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FACT SHEET FOR THE FIVE YEAR REVIEW AT MCB CAMP LEJEUNE NC (PUBLIC
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Environmental Cleanup at Marine Corps Base Camp Lejeune

Five-Year Review

July 2011



This fact sheet describes the Department of Defense's (DoD's) environmental cleanup program at Marine Corps Base Camp Lejeune.

Specifically, the DoD, working in partnership with the U.S. Environmental Protection Agency (USEPA) and the North Carolina Department of Environment and Natural Resources (NCDENR), has just completed a five-year review of ongoing environmental cleanup actions. The purpose of the five-year review is to ensure that current cleanup activities are effectively protecting human health and the environment.

This fact sheet provides an overview of the five-year review, the path forward for each Operable Unit, and information about how you can learn more about the environmental cleanup program.

Introduction

Marine Corps Base Camp Lejeune is a military installation in Jacksonville, North Carolina. The Base's mission is to maintain combat-ready units for expeditionary deployment.

In the more than 60 years of operation since the Base was commissioned in 1941, a variety of wastes have been generated. Past spills and formerly-acceptable use and disposal practices have resulted in soil and groundwater contamination at various "sites" on the installation.

The DoD is responsible for identifying, assessing, and cleaning up contamination resulting from past handling, storage, and disposal of these potentially hazardous wastes. This investigation and cleanup is being conducted under the Navy's Installation Restoration Program (IRP) and under provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as "Superfund."

Five-Year Review

The Navy, Marine Corps Base Camp Lejeune, USEPA, and NCDENR have completed a five-year review of ongoing environmental cleanup actions at Marine Corps Base Camp Lejeune. The purpose of the five-year review is to ensure that the cleanup actions are continuing to protect human health and the environment. Sixteen "operable units," covering 28 sites, were evaluated in this five-year review. The next five-year review for Marine Corps Base Camp Lejeune will be completed in 2015.

Operable Unit 1

Site Overview

Operable Unit 1 is located within the Hadnot Point Industrial Area (HPIA) on the Mainside of the Base. It consists of three sites (Sites 21, 24, and 78) that have been grouped together because of their proximity to one another. The primary chemicals of concern are pesticide-related compounds, metals, and volatile organic compounds (VOCs) that are from chlorinated solvents.

Cleanup Activities

Soil. An excavation to remove pesticides and polychlorinated biphenyls (PCBs) in soils at Sites 21 and 78 was completed in 1995. The soil was removed to levels that are safe for industrial use.

Sites in Operable Unit 1

Site 21 is the former Transformer Storage Lot 140 where waste oils and pesticides were disposed.

Site 24 is the former Industrial Area Fly Ash Dump used for disposal of fly ash, cinders, solvents, used paint stripping compounds, sewage sludge, and water treatment sludge.

Site 78 is the Hadnot Point Industrial Area consisting of maintenance shops, warehouses, painting shops, printing shops, and auto body shops. Due to the industrial nature of the site, many spills and leaks have occurred.

Groundwater. A pump-and-treat system began operation at Site 78 in 1995 and is ongoing to remove VOCs from groundwater. Annual groundwater monitoring for VOCs was initiated in 1995 to evaluate the effectiveness of the treatment system and monitor plume migration and is ongoing at Site 78. At Site 24, groundwater monitoring for pesticides and metals was conducted from 1996 through 2001 when cleanup levels were achieved.

Pump-and-treat, a common method for cleaning up groundwater, involves using pumps to bring contaminated groundwater to the surface where it can be treated, often using carbon filtration. Cleaned water is then released away from the contaminated area, either in surface ponds or below-ground.

Protection of Human Health and the Environment

Human health and the environment are protected by land use controls. These controls prevent any land use other than industrial and prevent exposure to contaminated groundwater.

Land use controls (LUCs) are property restrictions placed on contaminated sites for protection of human health and the environment. LUCs may also include institutional controls to prevent access, such as fences and signage.

Next Steps

Groundwater treatment and monitoring will continue until the groundwater is cleaned up. Because the cleanup levels for metals have changed since the remedy was implemented, metals concentrations in groundwater will be reevaluated. The monitoring program and the LUCs will also be expanded to ensure they reflect the current extent of groundwater contamination. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The treatment plants are currently being evaluated to increase the efficiency and removal of groundwater contamination. Alternative treatment technologies will also be evaluated.



Operable Unit 1 – Site 78 North Treatment Plant

Operable Unit 2

Site Overview

Operable Unit 2 is located along Piney Green Road on the Mainside of the Base and consists of three sites (Sites 6, 9, and 82) that have been grouped together because of their proximity to one another. The primary chemicals of concern are pesticide-related compounds, metals, and VOCs (chlorinated solvents).

Sites in Operable Unit 2

Site 6 is Lots 201 and 203 where wastes and supplies, including pesticides, transformers containing PCBs, solvents, electrolytes, and waste oils were stored or disposed of.

Site 9 is a former Fire Fighting Training Pit.

Site 82 is the Piney Green Road VOC Area that was used for storage, disposal, and handling of potentially hazardous waste.

Cleanup Activities

Soil. An excavation to remove pesticides and PCBs in soils was completed in 1995. The soil was removed to levels that are safe for industrial use. A soil vapor extraction system was used in 1996 to remove VOCs.

Soil vapor extraction (SVE) systems remove harmful chemicals, in the form of vapors, from the soil above the water table. Vapors are the gases that form when chemicals evaporate. The vapors are removed from the ground by applying a vacuum to pull them out.

Groundwater. A pump-and-treat system began operation in 1996 and is ongoing to remove VOCs from groundwater. Annual groundwater monitoring is conducted to evaluate the effectiveness of the treatment system and monitor plume migration. Semiannual surface water and sediment monitoring is also conducted to ensure treatment plant discharges are at acceptable limits.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent any land use other than industrial and prevent exposure to contaminated groundwater.

Next Steps

Groundwater treatment and monitoring will continue until the groundwater is cleaned up. Because the cleanup levels for metals have changed since the remedy was implemented, metals concentrations in groundwater will be reevaluated. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The treatment plants are currently being

evaluated to increase the efficiency and removal of groundwater contamination. Alternative treatment technologies will also be evaluated.



Operable Unit 2 – Site 82 Treatment Plant

Operable Unit 4

Site Overview

Operable Unit 4 consists of two sites (Sites 41 and 74) that have been grouped together based on the unique characteristic of suspected waste (chemical warfare materials). Site 41 is located at the Marine Corps Air Station (MCAS) New River and Site 74 is located on the Mainside of the Base. The primary concern at the sites is the waste remaining in place. VOCs and metals were identified as chemicals of concern in groundwater.

Sites in Operable Unit 4

Site 41 is the former Camp Geiger Dump for disposal of construction debris, petroleum-related compounds, solvents, batteries, ordnance, chemical warfare materials, and pesticides.

Site 74 is the former Mess Hall Grease Dump for disposal of drums containing PCBs and pesticide-soaked bags and potential chemical warfare materials in the form of test kits.

Cleanup Activities

Waste/Soil. LUCs are in place to eliminate exposure to the waste remaining in place. Perimeter fencing was also installed to restrict access to the waste areas.

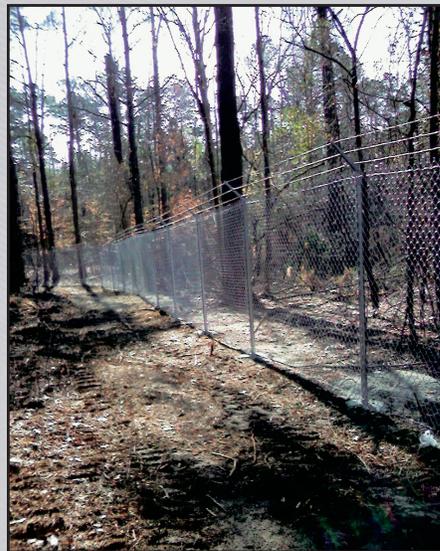
Groundwater. Semi-annual groundwater monitoring was conducted at Site 74 in 1998 and at Site 41 from 2004-2005. Monitoring was discontinued once cleanup levels were achieved.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent land use and exposure to waste.

Next Steps

Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The monitoring wells that remain in place from historic groundwater sampling will be abandoned.



Operable Unit 4 – Site 41 Fencing

Operable Unit 5

Site Overview

Operable Unit 5 is located within the Mainside of the Base and consists of one site, Site 2. Site 2 is Building 712 that was historically used for the storing, handling, and dispensing of pesticides. The primary chemicals of concern are pesticide-related compounds, metals, and VOCs.

Cleanup Activities

Soil. An excavation to remove pesticides and PCBs in soils was completed in 1994. The soil was removed to levels that are safe for industrial use.

Groundwater. Annual groundwater monitoring for VOCs was initiated in 1995. The monitoring was discontinued in 2007 once cleanup levels were achieved.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent any land use other than industrial.

Next Steps

Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. In 1997, the metals were determined not to be site-related because there was no historic metals disposal at the site and a correction will be issued to the 2008 closeout report for recordkeeping and documentation.

Operable Unit 6

Site Overview

Operable Unit 6 is located in the Camp Geiger and MCAS New River portions of the Base and consists of four sites (Sites 36, 43, 44, and 54) that are grouped together because of the similar characteristics of material disposed and geographic location. The primary chemicals of concern are VOCs, polycyclic aromatic hydrocarbons (PAHs), and pesticide-related compounds. Additionally, waste may remain in place at the sites.

Sites in Operable Unit 6

Site 36 is the former Camp Geiger Area Dump used for the disposal of municipal wastes and mixed industrial wastes including trash, waste oils, solvents, and hydraulic fluids that were generated at MCAS New River.

Site 43 is the former Agan Street Dump that received inert material such as construction debris and sewage treatment sludge.

Site 44 is the former Jones Street Dump used for the disposal of debris, cloth, lumber, and paint cans.

Site 54 is the Crash Crew Fire Training Burn Pit where jet propulsion fuel was historically used.

Cleanup Activities

Waste/Soil. Excavations to remove metallic debris and PAH-contaminated soil at Site 43 were completed in 1995 and 2003. Soil excavation to remove PCB-contamination at Site 36 was conducted in 1997. The soil was removed to levels that are safe for industrial use. LUCs are in place to eliminate exposure to the waste remaining in place at Sites 36, 43, 44, and 54.

Groundwater.

Groundwater monitoring for natural attenuation of VOCs at Site 36 was initiated in 1998 and is ongoing annually. Surface water monitoring and modeling is also conducted to monitor potential migration.

Monitored natural attenuation (MNA) relies on natural processes to clean up or “attenuate” contaminated soil and groundwater. Natural attenuation occurs at most sites; however, the right conditions must exist underground for natural attenuation to clean sites adequately. Scientists “monitor” or test these conditions to make sure natural attenuation is working.

Protection of Human Health and the Environment

Detected VOC concentrations in groundwater have remained consistent and the contamination has not migrated. Human health and the environment are protected by the LUCs. These controls prevent any land use other than industrial.

Next Steps

Monitoring will continue at Site 36 to ensure that monitored natural attenuation is effectively cleaning up groundwater. The monitoring wells that remain in place at Sites 43, 44, and 54 from historic groundwater sampling will be abandoned. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective.

Operable Unit 7

Site Overview

Operable Unit 7 is located south of the Hadnot Point Industrial Area, on the Mainside of the Base and consists of three sites (Sites 1, 28, and 30) that have been grouped together because of their similar waste disposal activities and geographic location. The primary chemicals of concern are VOCs, metals, and oil and grease. Additionally, waste may remain in place at the sites.

Sites in Operable Unit 7

Site 1 is the former French Creek Liquids Disposal Area used by mechanized, armored, and artillery units. Liquid wastes generated from vehicle maintenance were reportedly routinely poured onto the ground surface.

Site 28 is the former Hadnot Point Burn Dump where solid wastes; such as industrial waste, trash, oil-based paint, and construction debris; were disposed.

Site 30 is the former Sneads Ferry Road Fuel Tank Sludge Area where sludge and/or washout fluid was reportedly disposed of along a tank trail.

Cleanup Activities

Waste/Soil. LUCs are in place to eliminate exposure to the waste remaining in place at Sites 1, 28, and 30.

Groundwater. Semi-annual groundwater monitoring was initiated in 1996 for VOCs in groundwater at Site 1 and metals in groundwater at Site 28. The monitoring was discontinued in 2001 once cleanup levels were achieved.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent any land use other than industrial.

Next Steps

Because the cleanup levels in groundwater have been achieved, there is no risk to human health and the environment from exposure to groundwater at Sites 1 and 28 and the groundwater LUCs will be removed. The monitoring wells that remain in place from historic groundwater sampling will also be abandoned. However, for additional protection of human health from exposure to waste, the LUCs at Site 28 will be updated to restrict intrusive activities. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective.

Operable Unit 8

Site Overview

Operable Unit 8 is located adjacent to the New River in the Camp Johnson portion of the Base and is made up of only Site 16. Site 16 is the former Montford Point Burn Dump where trash from the surrounding housing area and buildings is suspected to have been burned and then covered with soil. No chemicals of concern were identified in environmental media from the site. However, waste may remain in place.

Cleanup Activities

Because there was no risk identified from exposure to site media, no action was recommended. However, LUCs were implemented by the Base in 2001 for planning purposes due to the sites past use as a dump.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent access to groundwater and any land use other than industrial.

Next Steps

For additional protection of human health from exposure to waste, the LUCs will be updated to restrict intrusive activities. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The site documentation will be updated to identify LUCs as the selected remedy for the site for recordkeeping purposes.

Operable Unit 10

Site Overview

Operable Unit 10 is located within the Camp Geiger operations area of MCAS New River and consists of only Site 35. Site 35 was the former Camp Geiger Fuel Farm composed of five large above ground storage tanks used to store fuel oil, kerosene, diesel, and gasoline. Several releases were reported during the active life of the fuel farm. A vehicle maintenance garage and weapons cleaning area were also present. The primary chemicals of concern are VOCs.

Cleanup Activities

Soil. Soil excavation to remove VOC contamination was completed in 1996.

Groundwater. Several actions were conducted to treat the VOCs in groundwater, including an air sparge trench operated from 1998 to 2009, chemical oxidant injections from 2003 through 2005, and injections of vegetable oil

in 2007. To address the largest portion of the groundwater plume, a horizontal well was installed in 2010 to conduct air sparging. LTM will be conducted for MNA of VOCs in groundwater, to evaluate the effectiveness of the system, and to monitor potential migration.

Air sparging uses air to help remove harmful vapors from contaminated soil and groundwater below the water table. When air is pumped underground, the chemicals evaporate faster, which makes them easier to remove.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent the use of groundwater until cleanup levels are achieved.



Operable Unit 10 – Site 35 Proximal End of Horizontal Air Sparge Well and Compressor System Container in Background

Next Steps

Air sparging will be conducted until the groundwater is cleaned up or when the results of the groundwater monitoring ensure that MNA is effectively cleaning up groundwater. Quarterly site inspections will be conducted to ensure LUCs are properly in place and protective.

Operable Unit 11

Site Overview

Operable Unit 11 is located in the northeast portion of the Base, adjacent to the Northeast Creek and consists of two sites (Sites 7 and 80) that have been grouped together because of their similar disposal history and proximity to one another. The primary chemicals of concern are pesticides at Site 80. No contamination was identified at Site 7.

Sites in Operable Unit 11

Site 7 is the former Tarawa Terrace Dump where construction debris, water treatment plant filter media, and household trash were reportedly disposed of.

Site 80 is the Paradise Point Golf Course Maintenance Area where past maintenance procedures and types of wastes disposed of is unknown.

Cleanup Activities

Waste/Soil. Soil excavation to remove pesticide contamination at Site 80 was completed in 1996. The soil was removed to levels that are safe for industrial use.

Groundwater. No contamination was identified in groundwater.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent access to contaminated soil and any land use other than industrial.

Next Steps

The site documentation will be updated to identify LUCs as the selected remedy for Site 80 for recordkeeping purposes. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective.

Operable Unit 12

Site Overview

Operable Unit 12 is located on the Mainside of the Base and consists of only Site 3. Site 3 was the Old Creosote Plant used to supply treated lumber during construction of the Base Railroad. An onsite sawmill, which supplied cut timbers for the creosote

treatment, was reportedly located in the northern portion of the Site. The primary chemicals of concern are PAHs and VOCs.

Cleanup Activities

Soil. Soil excavation to remove PAH contamination was completed in 2000. The soil was removed to levels that are safe for industrial use.

Groundwater. Groundwater monitoring of VOCs and PAHs was initiated in 1997 and is ongoing annually.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent access to contaminated soil and groundwater and prohibit any land use other than industrial.

Next Steps

Monitoring will continue to evaluate the concentrations of VOCs and PAHs in groundwater until they are below the cleanup levels. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective.

Operable Unit 13

Site Overview

Operable Unit 13 is located south of the MCAS New River and consists of only Site 63. Site 63 was the former Verona Loop Dump that reportedly received bivouac wastes generated during training exercises. No chemicals of concern were identified in environmental media from the site. However, waste may remain in place.

Cleanup Activities

Because there was no risk identified from exposure to site media, no action was recommended. However, LUCs were implemented by the Base in 2001 for planning purposes due to the sites past use as a dump.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent access and use of groundwater.

Next Steps

For additional protection of human health from exposure to waste, the LUCs will be updated to restrict intrusive activities and prohibit any land use other than industrial. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The site documentation will be updated to identify LUCs as the selected remedy for the site for recordkeeping purposes. The monitoring wells that remain in place from historic groundwater sampling will be abandoned.

Operable Unit 14

Site Overview

Operable Unit 14 is located in the Rifle Range operations area near Sneads Ferry and is comprised of only Site 69. The former Rifle Range Chemical Dump was reportedly used to dispose of chemical wastes including pesticides, PCBs, solvents, and drums of gas that possibly contained cyanide (i.e., tear gas) or other training agents, also known as chemical warfare materials. The primary chemicals of concern are VOCs. Waste also remains in place at the site.

Cleanup Activities

Waste/Soil. LUCs are in place to eliminate exposure to the waste in place.

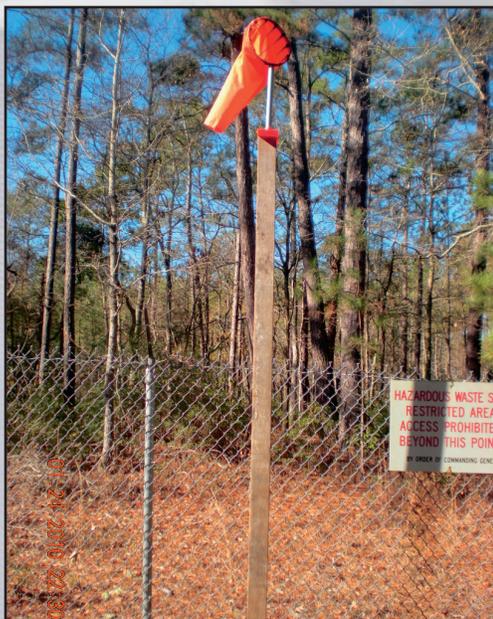
Groundwater. Groundwater monitoring for natural attenuation of VOCs was initiated in 1998 and was discontinued in 2005 based on the planned and ongoing investigation to delineate the VOCs in groundwater. LUCs are in place to restrict exposure to the groundwater.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prohibit any land use other than industrial and prevent exposure to contaminated groundwater and waste.

Next Steps

Investigation activities are ongoing to define the nature and extent of contamination. Upon completion, remedial alternatives will be evaluated to address the VOCs in groundwater. Quarterly site inspections will be continued to ensure LUCs are properly in place and protective.



Operable Unit 14 – Site 69 Fencing and Signage

Operable Unit 15

Site Overview

Operable Unit 15 is located on the Mainside of the Base and consists of only Site 88, the former Base Dry Cleaning Facility. Underground and aboveground storage tanks were historically used to store dry cleaning fluids. The primary chemicals of concern are VOCs.

Cleanup Activities

Soil/Groundwater. Soil mixing with clay and zero-valent iron was completed in the source area in 2005. Several pilot studies have been conducted to treat the VOCs in groundwater, including free-phase liquid recovery from 1998 through 2004, surfactant injections from 1999 through 2000, bioremediation with fluid vapor recovery in 2001 through 2002, and injection of chemical oxidants and vegetable oil in 2009 through 2011.

Soil mixing utilizes a large diameter auger to mix the contamination with zero valent iron (ZVI) and bentonite (clay). ZVI reacts with contaminants and destroys the contaminant compounds, while bentonite promotes uniform distribution of the ZVI.

Protection of Human Health and the Environment

Because a remedial action is not yet in place, the Base ensures protectiveness of onsite workers and evaluates property use through the Base Master Planning process by maintaining up-to-date groundwater contamination boundaries.

Next Steps



Based on the results of the ongoing pilot study, remedial alternatives will be evaluated to address the VOCs in groundwater.

Operable Unit 15 – Site 88 Pilot Study – Vegetable Oil Injections

Operable Unit 16

Site Overview

Operable Unit 16 is located in the Camp Geiger operations area at MCAS New River and consists of two sites (Sites 89 and 93) that have been grouped together because of their proximity to one another and unique characteristic of suspected waste (solvents). The primary chemicals of concern are VOCs in groundwater at Sites 89 and 93 and PAHs in sediment at Site 89.

Sites in Operable Unit 16

Site 89 is the former Base Motor Pool where solvents were used for parts cleaning. The Defense Reutilization and Marketing Office was also operated at the site as a storage yard for items such as scrap and surplus metal, electronic equipment, vehicles, rubber tires, and fuel bladders.

Site 93 is Building TC942 where historical records indicate that an underground storage tank storing waste oil was previously located.

Cleanup Activities

Soil. At Site 89, removal and treatment of VOCs in the southern portion of the site was conducted in 2000 and soil mixing with clay and zero-valent iron was completed in the source area in 2008. In 2010, a soil removal to address PAHs in sediment was completed at Site 89.

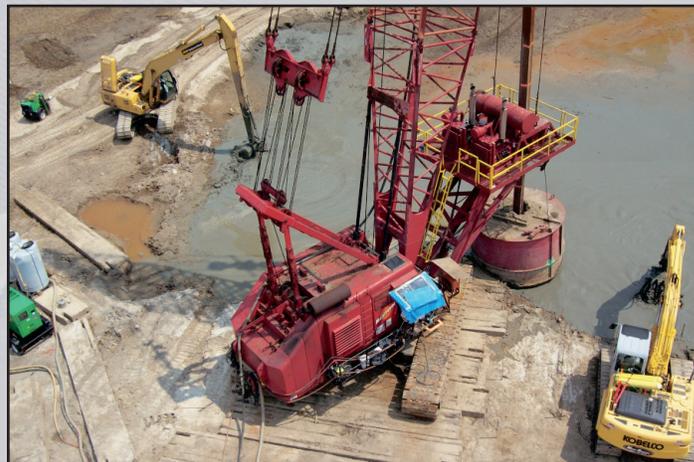
Groundwater. Several pilot studies have been conducted to treat the VOCs in groundwater at Site 89, including electrical resistance heating from 2001 to 2004; and air sparging using a horizontal well, a mulch/compost treatment wall, and injection of chemicals and vegetable oil in 2006. At Site 93, chemical oxidants were injected from 2006 through 2008. In 1998, LTM for monitored natural attenuation of VOCs in groundwater was initiated at Site 93 and is ongoing annually. LUCs are also in place at Site 93 to restrict exposure to the groundwater.

Electrical resistance heating (ERH) utilizes metallic probes to pass electrical currents through the area of contamination. The electrical currents heat the subsurface to volatilize and remove organic compounds from the soil and groundwater.

Protection of Human Health and the Environment

Because a remedial action is not yet in place at Site 89, the Base ensures protectiveness of onsite workers and evaluates

property use through the Base Master Planning process by maintaining up-to-date groundwater contamination boundaries. A fence was also installed around the site boundary to restrict access. At Site 93, LUCs are in place to prohibit groundwater intrusive activities and aquifer use until cleanup levels are achieved.



Operable Unit 16 – Site 89 Soil Mixing

Next Steps

For Site 89, remedial alternatives are currently being evaluated to address the VOCs in groundwater. For Site 93, monitoring will continue to ensure that MNA is effectively cleaning up groundwater and quarterly site inspections will be continued to ensure LUCs are properly in place and protective.

Operable Unit 19

Site Overview

Operable Unit 19 is located within Mainside, one mile west of the Main Gate and consists of only Site 84. Former Building 45 was an electric substation, where transformers reportedly containing PCBs were used and stored. The primary chemicals of concern are PCBs.

Cleanup Activities

Soil. Soil excavation to remove PCB contamination was conducted from 2002 through 2006. The soil was removed to levels that are safe for industrial use. A soil cover and LUCs were put in place to prevent exposure to PCBs remaining in soil. Fencing and signage were also installed to restrict access.

Groundwater. No contamination was identified in groundwater.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent land use and exposure to soil.



Operable Unit 19 – Site 84 Fencing and Signage

Next Steps

Quarterly site inspections will be continued to ensure LUCs are properly in place and protective. The monitoring wells that remain in place from historic groundwater sampling will be abandoned.

Operable Unit 21

Site Overview

Operable Unit 21 is located in the Courthouse Bay area on the Mainside of the Base and is comprised of only Site 73. Site 73 is the Amphibious Vehicle Maintenance Facility where used motor oil and battery acid were reportedly discharged directly to the ground surface. The primary chemicals of concern are petroleum-related compounds and VOCs.

Cleanup Activities

Soil. LUCs are in place to eliminate exposure to petroleum-related compounds in soil.

Groundwater. Several actions were conducted to treat the VOCs in groundwater, including vertical air sparging in 2002 and horizontal air sparging from 2003 through 2009 using hydrogen and ozone. To address the entire groundwater plume, the existing horizontal well will be used to continue air sparging and downgradient vegetable oil injection will be conducted to ensure VOC concentrations are not impacting the adjacent surface water body. LTM and MNA will be conducted to evaluate the effectiveness and monitor plume migration.

Protection of Human Health and the Environment

Human health and the environment are protected by the LUCs. These controls prevent access to contaminated soil and prohibit the use of groundwater until cleanup levels are achieved.

Next Steps

Air sparging and vegetable oil injections will be conducted until the groundwater is cleaned up or when the results of the groundwater monitoring ensure that MNA is effectively cleaning up groundwater and VOCs are not impacting the adjacent surface water body. Quarterly site inspections will be conducted to ensure LUCs are properly in place and protective.



Operable Unit 21 – Site 73 Compressor System for Horizontal Well

Conclusions and Next Steps

In summary, the Five-Year Review indicated that all ongoing remedial actions were determined to be protective of human health and the environment. The next Five-Year Review at Marine Corps Base Camp Lejeune will be completed in 2015. Recommendations of the current Five-Year Review will be followed and/or completed as described in this fact sheet.

For more information about the environmental cleanup program at Marine Corps Base Camp Lejeune, please visit the Administrative Record file at Onslow County Library or the public website (referenced on page 10).

For More Information

The Administrative Record for technical reports and other information about the environmental cleanup program at Marine Corps Base Camp Lejeune, including all documents that were used as the basis for the five-year review, is available to the public at the following website:

https://portal.navfac.navy.mil/portal/page/portal/navfac/navfac_vww_pp/navfac_hq_pp/navfac_env_pp/env_restoration_installations/lant/midlant/lejeune

Access to the Administrative Record file is available to the public at the following location:

Onslow Public Library

58 Doris Avenue East

Jacksonville, NC 28540

(910) 455-7350

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