. April 24, 1992.

Camp Lejeune Federal Facility Agreement. February 1991.

ESE, 1990. Final Site Summary Report, MCB, Camp Lejeune, North Carolina. September 1990.

**TABLES**

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TABLE 1-1

**INSTALLATION RESTORATION PROGRAM SITES  
FISCAL YEAR 2001 THREE YEAR REVIEW, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Site No.	Site Description
1	French Creek Liquids Disposal Area
2	Former Nursery/Day-Care Center
3	Old Creosote Site
6	Storage Lots 201 and 203
7	Tarawa Terrace Dump
9	Fire Fighting Training Pit at Piney Green Road
10 <sup>(1)</sup>	Original Base Dump
12 <sup>(1)</sup>	Explosive Ordnance Disposal (EOD-I, formerly known as G-4A)
16	Montford Point Burn Dump
21	Transformer Storage Lot 140
22 <sup>(2)</sup>	Industrial Area Tank Farm
24	Industrial Area Fly Ash Dump
28	Hadnot Point Burn Dump
30	Sneads Ferry Road - Fuel Tank Sludge Area
35	Camp Geiger Area Fuel Farm
36	Camp Geiger Area Dump near Sewage Treatment Plant
41	Camp Geiger Dump near Former Trailer Park
43	Agan Street Dump
44	Jones Street Dump
45 <sup>(2)</sup>	Campbell Street Underground AVGAS Storage and Adjacent JP Fuel Farm at Air Station
48	MCAS New River Mercury Dump Site
54	Crash Crew Fire Training Burn Pit
63	Verona Loop Dump
65	Engineer Area Dump
68 <sup>(1)</sup>	Rifle Range Dump
69	Rifle Range Chemical Dump
73	Courthouse Bay Liquids Disposal Area
74	Mess Hall Grease Pit Area
75 <sup>(1)</sup>	MCAS Basketball Court Site
76 <sup>(1)</sup>	MCAS Curtis Road Site
78	Hadnot Point Industrial Area
80	Paradise Point (Golf Course Maintenance Area)
82	VOC Disposal Area at Piney Green Road
84	Building 45 Area
85 <sup>(1)</sup>	Camp Johnson Battery Dump
86	Tank Area AS419-AS421 at MCAS

**TABLE 1-1**  
**(Continued)**

**INSTALLATION RESTORATION PROGRAM SITES**  
**FISCAL YEAR 2001 THREE YEAR REVIEW, CTO-0120**  
**MCB, CAMP LEJEUNE, NORTH CAROLINA**

Site No.	Site Description
87 <sup>(1)</sup>	MCAS Officer's Housing Area (formerly Site A)
88	Building 25
89	STC-868
90	Building BB-9
91	Building BB-51
92	Building BB-46
93	TC-942
94	Building 1613

Note: Additional sites may be added if the need to perform an RI/FS is identified and a corresponding modification to the Federal Facilities Agreement is approved.

- <sup>(1)</sup> Pre-Remedial Investigation Site (initial investigations will determine the need to conduct an RI/FS).
- <sup>(2)</sup> Underground Storage Tank Site (ongoing efforts conducted as part of UST Program).

TABLE 1-2

INSTALLATION RESTORATION PROGRAM ACTIVITIES  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO 0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

OU No.	Site No.	NFA	NFRAP	RA	TS	SI	RI	FS	PRA P	EE/CA	Design	Interim ROD	Amended ROD	ROD	ROD Action	LTM Start	LTM Stop
1	21													9/94	NFA		
	24													9/94	LTM	07/95	10/97
	78			•										9/94 <sup>(1)</sup>	GT/LTM	07/95	★
2	6			•										9/93	GT/LTM	07/96	★
	9	X												9/93	NFA		
	82			•										9/93	GT/LTM	07/96	★
3	48	X												9/93	NFA		
4	41													12/95	LTM	01/97	★
	74													12/95	NFA	01/97	7/98
5	2													9/94	LTM	07/95	★
6	36													•	MNA	10/98	★
	43													•	NFA		
	44													•	NFA		
	54			•										•	MNA	07/98	★
7	1													5/96	LTM	01/96	★
	28													5/96	LTM	01/96	★
	30	X												5/96	NFA		
8	16	X												9/96	NFA		
9	65								\$					•	NFA		
	73			★				\$	\$		\$			\$	GT/LTM	07/00	★
10	35				X			\$	\$		X	X		\$ <sup>(2)</sup>	GT/LTM	10/98	★
11	7	X												8/97	NFA		
	80	X												8/97	NFA		
12	3			X							X		X	4/97 <sup>(3)</sup>	MNA	01/97	★
13	63													4/97 <sup>(4)</sup>	NFA		
14	69											X		6/00	MNA	10/98	★
15	88				X			\$	\$	\$				\$		01/99	★
16	89			•				\$	\$	\$	•	•		\$		04/99	★
	93							\$	\$					\$		04/99	★

TABLE 1-2 (Continued)

INSTALLATION RESTORATION PROGRAM ACTIVITIES  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO 0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

OU No.	Site No.	NFA	NFRAP	RA	TS	SI	RI	FS	PRA P	EE/CA	Design	Interim ROD	Amended ROD	ROD	ROD Action	LTM Start	LTM Stop
17	90								\$					\$	LTM	07/00	★
	91								\$					\$	LTM	07/00	★
	92								\$					\$	LTM	07/00	★
18	94																
19	84						\$	\$	\$	★	●						
20	86						\$	●	●					●			
Pre-RI Sites	10		\$				\$										
	12	X				X											
	68		X			X											
	75	X				X											
	76	X				X											
	85		X	X		X				X	X						
	87	X				X											

Notes:

EE/CA = Engineering Evaluation/Cost Analysis  
 FS = Feasibility Study  
 GT = Groundwater Treatment  
 LTM = Long-Term Monitoring  
 MNA = Monitored Natural Attenuation  
 NFA = No Further Action  
 NFRAP = No Further Remedial Action Plan  
 PRAP = Proposed Remedial Action Plan  
 RA = Remedial Action

RI = Remedial Investigation  
 ROD = Record of Decision  
 SI = Site Inspection  
 TS = Treatability Study  
 X = No Additional Funding Required  
 ● = Currently Funded  
 ★ = Fiscal Year 01 Funded List  
 ▲ = Fiscal Year 01 Spending Plan Swing List  
 \$ = Additional Funding May be Required

(1) = IROD for shallow aquifer signed on September 23, 1992  
 (2) = IRODs for soil and groundwater signed on September 15, 1994, and September 22, 1995, respectively.  
 (3) = Ammended ROD signed on June 20, 2000  
 (4) = IROD signed on June 29, 2000

TABLE 2-1

**OPERABLE UNIT DESCRIPTIONS  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Operable Unit No.	Site No(s).	Site Name(s)	Primary Reasons for OU Selection
1	21 24 78	Transformer Storage Lot 140 Industrial Area Fly Ash Dump Hadnot Point Industrial Area	Geographic location of sites.
2	6 9 82	Storage Lots 201 and 203 Firefighting Training Pit at Piney Green Road Piney Green Road VOC Area	Geographic location of sites.
3	48	MCAS New River Mercury Dump Site	Unique characteristic of suspected waste (mercury).
4	41 74	Camp Geiger Dump Near Former Trailer Park Mess Hall Grease Disposal Area.	Unique characteristic of suspected waste (chemical agents).
5	2	Former Nursery/Day Care Center	Unique characteristic of material handled at site (pesticides).
6	36 43 44 54	Camp Geiger Area Dump near Sewage Treatment Plant Agan Street Dump Jones Street Dump Crash Crew Fire Training Burn Pit	Similar characteristics of material disposed (POL, waste oils, solvents) and contaminants detected (metals, VOCs, O&G). Geographic location of sites.
7	1 28 30	French Creek Liquids Disposal Area Hadnot Point Burn Dump Sneads Ferry Road Fuel Tank Sludge Area	Geographic location of sites. Unique characteristic of suspected waste (O&G, POL, and metals).
8	16	Montford Point Burn Dump	Geographic location of site.
9	65 73	Engineer Area Dump Courthouse Bay Liquids Disposal Area	Geographic location of sites. Unique characteristic of suspected waste (O&G, VOCs, POL, and metals).
10	35	Camp Geiger Area Fuel Farm	Accelerated cleanup necessary to abate impacts to Brinson Creek.
11	7 80	Tarawa Terrace Dump Paradise Point (Golf Course Maintenance Area)	Geographic location of sites.
12	3	Old Creosote Plant	Isolated site with unique waste source.

TABLE 2-1  
(Continued)

OPERABLE UNIT DESCRIPTIONS  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit No.	Site No(s).	Site Name(s)	Primary Reasons for OU Selection
13	63	Verona Loop Dump	Isolated site with unique waste source.
14	69	Rifle Range Chemical Dump	Isolated site with unique waste source.
15	88	Building 25, Base Dry Cleaners	Unique characteristic of suspected waste (dry cleaning solvent).
16	89 93	STC - 868 TC-942	Geographic location of sites and adjacent surface water body. Unique characteristic of suspected waste (solvents).
17	90 91 92	Building BB-9 Building BB-51 Building BB-46	Former UST sites with similar contamination detected groundwater.
18	94	Building 1613	Geographic location of site, within Site 78, and similar contaminants adjacent shallow groundwater plume. Former UST site.
19	84	Building 45 Area	Isolated site with unique waste (PCBs).
20	86	Tank Area AS419-AS421 at MCAS	New Operable Unit created for Site 86 due to increasing levels of VOCs. Site 86 was originally included under OU 6.
Pre-RI Sites	10 12 68 75 76 85 87	Original Base Dump Explosive Ordnance Disposal (formerly EOD-I, G-4A) Rifle Range Dump MCAS Basketball Court Site MCAS Curtis Road Site Camp Johnson Battery Dump MCAS Officer's Housing Area (formerly Site A)	Supplemental investigations required to confirm presence of suspected contamination.

TABLE 2-2

SUMMARY OF OPERABLE UNIT IRP ACTIVITIES  
FOR FISCAL YEAR 2001  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Site No.	Activity	Scheduled Start Up	Actual Start Up	Scheduled Completion	Actual Completion	Final Submittal Date	ROD Signature Date
1	78	Interim Remedial Action RI Interim Remedial Action FS Interim Remedial Action PRAP Interim Remedial Action ROD Interim Remedial Action Design	FY 91 FY 91 FY 91 FY 91 FY 92	FY 91 FY 91 FY 91 FY 91 FY 92	FY 92 FY 92 FY 92 FY 92 FY 94	FY 92 FY 92 FY 92 FY 92 FY 93	April 16, 1992 April 16, 1992 May 8, 1992 September 23, 1992 June 18, 1993	September 15, 1994
1	21, 24, and 78	Project Plans RI FS PRAP ROD LUCIP	FY 92 FY 93 FY 94 FY 94 FY 94 FY 99	FY 92 FY 93 FY 94 FY 94 FY 94 FY 99	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	March 11, 1993 June 23, 1994 July 22, 1994 July 22, 1994 September 8, 1994 March 2000	September 15, 1994
2	6, 9, and 82	Project Plans RI FS PRAP ROD Remedial Design LUCIP	FY 91 FY 92 FY 92 FY 92 FY 92 FY 94 FY 99	FY 91 FY 92 FY 92 FY 92 FY 92 FY 94 FY 99	FY 92 FY 94 FY 94 FY 94 FY 94 FY 95 FY 00	FY 92 FY 93 FY 93 FY 93 FY 93 FY 94 FY 00	May 18, 1992 August 20, 1993 August 20, 1993 August 20, 1993 September 24, 1993 May 10, 1994 March 3, 2000	September 24, 1993
3	48	Project Plans RI PRAP ROD	FY 91 FY 92 FY 92 FY 92	FY 91 FY 92 FY 92 FY 92	FY 92 FY 94 FY 94 FY 94	FY 92 FY 93 FY 93 FY 93	May 18, 1992 June 21, 1993 June 21, 1993 July 26, 1993	September 10, 1993
4	41 and 74	Project Plans RI FS PRAP ROD LUCIP	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	FY 94 FY 95 FY 95 FY 95 FY 95 FY 00	FY 94 FY 95 FY 95 FY 95 FY 95 FY 00	December 2, 1993 May 8, 1995 May 8, 1995 May 8, 1995 October 17, 1995 May 8, 2000	December 5, 1995
5	2	Project Plans RI FS PRAP ROD LUCIP	FY 92 FY 93 FY 93 FY 93 FY 93 FY 99	FY 92 FY 93 FY 93 FY 93 FY 93 FY 99	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	FY 93 FY 94 FY 94 FY 94 FY 94 FY 00	March 11, 1993 June 14, 1994 June 23, 1994 June 23, 1994 September 8, 1994 March 3, 2000	September 15, 1994
6	36, 43, 44, and 54	Project Plans RI FS PRAP Pre-Final ROD ROD	FY 94 FY 95 FY 95 FY 95 -- FY 95	FY 94 FY 95 FY 95 FY 95 -- FY 95	FY 95 FY 97 FY 97 FY 97 -- FY 97	FY 95 FY 96 FY 98 FY 98 FY 99 FY 00	December 2, 1994 August 22, 1996 June 24, 1998 June 18, 1998 July 20, 1999 pending	pending

TABLE 2-2 (Continued)

SUMMARY OF OPERABLE UNIT IRP ACTIVITIES  
FISCAL YEAR 2001  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Site No.	Activity	Scheduled Start Up	Actual Start Up	Scheduled Completion	Actual Completion	Final Submittal Date	ROD Signature Date
7	1, 28, and 30	Project Plans RI FS PRAP ROD LUCIP	FY 93 FY 94 FY 94 FY 94 FY 94 FY 99	FY 93 FY 94 FY 94 FY 94 FY 94 FY 99	FY 94 FY 95 FY 95 FY 95 FY 95 FY 00	FY 94 FY 96 FY 96 FY 96 FY 96 FY 00	December 15, 1993 June 29, 1995 July 13, 1995 July 13, 1995 December 13, 1995 March 3, 2000	May 16, 1996
8	16	Project Plans RI PRAP ROD LUCIP	FY 94 FY 94 FY 94 FY 94 FY 99	FY 94 FY 94 FY 94 FY 94 FY 99	FY 94 FY 96 FY 96 FY 96 FY 99	FY 94 FY 96 FY 96 FY 96 FY 99	October 2, 1994 January 31, 1996 February 15, 1996 April 12, 1996 July 1999	September 30, 1996
9	65 and 73	Project Plans RI FS PRAP ROD Remedial Design	FY 94 FY 95 FY 95 FY 95 FY 95 FY 97	FY 94 FY 95 FY 95 FY 95 FY 95 --	FY 95 FY 98 FY 98 FY 98 FY 98 FY 98	FY 95 FY 98 FY 98 -- -- --	March 7, 1995 November 7, 1997 July 31, 1998 -- -- --	
10	35	Project Plans Interim Remedial Action FS (Soil) Interim Remedial Action PRAP (Soil) Interim Remedial Action ROD (Soil) Interim Remedial Action FS (Groundwater) Interim Remedial Action PRAP (Groundwater) Interim Remedial Action ROD (Groundwater) RI Treatability Study Interim Action Remedial Design FS NAE Work Plans NAE Report Focused NAE Work Plans Focused NAE Report PRAP ROD	FY 93 FY 93 FY 93 FY 93 FY 95 FY 95 FY 95 FY 94 FY 96 FY 97 FY 94 FY 99 FY 99 FY 99 FY 01 FY 01 FY 94 FY 94	FY 93 FY 93 FY 93 FY 93 FY 95 FY 95 FY 95 FY 94 FY 96 FY 97 FY 94 FY 99 FY 99 FY 99 -- -- FY 94 FY 94	FY 94 FY 94 FY 94 FY 94 FY 95 FY 95 FY 95 FY 95 FY 95 FY 96 FY 97 FY 97 FY 99 FY 01 FY 00 FY 01 FY 97 FY 97	FY 94 FY 94 FY 94 FY 94 FY 95 FY 95 FY 95 FY 95 FY 95 FY 96 FY 97 FY 99 -- -- FY 00 -- -- --	December 20, 1993 July 20, 1994 July 20, 1994 September 15, 1994 June 13, 1995 June 8, 1995 September 22, 1995 May 3, 1995 May 31, 1996 April 14, 1997 -- December 4, 1998 -- pending -- -- --	
11	7	Project Plans RI PRAP ROD	FY 94 FY 94 FY 94 FY 94	FY 94 FY 94 FY 94 FY 94	FY 94 FY 97 FY 97 FY 97	FY 95 FY 96 FY 96 FY 97	October 2, 1994 February 6, 1996 November 27, 1996 April 10, 1997	August 21, 1997
11	80	Project Plans RI PRAP ROD	FY 94 FY 94 FY 94 FY 94	FY 94 FY 94 FY 94 FY 94	FY 94 FY 97 FY 97 FY 97	FY 95 FY 96 FY 96 FY 97	October 2, 1994 April 5, 1996 November 27, 1996 April 10, 1997	August 21, 1997

TABLE 2-2 (Continued)

**SUMMARY OF OPERABLE UNIT IRP ACTIVITIES  
FISCAL YEAR 2001  
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Operable Unit	Site No.	Activity	Scheduled Start Up	Actual Start Up	Scheduled Completion	Actual Completion	Final Submittal Date	ROD Signature Date
12	3	Project Plans	FY 94	FY 94	FY 94	FY 95	October 2, 1994	April 3, 1997 June 20, 2000
		RI	FY 94	FY 94	FY 97	FY 96	June 12, 1996	
		FS	FY 94	FY 94	FY 97	FY 96	August 14, 1996	
		PRAP	FY 94	FY 94	FY 97	FY 97	October 23, 1996	
		ROD	FY 94	FY 94	FY 97	FY 97	January 6, 1997	
		Amended ROD	FY 99	FY 99	FY 00	FY 00	July 28, 1999	
13	63	Project Plans	FY 95	FY 95	FY 96	FY 95	September 1, 1995	April 3, 1997
		RI	FY 96	FY 96	FY 97	FY 97	October 18, 1996	
		PRAP	FY 96	FY 96	FY 97	FY 97	November 1, 1996	
		ROD	FY 96	FY 96	FY 97	FY 97	January 21, 1996	
		LUCIP	FY 00	FY 00	FY 00	FY 00	May 10, 2000	
14	69	Project Plans	FY 93	FY 93	FY 94	FY 94	December 2, 1993	
		RI	FY 94	FY 94	FY 97	FY 97	December 5, 1997	
		Final RI	FY 94	FY 94	FY 97	FY 99	October 4, 1999	
		PRAP	FY 94	FY 94	FY 97	--	--	
		Pre-Final Interim	FY 94	FY 94	FY 97	FY 99	October 4, 1999	
		Final Interim ROD	FY 99	FY 99	FY 00	FY 00	June 29, 2000	
		Draft Monitored NA Evaluation/CAP	FY 00	--	FY 01	--	--	
		Final Monitored NA Evaluation/CAP	FY 01	--	FY 01	--	--	
15	88	Project Plans	FY 96	FY 96	FY 97	FY 97	February 21, 1997	
		Focused RI	FY 97	FY 97	FY 98	FY 98	May 15, 1998	
		SEAR Investigation/Demonstration	FY 98	FY 98	FY 99	FY 99	January 25, 2000	
		FS	FY 01	--	FY 02	--	--	
		PRAP	FY 01	--	FY 02	--	--	
		ROD	FY 01	--	FY 02	--	--	
		Remedial Design	FY 02	--	FY 03	--	--	
16	89	Project Plans	FY 95	FY 95	FY 97	FY 97	February 20, 1997	
		RI	FY 95	FY 96	FY 98	FY 98	June 15, 1998	
		Action Memo (Southern DRMO)	FY 00	FY 00	FY 00	FY 00	June 9, 2000	
		Remedial Design (Southern DRMO)	FY 00	FY 00	FY 00	FY 00	June 16, 2000	
		EE/CA (residual contamination)	FY 01	FY 01	FY 01	--	pending	
		Action Memo (residual contamination)	FY 01	FY 01	FY 01	--	pending	
		Remedial Design (residual contamination)	FY 02	--	FY 02	--	--	
		RI (Northern DRMO)	FY 02	--	FY 02	--	--	
		FS	FY 02	--	FY 02	--	--	
		PRAP	FY 02	--	FY 02	--	--	
		ROD	FY 02	--	FY 02	--	--	
		--	--	--	--	--	--	
16	93	Project Plans	FY 95	FY 95	FY 97	FY 97	February 20, 1997	
		RI	FY 95	FY 96	FY 98	FY 98	June 15, 1998	
		FS	FY 01	--	FY 01	--	--	
		PRAP	FY 02	--	FY 02	--	--	
		ROD	FY 02	--	FY 02	--	--	
17	90, 91, and 92	Project Plans	FY 96	FY 96	FY 97	FY 96	June 31, 1996	pending
		Focused RI	FY 97	FY 97	FY 98	FY 00	pending	
		PRAP	FY 98	FY 98	FY 98	FY 00	pending	
		ROD	FY 98	FY 98	FY 98	FY 00	pending	

TABLE 2-2 (Continued)

SUMMARY OF OPERABLE UNIT IRP ACTIVITIES  
FISCAL YEAR 2001  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Site No.	Activity	Scheduled Start Up	Actual Start Up	Scheduled Completion	Actual Completion	Final Submittal Date	ROD Signature Date
18	94	Project Plans	FY 98	FY99	FY 98	--	--	
		RI	FY 99	--	FY 00	--	--	
		FS	FY 00	--	FY 00	--	--	
		PRAP	FY 00	--	FY 00	--	--	
		ROD	FY 00	--	FY 00	--	--	
19	84	Trip Report	FY 99	FY 99	FY 99	FY 99	September 17, 1999	
		Project Plans	FY 99	FY 00	FY 00	--	--	
		RI	FY 00	--	FY 00	--	--	
		FS	FY 00	--	FY 00	--	--	
		PRAP	FY 00	--	FY 00	--	--	
ROD	FY 00	--	FY 00	--	--			
20	86	Initial Project Plans	FY 94	FY 94	FY 95	FY 95	December 2, 1994	
		RI	FY 95	FY 95	FY 97	FY 96	August 22, 1996	
		FS	FY 95	FY 95	FY 97	FY 98	June 24, 1998	
		PRAP	FY 95	FY 95	FY 97	FY 98	June 18, 1998	
		Amended RI	FY 00	FY 00	FY 01	--	--	
		Amended FS	FY 01	FY 01	FY 01	--	--	
		Amended PRAP	FY 01	FY 01	FY 01	--	--	
ROD	FY01	FY 01	FY 01	--	--			
Pre-RI Sites	10	Project Plans	FY 96	FY 96	FY 97	FY 98	January 20, 1998	
		SI	FY 98	FY 98	FY 99	FY 01	--	
	12, 68, 75, 76, 85, 87	Project Plans	FY 95	FY 95	FY 95	FY 95	January 21, 1995	
		SI	FY 95	FY 95	FY 99	FY 99	November 24, 1998	
		EE/CA (Site 85)	FY 98	FY 98	FY 99	FY 99	September 10, 1999	
		Action Memorandum (Site 85)	FY 99	FY 99	FY 99	FY 99	September 17, 1999	
		NFRAP (Site 68)	FY 98	FY 98	FY 00	FY 00	pending	
NFA (Sites 12, 75, 76, 87)	FY 98	FY 98	FY 00	FY 00	pending			
--	RCRA/SWMU Investigation	Phase I Project Plans	FY 96	FY 96	FY 97	FY 97	August 25, 1997	
		Phase I Confirmatory Sampling	FY 97	FY 97	FY 97	FY 97	September 1997	
		Phase I Report	FY 98	FY 98	FY 98	FY 01	pending	
		Phase II Project Plans	FY 99	FY 99	FY 99	FY 01	--	
		Phase II Confirmatory Sampling	FY 99	FY 02	FY 99	--	--	
		Phase II Report	FY 01	--	FY 01	--	--	
		Background Study	FY 00	--	FY 01	--	--	
		Background Report	FY 01	--	FY 01	--	--	























































TABLE 3-18  
DOCUMENT SUBMITTALS BY OPERABLE UNIT  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
1	78	Remedial Action	Semi-Annual Monitoring Report	October 2, 2000
		Remedial Action	NFESC Draft Report	March 1, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2001
		Remedial Action	Annual Monitoring Report	May 28, 2001
		Remedial Action	NFESC Final Report	April 15, 2001
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2002
		Remedial Action	Annual Monitoring Report	May 27, 2002
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2002
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2003
2	6 and 82	Remedial Action	Annual Monitoring Report	May 26, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2000
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2001
		Remedial Action	Annual Monitoring Report	May 28, 2001
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2002
		Remedial Action	Annual Monitoring Report	May 27, 2002
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2002
4	41	Remedial Action	Semi-Annual Monitoring Report	April 3, 2003
		Remedial Action	Annual Monitoring Report	May 26, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2000
		Remedial Action	Annual Monitoring Report	March 31, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2001
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2001
		Remedial Action	Annual Monitoring Report	March 31, 2002
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2002
5	2	Remedial Action	Semi-Annual Monitoring Report	October 2, 2002
		Remedial Action	Annual Monitoring Report	March 31, 2003
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2003
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2001
		Remedial Action	Semi-Annual Monitoring Report	June 23, 2001
		Remedial Action	Annual Monitoring Report	June 29, 2001
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2002

TABLE 3-18 (Continued)  
 DOCUMENT SUBMITTALS BY OPERABLE UNIT  
 FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
 MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
		Remedial Action	Semi-Annual Monitoring Report	June 23, 2002
		Remedial Action	Annual Monitoring Report	June 28, 2002
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2003
		Remedial Action	Semi-Annual Monitoring Report	June 23, 2003
		Remedial Action	Annual Monitoring Report	June 30, 2003
6	36 and 54	Remedial Investigation/Feasibility Study	Pre-Final ROD	August 23, 2000
		Remedial Investigation/Feasibility Study	Final ROD	October 18, 2000
		Remedial Action	Quarterly Monitoring Report	October 30, 2000
		Remedial Action	Quarterly Monitoring Report	January 31, 2001
		Remedial Action	Annual Monitoring Report	July 20, 2001
		Remedial Action	Quarterly Monitoring Report	April 30, 2001
		Remedial Action	Quarterly Monitoring Report	July 31, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2001
		Remedial Action	Quarterly Monitoring Report	January 31, 2002
		Remedial Action	Annual Monitoring Report	July 19, 2002
		Remedial Action	Quarterly Monitoring Report	April 30, 2002
		Remedial Action	Quarterly Monitoring Report	July 31, 2002
		Remedial Action	Quarterly Monitoring Report	October 30, 2002
		Remedial Action	Quarterly Monitoring Report	January 31, 2003
		Remedial Action	Annual Monitoring Report	July 21, 2003
		Remedial Action	Quarterly Monitoring Report	April 30, 2003
		Remedial Action	Quarterly Monitoring Report	July 31, 2003
Remedial Action	Quarterly Monitoring Report	October 30, 2003		
7	1 and 28	Remedial Action	Quarterly Monitoring Report	October 30, 2000
		Remedial Action	Quarterly Monitoring Report	January 31, 2001
		Remedial Action	Annual Monitoring Report	June 29, 2001
		Remedial Action	Quarterly Monitoring Report	April 30, 2001
		Remedial Action	Quarterly Monitoring Report	July 31, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2001
		Remedial Action	Quarterly Monitoring Report	January 31, 2002
		Remedial Action	Annual Monitoring Report	June 30, 2002
		Remedial Action	Quarterly Monitoring Report	April 30, 2002
		Remedial Action	Quarterly Monitoring Report	July 31, 2002
		Remedial Action	Quarterly Monitoring Report	October 30, 2002
		Remedial Action	Quarterly Monitoring Report	January 31, 2003
		Remedial Action	Annual Monitoring Report	June 30, 2003
		Remedial Action	Quarterly Monitoring Report	April 30, 2003
Remedial Action	Quarterly Monitoring Report	July 31, 2003		
Remedial Action	Quarterly Monitoring Report	October 30, 2003		

TABLE 3-18 (Continued)  
DOCUMENT SUBMITTALS BY OPERABLE UNIT  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
9	65 and 73	Remedial Action	Quarterly Monitoring Report (Site 73)	October 30, 2000
		Remedial Investigation/Feasibility Study	Draft Final NAE Report	January 9, 2001
		Remedial Action	Quarterly Monitoring Report (Site 73)	January 31, 2001
		Remedial Investigation/Feasibility Study	Final NAE Report (Site 73)	April 14, 2001
		Remedial Investigation/Feasibility Study	Final PRAP/Draft ROD (Sites 65 and 73)	TBD FY01
		Remedial Action	Annual Monitoring Report (Site 73)	April 21, 2001
		Remedial Action	Quarterly Monitoring Report (Site 73)	April 30, 2001
		Remedial Investigation/Feasibility Study	Pre-Final ROD (Sites 65 and 73)	TBD FY01
		Remedial Action	Quarterly Monitoring Report (Site 73)	July 31, 2001
		Remedial Investigation/Feasibility Study	Final ROD (Sites 65 and 73)	August 1, 2001
		Remedial Action	Quarterly Monitoring Report (Site 73)	October 30, 2001
		Remedial Action	Quarterly Monitoring Report (Site 73)	January 31, 2002
		Remedial Action	Annual Monitoring Report (Site 73)	April 21, 2002
		Remedial Action	Quarterly Monitoring Report (Site 73)	April 30, 2002
		Remedial Action	Quarterly Monitoring Report (Site 73)	July 31, 2002
		Remedial Action	Quarterly Monitoring Report (Site 73)	October 30, 2002
		Remedial Action	Quarterly Monitoring Report (Site 73)	January 31, 2003
		Remedial Action	Annual Monitoring Report (Site 73)	April 21, 2003
Remedial Action	Quarterly Monitoring Report (Site 73)	April 30, 2003		
Remedial Action	Quarterly Monitoring Report (Site 73)	July 31, 2003		
Remedial Action	Quarterly Monitoring Report (Site 73)	October 30, 2003		
10	35	Remedial Investigation/Feasibility Study	Final NAE Report	June 13, 2002
		Remedial Investigation/Feasibility Study	Focused NAE Report	May 31, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2000
		Remedial Action	Quarterly Monitoring Report	January 31, 2001
		Remedial Action	Quarterly Monitoring Report	April 30, 2001
		Remedial Action	Quarterly Monitoring Report	July 31, 2001
		Remedial Action	Annual Monitoring Report	August 4, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2001
		Remedial Action	Quarterly Monitoring Report	January 31, 2002
		Remedial Action	Quarterly Monitoring Report	April 30, 2002
		Remedial Action	Quarterly Monitoring Report	July 31, 2002
		Remedial Action	Annual Monitoring Report	August 4, 2002
		Remedial Action	Quarterly Monitoring Report	October 30, 2002
		Remedial Action	Quarterly Monitoring Report	January 31, 2003
Remedial Action	Quarterly Monitoring Report	April 30, 2003		

TABLE 3-18 (Continued)  
DOCUMENT SUBMITTALS BY OPERABLE UNIT  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
		Remedial Action	Quarterly Monitoring Report	July 31, 2003
		Remedial Action	Annual Monitoring Report	August 4, 2003
		Remedial Action	Quarterly Monitoring Report	October 30, 2003
		Remedial Investigation/Feasibility Study	Free Product Investigation Work Plan	TBD FY02
		Remedial Investigation/Feasibility Study	Draft Free Product Report	TBD FY02
		Remedial Investigation/Feasibility Study	Final Free Product Report	TBD FY02
		Remedial Investigation/Feasibility Study	Draft PRAP	TBD FY02
		Remedial Investigation/Feasibility Study	Final FS	TBD FY02
		Remedial Investigation/Feasibility Study	Final PRAP/Draft ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Final ROD	TBD FY02
12	3	Remedial Action	Semi-Annual Monitoring Report	October 2, 2000
		Remedial Action	Annual Monitoring Report	April 2, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2001
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2001
		Remedial Action	Annual Monitoring Report	March 29, 2002
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2002
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2002
		Remedial Action	Annual Monitoring Report	March 31, 2003
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2003
14	69	Remedial Action	Semi-Annual Monitoring Report	January 21, 2001
		Remedial Action	Semi-Annual Monitoring Report	July 21, 2001
		Remedial Action	Semi-Annual Monitoring Report	January 21, 2002
		Remedial Action	Semi-Annual Monitoring Report	July 21, 2002
		Remedial Action	Semi-Annual Monitoring Report	January 21, 2003
		Remedial Action	Semi-Annual Monitoring Report	July 21, 2003
15	88	Remedial Action	Semi-Annual Monitoring Report	October 2, 2000
		Remedial Investigation/Feasibility Study	Draft FS/PRAP	TBD FY02
		Remedial Investigation/Feasibility Study	Final FS/PRAP	TBD FY02
		Remedial Investigation/Feasibility Study	Draft ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Pre-Final ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Final ROD	TBD FY02
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2001
		Remedial Action	Annual Monitoring Report	April 20, 2001

TABLE 3-18 (Continued)  
DOCUMENT SUBMITTALS BY OPERABLE UNIT  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
		Remedial Action	Semi-Annual Monitoring Report	October 3, 2001
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2002
		Remedial Action	Annual Monitoring Report	April 19, 2002
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2002
		Remedial Action	Semi-Annual Monitoring Report	April 3, 2003
		Remedial Action	Annual Monitoring Report	April 21, 2003
		Remedial Action	Semi-Annual Monitoring Report	October 2, 2003
16	89 and 93	Remedial Action	Final EE/CA Project Plans	October 30, 2000
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2001
		Remedial Action	Draft EE/CA	March 28, 2001
		Remedial Action	Final EE/CA	May 23, 2001
		Remedial Action	Draft Design	July 12, 2001
		Remedial Action	Final Design	September 6, 2001
		Remedial Investigation/Feasibility Study	RI (Northern Area-Site 89)	TBD FY02
		Remedial Investigation/Feasibility Study	FS (Site 89)	TBD FY02
		Remedial Investigation/Feasibility Study	PRAP (Site 89)	TBD FY02
		Remedial Investigation/Feasibility Study	ROD (Site 89)	TBD FY02
		Remedial Investigation/Feasibility Study	FS (Site 93)	TBD FY02
		Remedial Investigation/Feasibility Study	PRAP (Site 93)	TBD FY02
		Remedial Investigation/Feasibility Study	ROD (Site 93)	TBD FY02
		Remedial Action	Semi-Annual Monitoring Report	July 23, 2001
		Remedial Action	Annual Monitoring Report	August 18, 2001
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2002
		Remedial Action	Semi-Annual Monitoring Report	July 23, 2002
		Remedial Action	Annual Monitoring Report	August 18, 2002
		Remedial Action	Semi-Annual Monitoring Report	January 22, 2003
		Remedial Action	Semi-Annual Monitoring Report	July 23, 2003
		Remedial Action	Annual Monitoring Report	August 18, 2003
17	90, 91, 92	Remedial Investigation/Feasibility Study	Final Focused RI	September 5, 2000
		Remedial Investigation/Feasibility Study	Final PRAP	September 20, 2000
		Remedial Investigation/Feasibility Study	Pre-Final ROD	November 16, 2000
		Remedial Action	Quarterly Monitoring Report	October 27, 2000
		Remedial Investigation/Feasibility Study	Final ROD	December 19, 2000
		Remedial Action	Quarterly Monitoring Report	January 31, 2001
		Remedial Action	Quarterly Monitoring Report	April 30, 2001
		Remedial Action	Quarterly Monitoring Report	July 31, 2001
		Remedial Action	Annual Monitoring Report	August 18, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2001
		Remedial Action	Quarterly Monitoring Report	January 31, 2002
		Remedial Action	Quarterly Monitoring Report	April 30, 2002
		Remedial Action	Quarterly Monitoring Report	July 31, 2002
		Remedial Action	Annual Monitoring Report	August 18, 2002

TABLE 3-18 (Continued)  
DOCUMENT SUBMITTALS BY OPERABLE UNIT  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Operable Unit	Sites	Activity	Primary Document Submittal	Anticipated Submittal Date
		Remedial Action	Quarterly Monitoring Report	October 30, 2002
		Remedial Action	Quarterly Monitoring Report	January 31, 2003
		Remedial Action	Quarterly Monitoring Report	April 30, 2003
		Remedial Action	Quarterly Monitoring Report	July 31, 2003
		Remedial Action	Annual Monitoring Report	August 18, 2003
		Remedial Action	Quarterly Monitoring Report	October 30, 2003
18	94	Remedial Investigation/Feasibility Study	Final Project Plans	TBD FY02
		Remedial Investigation/Feasibility Study	Final RI Report	TBD FY02
		Remedial Investigation/Feasibility Study	Pre-Final ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Final ROD	TBD FY02
19	84	Remedial Investigation/Feasibility Study	Final RI Work Plans	December 15, 2000
		Remedial Investigation/Feasibility Study	Final RI Report	TBD FY01
		Remedial Investigation/Feasibility Study	Pre-Final ROD	TBD FY01
		Remedial Investigation/Feasibility Study	Final ROD	TBD FY01
20	86	Remedial Action	Quarterly Monitoring Report	October 30, 2000
		Remedial Action	Quarterly Monitoring Report	January 31, 2001
		Remedial Investigation/Feasibility Study	Draft Amended RI	February 13, 2001
		Remedial Action	Quarterly Monitoring Report	April 30, 2001
		Remedial Investigation/Feasibility Study	Final Amended RI	May 31, 2001
		Remedial Investigation/Feasibility Study	Draft Amended FS	July 12, 2001
		Remedial Action	Annual Monitoring Report	July 20, 2001
		Remedial Action	Quarterly Monitoring Report	July 31, 2001
		Remedial Investigation/Feasibility Study	Final Amended FS	November 16, 2001
		Remedial Investigation/Feasibility Study	Draft Amended PRAP	July 20, 2001
		Remedial Action	Quarterly Monitoring Report	October 30, 2001
		Remedial Investigation/Feasibility Study	Draft Amended ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Final Amended PRAP	November 28, 2001
		Remedial Investigation/Feasibility Study	Pre-Final Amended ROD	TBD FY02
		Remedial Investigation/Feasibility Study	Final Amended ROD	TBD FY02
		Remedial Action	Quarterly Monitoring Report	January 31, 2002
		Remedial Action	Quarterly Monitoring Report	April 30, 2002
		Remedial Action	Annual Monitoring Report	July 19, 2002
		Remedial Action	Quarterly Monitoring Report	July 31, 2002
		Remedial Action	Quarterly Monitoring Report	October 30, 2002
		Remedial Action	Quarterly Monitoring Report	January 31, 2003
		Remedial Action	Quarterly Monitoring Report	April 30, 2003
		Remedial Action	Annual Monitoring Report	July 21, 2003
		Remedial Action	Quarterly Monitoring Report	July 31, 2003
		Remedial Action	Quarterly Monitoring Report	October 30, 2003
Pre-RI Sites	10	Remedial Action	Final SI Report	TBD FY02

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
August 23, 2000	6	36 and 54	Pre-Final ROD
September 5, 2000	17	90, 91, 92	Final Focused RI
September 20, 2000	17	90, 91, 92	Final PRAP
October 2, 2000	1	78	Semi-Annual Monitoring Report
October 2, 2000	2	6 and 82	Semi-Annual Monitoring Report
October 2, 2000	4	41	Semi-Annual Monitoring Report
October 2, 2000	12	3	Semi-Annual Monitoring Report
October 2, 2000	15	88	Semi-Annual Monitoring Report
October 18, 2000	6	36 and 54	Final ROD
October 27, 2000	17	90, 91, 92	Quarterly Monitoring Report
October 30, 2000	6	36 and 54	Quarterly Monitoring Report
October 30, 2000	7	1 and 28	Quarterly Monitoring Report
October 30, 2000	9	65 and 73	Quarterly Monitoring Report (Site 73)
October 30, 2000	10	35	Quarterly Monitoring Report
October 30, 2000	16	89 and 93	Final EE/CA Project Plans
October 30, 2000	20	86	Quarterly Monitoring Report
November 16, 2000	17	90, 91, 92	Pre-Final ROD
December 15, 2000	19	84	Final RI Work Plans
December 19, 2000	17	90, 91, 92	Final ROD
January 9, 2001	9	65 and 73	Draft Final NAE Report
January 21, 2001	14	69	Semi-Annual Monitoring Report
January 22, 2001	5	2	Semi-Annual Monitoring Report
January 22, 2001	16	89 and 93	Semi-Annual Monitoring Report
January 31, 2001	6	36 and 54	Quarterly Monitoring Report
January 31, 2001	7	1 and 28	Quarterly Monitoring Report
January 31, 2001	9	65 and 73	Quarterly Monitoring Report (Site 73)
January 31, 2001	10	35	Quarterly Monitoring Report
January 31, 2001	17	90, 91, 92	Quarterly Monitoring Report
January 31, 2001	20	86	Quarterly Monitoring Report
February 13, 2001	20	86	Draft Amended RI
March 1, 2001	1	78	NFESC Draft Report

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
March 28, 2001	16	89 and 93	Draft EE/CA
March 31, 2001	4	41	Annual Monitoring Report
April 2, 2001	12	3	Annual Monitoring Report
April 3, 2001	1	78	Semi-Annual Monitoring Report
April 3, 2001	2	6 and 82	Semi-Annual Monitoring Report
April 3, 2001	4	41	Semi-Annual Monitoring Report
April 3, 2001	12	3	Semi-Annual Monitoring Report
April 3, 2001	15	88	Semi-Annual Monitoring Report
April 14, 2001	9	65 and 73	Final NAE Report (Site 73)
April 15, 2001	1	78	NFESC Final Report
April 20, 2001	15	88	Annual Monitoring Report
April 21, 2001	9	65 and 73	Annual Monitoring Report (Site 73)
April 30, 2001	6	36 and 54	Quarterly Monitoring Report
April 30, 2001	7	1 and 28	Quarterly Monitoring Report
April 30, 2001	9	65 and 73	Quarterly Monitoring Report (Site 73)
April 30, 2001	10	35	Quarterly Monitoring Report
April 30, 2001	17	90, 91, 92	Quarterly Monitoring Report
April 30, 2001	20	86	Quarterly Monitoring Report
May 23, 2001	16	89 and 93	Final EE/CA
May 28, 2001	1	78	Annual Monitoring Report
May 28, 2001	2	6 and 82	Annual Monitoring Report
May 31, 2001	10	35	Focused NAE Report
May 31, 2001	20	86	Final Amended RI
June 23, 2001	5	2	Semi-Annual Monitoring Report
June 29, 2001	5	2	Annual Monitoring Report
June 29, 2001	7	1 and 28	Annual Monitoring Report
July 12, 2001	16	89 and 93	Draft Design
July 12, 2001	20	86	Draft Amended FS
July 20, 2001	6	36 and 54	Annual Monitoring Report
July 20, 2001	20	86	Draft Amended PRAP
July 20, 2001	20	86	Annual Monitoring Report
July 21, 2001	14	69	Semi-Annual Monitoring Report

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
July 23, 2001	16	89 and 93	Semi-Annual Monitoring Report
July 31, 2001	6	36 and 54	Quarterly Monitoring Report
July 31, 2001	7	1 and 28	Quarterly Monitoring Report
July 31, 2001	9	65 and 73	Quarterly Monitoring Report (Site 73)
July 31, 2001	10	35	Quarterly Monitoring Report
July 31, 2001	17	90, 91, 92	Quarterly Monitoring Report
July 31, 2001	20	86	Quarterly Monitoring Report
August 1, 2001	9	65 and 73	Final ROD (Sites 65 and 73)
August 4, 2001	10	35	Annual Monitoring Report
August 18, 2001	16	89 and 93	Annual Monitoring Report
August 18, 2001	17	90, 91, 92	Annual Monitoring Report
September 6, 2001	16	89 and 93	Final Design
October 2, 2001	4	41	Semi-Annual Monitoring Report
October 2, 2001	12	3	Semi-Annual Monitoring Report
October 3, 2001	1	78	Semi-Annual Monitoring Report
October 3, 2001	2	6 and 82	Semi-Annual Monitoring Report
October 3, 2001	15	88	Semi-Annual Monitoring Report
October 30, 2001	6	36 and 54	Quarterly Monitoring Report
October 30, 2001	7	1 and 28	Quarterly Monitoring Report
October 30, 2001	9	65 and 73	Quarterly Monitoring Report (Site 73)
October 30, 2001	10	35	Quarterly Monitoring Report
October 30, 2001	17	90, 91, 92	Quarterly Monitoring Report
October 30, 2001	20	86	Quarterly Monitoring Report
November 16, 2001	20	86	Final Amended FS
November 28, 2001	20	86	Final Amended PRAP
January 21, 2002	14	69	Semi-Annual Monitoring Report
January 22, 2002	5	2	Semi-Annual Monitoring Report
January 22, 2002	16	89 and 93	Semi-Annual Monitoring Report
January 31, 2002	6	36 and 54	Quarterly Monitoring Report
January 31, 2002	7	1 and 28	Quarterly Monitoring Report
January 31, 2002	9	65 and 73	Quarterly Monitoring Report (Site 73)
January 31, 2002	10	35	Quarterly Monitoring Report

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
January 31, 2002	17	90, 91, 92	Quarterly Monitoring Report
January 31, 2002	20	86	Quarterly Monitoring Report
March 29, 2002	12	3	Annual Monitoring Report
March 31, 2002	4	41	Annual Monitoring Report
April 3, 2002	1	78	Semi-Annual Monitoring Report
April 3, 2002	2	6 and 82	Semi-Annual Monitoring Report
April 3, 2002	4	41	Semi-Annual Monitoring Report
April 3, 2002	12	3	Semi-Annual Monitoring Report
April 3, 2002	15	88	Semi-Annual Monitoring Report
April 19, 2002	15	88	Annual Monitoring Report
April 21, 2002	9	65 and 73	Annual Monitoring Report (Site 73)
April 30, 2002	6	36 and 54	Quarterly Monitoring Report
April 30, 2002	7	1 and 28	Quarterly Monitoring Report
April 30, 2002	9	65 and 73	Quarterly Monitoring Report (Site 73)
April 30, 2002	10	35	Quarterly Monitoring Report
April 30, 2002	17	90, 91, 92	Quarterly Monitoring Report
April 30, 2002	20	86	Quarterly Monitoring Report
May 27, 2002	1	78	Annual Monitoring Report
May 27, 2002	2	6 and 82	Annual Monitoring Report
June 13, 2002	10	35	Final NAE Report
June 23, 2002	5	2	Semi-Annual Monitoring Report
June 28, 2002	5	2	Annual Monitoring Report
June 30, 2002	7	1 and 28	Annual Monitoring Report
July 19, 2002	6	36 and 54	Annual Monitoring Report
July 19, 2002	20	86	Annual Monitoring Report
July 21, 2002	14	69	Semi-Annual Monitoring Report
July 23, 2002	16	89 and 93	Semi-Annual Monitoring Report
July 31, 2002	6	36 and 54	Quarterly Monitoring Report
July 31, 2002	7	1 and 28	Quarterly Monitoring Report
July 31, 2002	9	65 and 73	Quarterly Monitoring Report (Site 73)
July 31, 2002	10	35	Quarterly Monitoring Report
July 31, 2002	17	90, 91, 92	Quarterly Monitoring Report

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DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
July 31, 2002	20	86	Quarterly Monitoring Report
August 4, 2002	10	35	Annual Monitoring Report
August 18, 2002	16	89 and 93	Annual Monitoring Report
August 18, 2002	17	90, 91, 92	Annual Monitoring Report
October 2, 2002	4	41	Semi-Annual Monitoring Report
October 2, 2002	12	3	Semi-Annual Monitoring Report
October 2, 2002	15	88	Semi-Annual Monitoring Report
October 3, 2002	1	78	Semi-Annual Monitoring Report
October 3, 2002	2	6 and 82	Semi-Annual Monitoring Report
October 30, 2002	6	36 and 54	Quarterly Monitoring Report
October 30, 2002	7	1 and 28	Quarterly Monitoring Report
October 30, 2002	9	65 and 73	Quarterly Monitoring Report (Site 73)
October 30, 2002	10	35	Quarterly Monitoring Report
October 30, 2002	17	90, 91, 92	Quarterly Monitoring Report
October 30, 2002	20	86	Quarterly Monitoring Report
January 21, 2003	14	69	Semi-Annual Monitoring Report
January 22, 2003	5	2	Semi-Annual Monitoring Report
January 22, 2003	16	89 and 93	Semi-Annual Monitoring Report
January 31, 2003	6	36 and 54	Quarterly Monitoring Report
January 31, 2003	7	1 and 28	Quarterly Monitoring Report
January 31, 2003	9	65 and 73	Quarterly Monitoring Report (Site 73)
January 31, 2003	10	35	Quarterly Monitoring Report
January 31, 2003	17	90, 91, 92	Quarterly Monitoring Report
January 31, 2003	20	86	Quarterly Monitoring Report
March 31, 2003	4	41	Annual Monitoring Report
March 31, 2003	12	3	Annual Monitoring Report
April 3, 2003	1	78	Semi-Annual Monitoring Report
April 3, 2003	2	6 and 82	Semi-Annual Monitoring Report
April 3, 2003	4	41	Semi-Annual Monitoring Report
April 3, 2003	12	3	Semi-Annual Monitoring Report
April 3, 2003	15	88	Semi-Annual Monitoring Report
April 21, 2003	9	65 and 73	Annual Monitoring Report (Site 73)

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
April 21, 2003	15	88	Annual Monitoring Report
April 30, 2003	6	36 and 54	Quarterly Monitoring Report
April 30, 2003	7	1 and 28	Quarterly Monitoring Report
April 30, 2003	9	65 and 73	Quarterly Monitoring Report (Site 73)
April 30, 2003	10	35	Quarterly Monitoring Report
April 30, 2003	17	90, 91, 92	Quarterly Monitoring Report
April 30, 2003	20	86	Quarterly Monitoring Report
May 26, 2003	1	78	Annual Monitoring Report
May 26, 2003	2	6 and 82	Annual Monitoring Report
June 23, 2003	5	2	Semi-Annual Monitoring Report
June 30, 2003	5	2	Annual Monitoring Report
June 30, 2003	7	1 and 28	Annual Monitoring Report
July 21, 2003	6	36 and 54	Annual Monitoring Report
July 21, 2003	14	69	Semi-Annual Monitoring Report
July 21, 2003	20	86	Annual Monitoring Report
July 23, 2003	16	89 and 93	Semi-Annual Monitoring Report
July 31, 2003	6	36 and 54	Quarterly Monitoring Report
July 31, 2003	7	1 and 28	Quarterly Monitoring Report
July 31, 2003	9	65 and 73	Quarterly Monitoring Report (Site 73)
July 31, 2003	10	35	Quarterly Monitoring Report
July 31, 2003	17	90, 91, 92	Quarterly Monitoring Report
July 31, 2003	20	86	Quarterly Monitoring Report
August 4, 2003	10	35	Annual Monitoring Report
August 18, 2003	16	89 and 93	Annual Monitoring Report
August 18, 2003	17	90, 91, 92	Annual Monitoring Report
October 2, 2003	4	41	Semi-Annual Monitoring Report
October 2, 2003	12	3	Semi-Annual Monitoring Report
October 2, 2003	15	88	Semi-Annual Monitoring Report
October 3, 2003	1	78	Semi-Annual Monitoring Report
October 3, 2003	2	6 and 82	Semi-Annual Monitoring Report
October 30, 2003	6	36 and 54	Quarterly Monitoring Report
October 30, 2003	7	1 and 28	Quarterly Monitoring Report

TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
October 30, 2003	9	65 and 73	Quarterly Monitoring Report (Site 73)
October 30, 2003	10	35	Quarterly Monitoring Report
October 30, 2003	17	90, 91, 92	Quarterly Monitoring Report
October 30, 2003	20	86	Quarterly Monitoring Report
TBD FY01	9	65 and 73	Final PRAP/Draft ROD (Sites 65 and 73)
TBD FY01	9	65 and 73	Pre-Final ROD (Sites 65 and 73)
TBD FY01	19	84	Final RI Report
TBD FY01	19	84	Pre-Final ROD
TBD FY01	19	84	Final ROD
TBD FY02	10	35	Free Product Investigation Work Plan
TBD FY02	10	35	Draft Free Product Report
TBD FY02	10	35	Final Free Product Report
TBD FY02	10	35	Draft PRAP
TBD FY02	10	35	Final FS
TBD FY02	10	35	Final PRAP/Draft ROD
TBD FY02	10	35	Final ROD
TBD FY02	15	88	Draft FS/PRAP
TBD FY02	15	88	Final FS/PRAP
TBD FY02	15	88	Draft ROD
TBD FY02	15	88	Pre-Final ROD
TBD FY02	15	88	Final ROD
TBD FY02	16	89 and 93	RI (Northern Area-Site 89)
TBD FY02	16	89 and 93	FS (Site 89)
TBD FY02	16	89 and 93	PRAP (Site 89)
TBD FY02	16	89 and 93	ROD (Site 89)
TBD FY02	16	89 and 93	FS (Site 93)
TBD FY02	16	89 and 93	PRAP (Site 93)
TBD FY02	16	89 and 93	ROD (Site 93)
TBD FY02	18	94	Final Project Plans
TBD FY02	18	94	Final RI Report
TBD FY02	18	94	Pre-Final ROD
TBD FY02	18	94	Final ROD

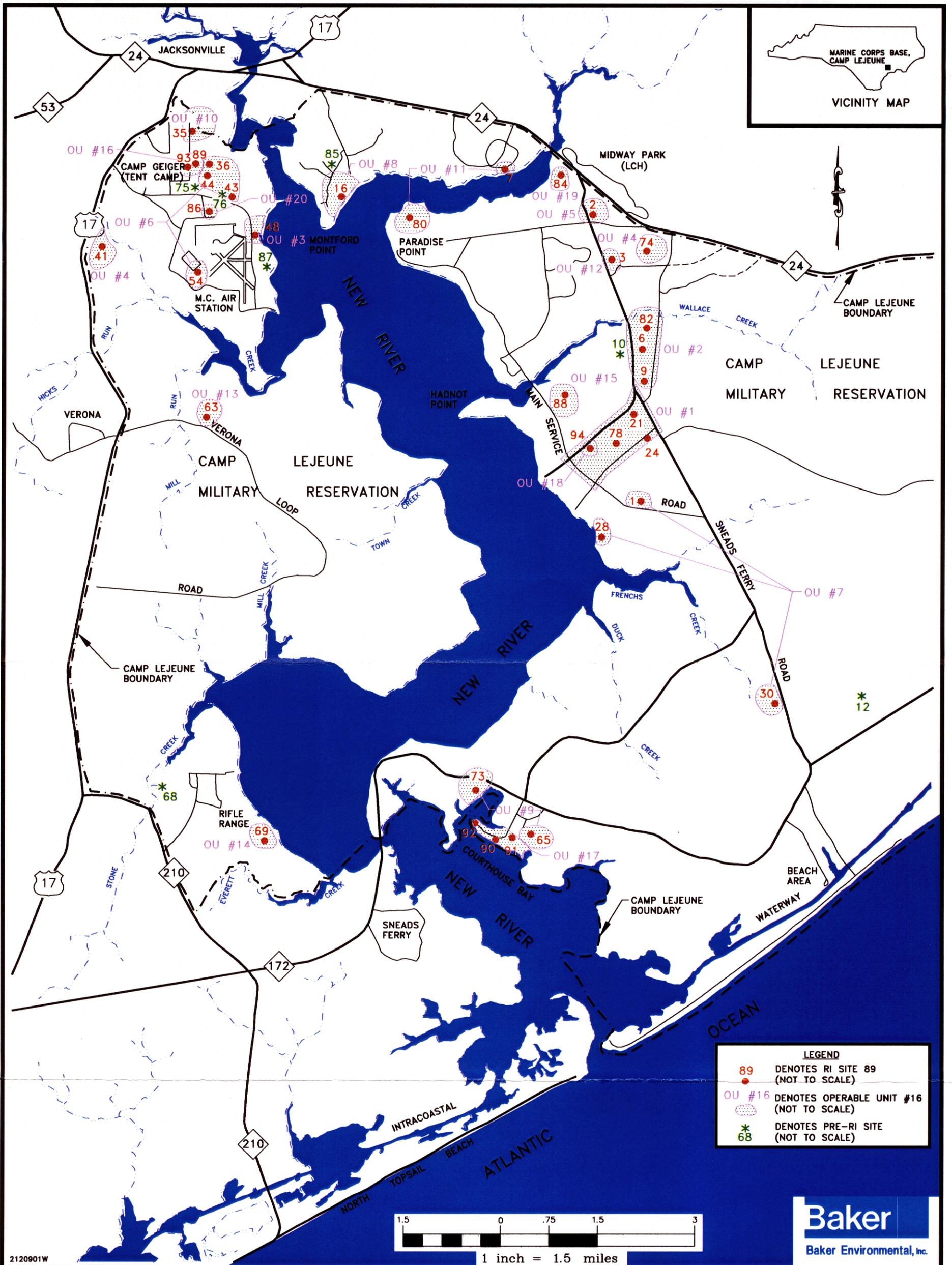
TABLE 3-19  
DOCUMENT SUBMITTALS BY MONTH  
FISCAL YEAR 2001 SITE MANAGEMENT PLAN, CTO-0120  
MCB, CAMP LEJEUNE, NORTH CAROLINA

Anticipated Submittal Date	Operable Unit	Sites	Primary Document Submittal
TBD FY02	20	86	Draft Amended ROD
TBD FY02	20	86	Pre-Final Amended ROD
TBD FY02	20	86	Final Amended ROD
TBD FY02	Pre-RI Sites	10	Final SI Report



**FIGURES**

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FIGURE 1-1  
 OPERABLE UNIT AND SITE LOCATION MAP  
 FISCAL YEAR 2001  
 SITE MANAGEMENT PLAN  
 CTO - 0120  
 MARINE CORPS BASE, CAMP LEJEUNE  
 NORTH CAROLINA

**Baker**  
 Baker Environmental, Inc.