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MCB CAMP LEJEUNE
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NO ACTION DECISION DOCUMENT SITE 15 FORMER MONTFORD POINT BURN DUMP
MCB CAMP LEJEUNE NC
2/1/2013
MCB CAMP LEJEUNE



No Action Decision Document
Installation Restoration Program
Site 15 – Former Montford Point Burn Dump
Marine Corps Installations East - Marine Corps Base Camp Lejeune
Jacksonville, North Carolina
November 2012

1 Declaration

This No Action Decision Document (NADD) presents the No Further Action (NFA) determination for Installation Restoration (IR) Site 15-Former Montford Point Burn Dump, located at Marine Corps Installations East-Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ), North Carolina. MCIEAST-MCB CAMLEJ was placed on the U.S. Environmental Protection Agency (USEPA) National Priorities List (NPL) effective November 4, 1989 (EPA ID: NC6170022580). As a result of the NPL listing and pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), USEPA Region 4, the North Carolina Department of Environment and Natural Resources (NCDENR), the Department of the Navy (Navy), and the Marine Corps entered into a Federal Facilities Agreement (FFA) for MCIEAST-MCB CAMLEJ in 1991. The primary purpose of the FFA is to ensure that the environmental impacts associated with past and current activities at the Base are thoroughly investigated.

Site 15, previously known as Solid Waste Management Unit (SWMU) 46, was transferred to the IR Program at MCIEAST-MCB CAMLEJ in December 2007 to address subsurface soil contamination and buried waste at the site. Environmental investigations were conducted at IR Site 15 from 2009 through 2012, and based on the results no unacceptable risks to human health or the environment have been identified.

The NFA determination has been made in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, and with the National Oil and Hazardous Substances Pollution Contingency Plan. The Navy and the Marine Corps issued this NADD and obtained concurrence from USEPA Region 4 and NCDENR on the NFA decision. Copies of the USEPA and NCDENR approval letters are presented in Attachment A.

1.1 Authorizing Signature

THOMAS A. GORRY
Brigadier General, U.S. Marine Corps
Commanding General
Marine Corps Installations East-Marine Corps Base, Camp Lejeune

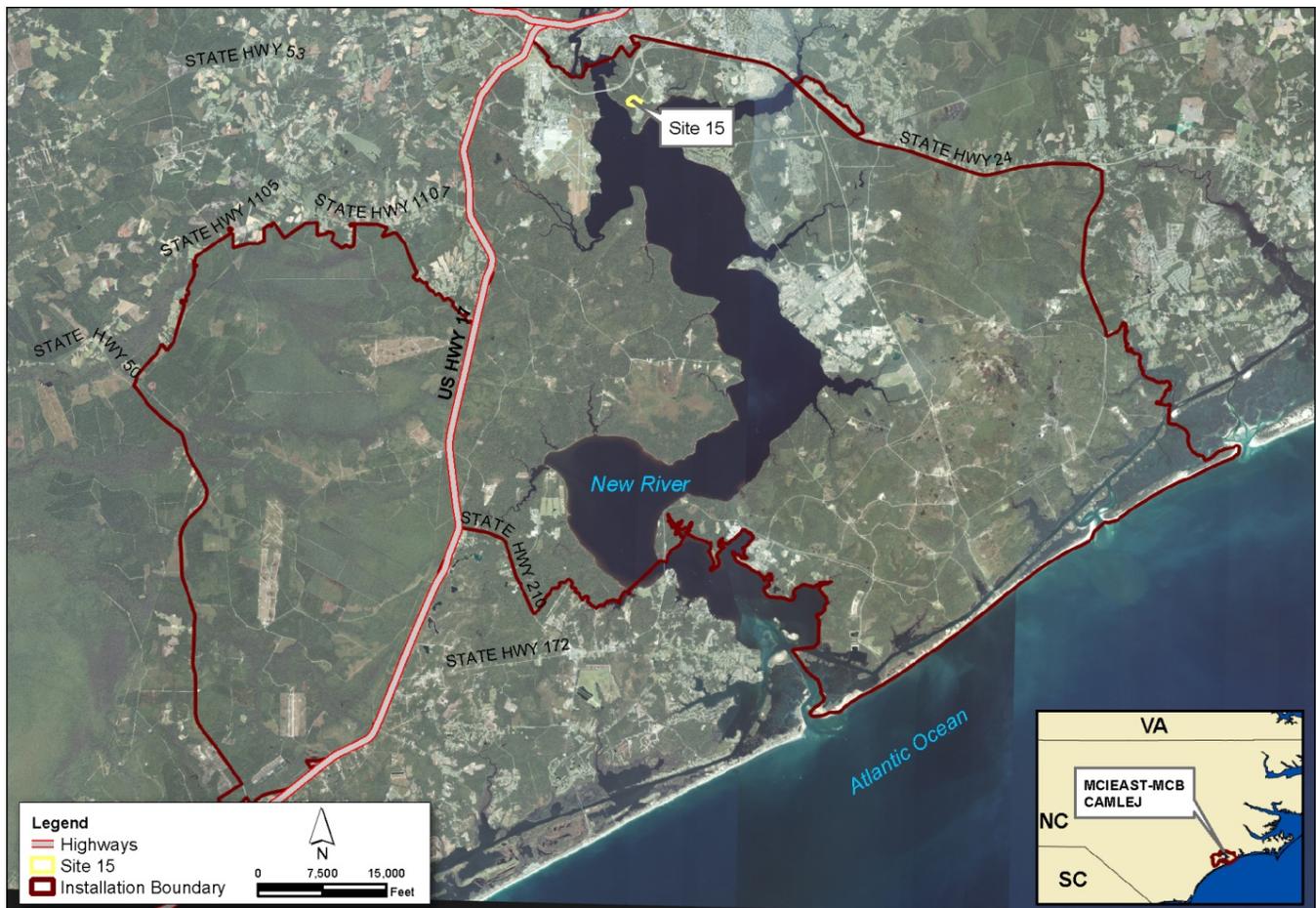
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2 Decision Summary

2.1 Site Description and History

MCIEAST-MCB CAMLEJ is a 156,000-acre facility located in Onslow County, North Carolina, adjacent to the southern side of the city of Jacksonville (Figure 1). The mission of MCIEAST-MCB CAMLEJ is to maintain combat-ready units for expeditionary deployment. The Base provides housing, training facilities, and logistical support for Fleet Marine Force units and other assigned units.

FIGURE 1
Base Location Map



Site 15 is an undeveloped tract of land encompassing approximately 24 acres in the Camp Johnson area of MCIEAST-MCB CAMLEJ (Figure 2). Historical investigations indicate that the former disposal area covered approximately 2 acres in the eastern portion of the site.

Site 15 is the former Montford Point Burn Dump that operated between 1946 and 1958; during which time, various wastes such as sewage treatment sludge, litter, asphalt and sand were reportedly disposed and buried at the site (Baker/CH2M HILL, 2005). The extent of the disposal area at the former burn dump has been characterized through geophysical and intrusive investigations.

FIGURE 2
Site Map



2.2 Site Characteristics

Site 15 consists of an open grassy area surrounded by forest (Figure 2). Surface topography is flat with a ground surface elevation of approximately 15 feet above mean sea level (amsl).

Soils at the site are composed of fine-grained silts and silty sands to approximately 6 feet below ground surface (ft bgs) with trace amounts of clay underlain by fine-grained sand to at least 16 feet bgs (the maximum depth of investigation). Shallow groundwater generally flows southwest toward the New River. During the expanded site investigation (ESI), depths to groundwater ranged between 6.7 to 8 ft bgs.

2.3 Previous Investigations

Table 1 provides a brief chronology of historical investigations and removal actions at Site 15.

TABLE 1
Previous Investigations

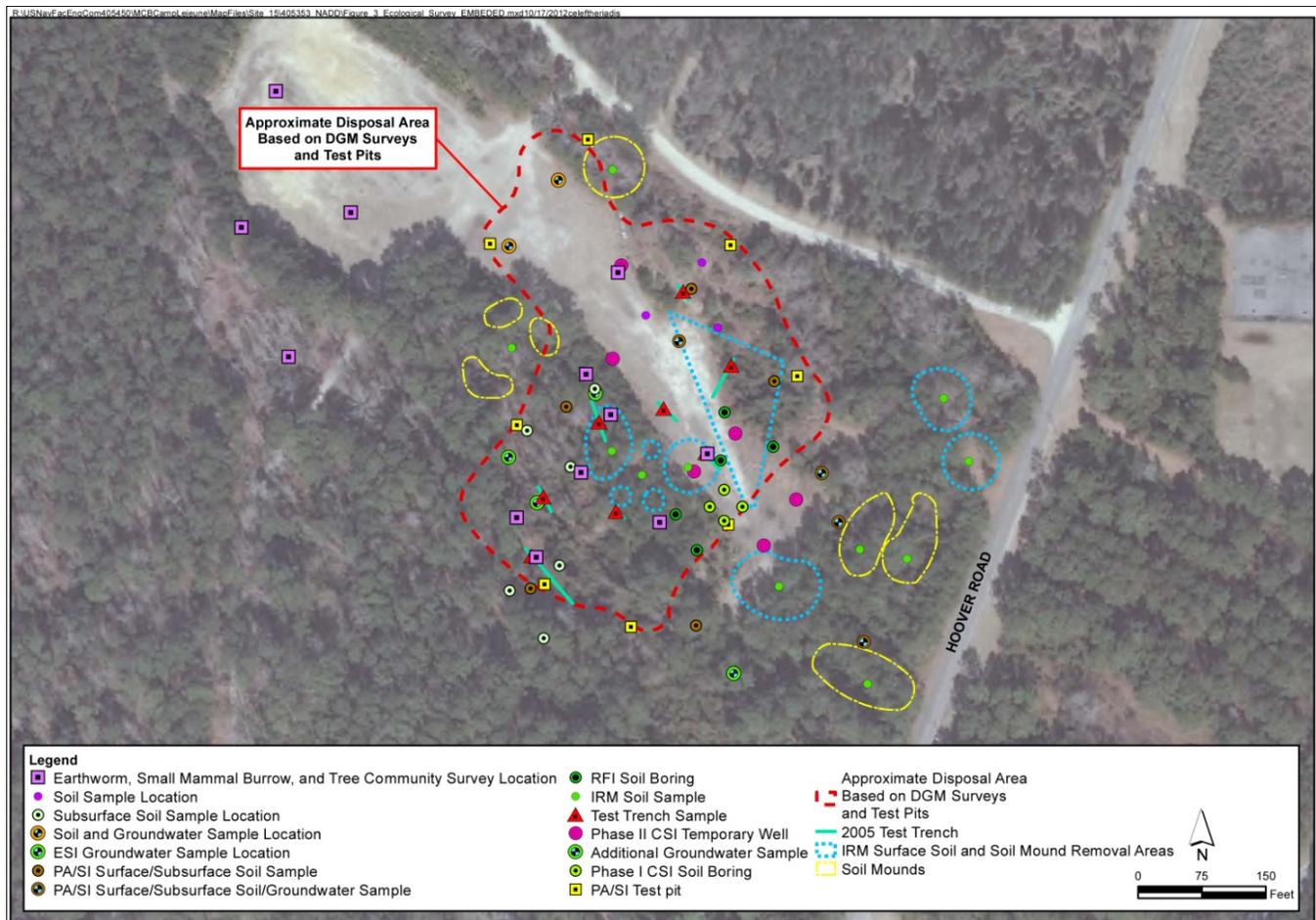
Investigation/Action	Date	Reference	Summary
RCRA Facility Assessment (RFA)	1989	EnSafe, 1996	Initial RFAs of 76 SWMUs identified SWMU 46 as a site that required confirmatory sampling due to previous disposal activities at the site.
SWMU 46 Phase I Confirmatory Site Investigation (CSI)	1997	Baker, 1997	Surface and subsurface soil samples were collected. Several metals were detected in subsurface soil samples at concentrations exceeding regulatory screening criteria. Additional site assessment was recommended.
SWMU 46 Phase II CSI	2002	Baker, 2002	Several metals were detected in surface soil, subsurface soil, and groundwater samples at concentrations exceeding regulatory screening criteria. A geophysical survey was conducted to assess the approximate extent of buried debris. Additional investigation was recommended to characterize the nature and extent and to evaluate human health and ecological risks.
SWMU 46 RCRA Facility Investigation (RFI)	2005	Baker/CH2M HILL, 2005	<p>Additional investigation included a supplemental geophysical survey, test trench excavation and confirmatory soil sampling, surface and subsurface soil sampling, and the installation of one permanent monitoring well. Inert waste material such as glass, metal debris, ceramic, ash, and other burned debris were encountered in the test trenches.</p> <p>A human health risk assessment (HHRA) identified potential human health risks from exposure to metals in soil and groundwater. An Ecological Risk Assessment (ERA) concluded that terrestrial receptors may be at risk from exposure to metals in surface soils.</p> <p>The RFI report recommended additional soil delineation around the surface soil mounds and additional groundwater sampling around the former disposal area.</p>
Additional assessment	2006	CH2M HILL, 2006	Surface soil samples were collected in order to provide guidance for an interim remedial measure (IRM) removal action. Pesticides and metals were detected in surface soil and soil mounds and several areas were recommended for removal.
SWMU 46 IRM	2007	Shaw, 2007	A total of 1,039 tons of surface soil was removed and disposed at the Base landfill. Confirmatory soil samples were collected from the removal areas and submitted for laboratory analysis of pesticides and RCRA metals. Mercury was detected in one composite soil sample above the North Carolina Soil Screening Level (NCSSL); however, the concentration was only slightly greater than the Base background concentration. No additional excavation was conducted. On December 28, 2007, following completion of the surface soil removal action, SWMU 46 was transferred to the IR Program as Site 15 to address potential contamination in subsurface soils and buried waste at the site.
Camp Johnson Preliminary Assessment/Site Investigation (PA/SI)	2009	CH2M HILL, 2011b	<p>The PA/SI was conducted to identify and characterize potential environmental impacts, evaluate the potential risks to human health and the environment, and evaluate whether additional investigation and/or remediation activities are necessary.</p> <p>Additional test pits were excavated to further delineate the extent of buried material. With the exception of small pieces of polyvinyl chloride (PVC) pipe, metal, and ceramics in two test pits, buried waste was not encountered.</p>

TABLE 1
Previous Investigations

Investigation/Action	Date	Reference	Summary
			A human health risk screening (HHRS) identified potentially unacceptable risks due to exposure to chromium in groundwater. Potentially unacceptable ecological risks were identified due to exposure to metals, pesticides, and polychlorinated biphenyls (PCBs) in surface soil and subsurface soil areas. Thus, additional groundwater and soil assessment was recommended.
Site 15 ESI	2010	CH2M HILL, 2012	Additional soil and groundwater samples were collected to refine the results of the PA/SI. An ecological receptor survey was conducted to refine the ERA. The results and human health and ecological risk assessments are presented in the following subsections. Based on the results of analytical data and risk assessments, no further action was recommended.

Figure 3 depicts the locations of historical media sampling locations.

FIGURE 3
Sampling Locations



A summary of soil and groundwater exceedances from the preliminary assessment/ site inspection (PA/SI) and ESI are provided in **Table 2** and **Table 3**, respectively. The highest concentrations detected for each chemical or metal from the PA/SI or ESI are listed. Refer to the PA/SI (CH2M HILL, 2011a) for a summary of historical investigation and removal action results.

TABLE 2
Soil Exceedances

Chemical Name	Surface Soil Maximum Concentration	Subsurface Soil Maximum Concentration	Residential Soil Adjusted RSL	NC SSL	Base Background Surface Soil 2X Mean	Base Background Subsurface Soil 2X Mean
SVOCs (micrograms per kilogram)						
Benzo(a)pyrene	160	30	15	59	--	--
Pesticides and PCBs (micrograms per kilogram)						
4,4-DDD	7.5 J	1,500 J	2,000	240	--	--
4,4-DDE	25 J	1,500 J	1,400	--	--	--
4,4-DDT	39	31,000	1,700	340	--	--
Dieldrin	1.7 J	2.5 J	30	0.81	--	--
Aroclor-1254	360 J	--	110	--	--	--
Metals (milligrams per kilogram)						
Aluminum	12,500	6,070 J	7,700	--	5,487	10,369
Arsenic	4.7	16.6	0.39	5.8	0.626	2.12
Chromium	17.2	52.4 J	0.29	3.8	6.05	14.5
Chromium (hexavalent)	0.58 J	0.37 J	7	3	0.033	--
Iron	10,200	179,000 J+	5,500	150	3,245	5,439
Lead	70.3	483	400	270	12.3	8.49
Manganese	160 J	626	180	65	13.7	9.25
Mercury	1.2	0.14	2.4	1	0.081	0.071
Thallium	0.036 J	1.9 J	0.078	0.28	0.36	--

J—Analyte present, value may or may not be accurate or precise

J+ - Analyte present, value may be biased high, actual value may be lower

RSL—USEPA regional screening level

NC SSL—North Carolina Soil Screening Level

Screening criteria reflect the values that were current at the time the ESI Report was prepared

TABLE 3
Groundwater Exceedances

Chemical Name	Groundwater Maximum Concentration	Adjusted Tap Water RSL	NCGWQS	Base Background Groundwater 2X Mean
SVOCs (micrograms per liter)				
Benzo(a)anthracene	0.12 J	0.029	0.05	--
Benzo(a)pyrene	0.072 J	0.0029	0.005	--
Benzo(b)fluoranthene	0.072 J	0.029	0.05	--
Metals (micrograms per liter)				
Chromium	5 J	0.043	10	3.13
Cobalt	3.9 J	1.1	--	3.4
Iron	25,800	2,600	300	5,999
Manganese	439	88	50	214

J—Analyte present, value may or may not be accurate or precise.

NCGWQS— North Carolina Groundwater Quality Standards

Screening criteria reflect the values that were current at the time the ESI Report was prepared

2.4 Current and Potential Future Land and Resource Uses

Currently, Site 15 is used by the Marine Corps Combat Services Support School for training exercises. A military construction project is planned in the vicinity of Site 15, but not actually on the site.

Groundwater from the surficial aquifer at MCIEAST-MCB CAMLEJ, including Site 15, is not currently used as a potable water supply. Potable water available to MCIEAST-MCB CAMLEJ and the surrounding residential area is provided by water supply wells that pump groundwater from a deep aquifer.

2.5 Summary of Human Health Risk Assessment

The HHRA was conducted in two phases. The first phase entailed comparing the site data to appropriate human health risk-based screening values and performing a risk ratio. If any of the media indicated the potential for unacceptable human health risks based on the risk ratio method, that medium was carried forward to the second phase of evaluation, a complete baseline HHRA.

Phase 1 Human Health Risk Screening and Risk Ratio Evaluation

Phase 1 was conducted in three steps using a risk ratio technique (Navy, 2000). If contaminants of potential concern (COPCs) were identified after Step 1, the COPCs were evaluated in Step 2. If COPCs were identified after Step 2, the COPCs were evaluated in Step 3.

In Step 1, the maximum detected constituent concentration for each media was screened against the following criteria:

- Soil—USEPA adjusted residential RSLs (USEPA, 2010a; RSLs based on noncarcinogenic endpoints are adjusted by dividing the RSL by 10; RSLs based on carcinogenic endpoints are not adjusted) and two times the mean surface and subsurface soil background concentration (for metals) (Baker, 2001).

- Groundwater—USEPA adjusted tap water RSLs (USEPA, 2010a), NCGWQS (NCDENR, 2010), federal maximum contaminant levels (MCLs), and two times the mean groundwater background concentration (for metals) (Baker, 2002). The NCGWQS and MCL, however, were not used to identify COPCs.

If the maximum detected concentration in soil and groundwater exceeded the appropriate screening value and background concentration, where applicable, the screening level risk evaluation proceeded to Step 2.

For constituents identified as COPCs in Step 1, a corresponding risk level was calculated in Step 2 using the following equation:

$$\text{corresponding risk level} = \frac{\text{concentration} \times \text{acceptable risk level}}{RSL}$$

All of the corresponding risk levels for each analyte within a media were summed to calculate the cumulative corresponding hazard index (HI) (for noncarcinogens) and cumulative corresponding carcinogenic risk (for carcinogens). A cumulative corresponding HI was also calculated for each target organ/effect. If the cumulative corresponding HI for a target organ/effect was greater than 0.5, or the cumulative corresponding carcinogenic risk was greater than 5×10^{-5} , the analytes contributing to these values were retained as COPCs and carried forward to Step 3.

In Step 3, a corresponding risk level was calculated as discussed above for Step 2. However, to obtain a more site-specific ratio, the 95 percent upper confidence limit (UCL) was used in place of the maximum detected concentration, if more than five samples were collected from a medium and the analyte was detected in more than one of the samples. If the cumulative corresponding HI by target organ/effect was greater than 0.5, or the cumulative corresponding carcinogenic risk was greater than 5×10^{-5} , then constituents contributing to these values were considered COPCs and the medium was evaluated in Phase II, the HHRA.

The human health risk screening (HHRS) did not identify potential human health risks due to exposure to surface soil or combined surface and subsurface soil. Therefore, the soil was not evaluated further as part of the baseline HHRA. The HHRS identified potential unacceptable human health risks due to exposure to hexavalent chromium in groundwater. Therefore, an HHRA was conducted to further analyze potential human health risks. A summary of the HHRS is presented in **Table 4**.

TABLE 4
HHRS Summary

Media	Step 1 COPCs	Step 2 COPCs	Step 3 COPCs	Conclusion
Surface Soil	benzo(a)anthracene benzo(a)pyrene benzo(b)fluoranthene benzo(k)fluoranthene chrysene dibenz(a,h)anthracene indeno(1,2,3-cd)pyrene aroclor-1254 aluminum arsenic chromium hexavalent chromium iron lead	benzo(a)anthracene benzo(a)pyrene benzo(b)fluoranthene benzo(k)fluoranthene chrysene dibenz(a,h)anthracene indeno(1,2,3-cd)pyrene aroclor-1254 arsenic chromium hexavalent chromium lead	none	No unacceptable risks to human health expected from exposure to surface soil.

TABLE 4
HHRS Summary

Media	Step 1 COPCs	Step 2 COPCs	Step 3 COPCs	Conclusion
Combined Surface and Subsurface Soil	benzo(a)anthracene	benzo(a)anthracene	iron	No unacceptable risks to human health expected from exposure to site soils based on low exceedance rate of screening level for iron (1/27) and the 95% UCL is below acceptable screening level. Iron identified as essential human nutrient. Based on the model used to evaluate lead, the concentrations in combined surface and subsurface soil would not result in an unacceptable risk.
	benzo(a)pyrene	benzo(a)pyrene	lead	
	benzo(b)fluoranthene	benzo(b)fluoranthene		
	benzo(k)fluoranthene	benzo(k)fluoranthene		
	chrysene	chrysene		
	dibenz(a,h)anthracene	dibenz(a,h)anthracene		
	indeno(1,2,3-cd)pyrene	indeno(1,2,3-cd)pyrene		
	4,4'-dichlorodiphenyldichloroethane (4,4-DDD)	4,4-DDD		
	4,4'-dichlorodiphenyldichloroethane (4,4-DDE)	4,4-DDE		
	4,4'-dichlorodiphenyldichloroethane (4,4-DDT)	4,4-DDT		
	4,4'-dichlorodiphenyltrichloroethane (4,4-DDT)	aroclor-1254		
	aroclor-1254	arsenic		
	aluminum	hexavalent chromium		
	arsenic	iron		
	cadmium	lead		
	hexavalent chromium			
	cobalt			
iron				
lead				
manganese				
Groundwater	benzo(a)anthracene	benzo(a)anthracene	hexavalent chromium	Exposure to groundwater could result in unacceptable human health risks from exposure to hexavalent chromium. Further evaluation of the potential human health risks, was conducted as part of the HHRA presented below.
	benzo(a)pyrene	benzo(a)pyrene		
	benzo(b)fluoranthene	benzo(b)fluoranthene		
	benzo(k)fluoranthene	benzo(k)fluoranthene		
	hexavalent chromium	hexavalent chromium		
	cobalt	iron		
	iron			
manganese				

Phase 2 Human Health Risk Assessment

A baseline HHRA was performed for groundwater based on the results of the Phase I HHRS. The primary objective of the HHRA was to assess the health risks associated with exposure to groundwater under current site conditions. All of the groundwater data used in Phase I were quantitatively evaluated in Phase II of the risk assessment. The methodology used to select the COPCs for quantitative evaluation in the HHRA was the same as Step 1 of the Phase I risk screening evaluation. The complete HHRA evaluated exposure to groundwater for future adult and child residents, and construction workers.

Potential future contact with shallow groundwater by construction workers would not result in unacceptable risks and hazards exceeding USEPA's acceptable risk range and hazard level.

Potential contact with groundwater by future adult residents (noncarcinogenic hazard) would not result in unacceptable risks and hazards exceeding USEPA's acceptable risk range and hazard level.

Potential contact with groundwater by future child residents may result in a reasonable maximum exposure (RME) noncarcinogenic hazard above USEPA's target HI. This hazard is associated with ingestion of iron. However, iron was not retained as a chemical of concern (COC) for groundwater because the concentrations were within Base-wide background concentration ranges and were below the upper limit that was likely to pose a risk of adverse effects to a child. In addition, the central tendency exposure (CTE) noncarcinogenic hazard was below USEPA's target HI of 1.

Potential contact with groundwater by future lifetime residents (carcinogenic risks) would result in RME and CTE risks above USEPA's acceptable level of 1×10^{-4} . The concentration of benzo(a)pyrene was the primary contributor. However, benzo(a)pyrene was detected at estimated concentrations in only one of the eight groundwater samples analyzed for PAHs, and was not detected in the duplicate sample collected from the same location. Furthermore, the maximum detected concentrations of benzo(a)pyrene and hexavalent chromium were below their respective MCLs. Therefore, potential unacceptable human health risks are minimal because of the sporadic nature of the detection of PAHs and the unlikelihood that shallow groundwater would be used for potable water because of poor yield and water quality.

2.6 Summary of Ecological Risk Assessment

The ERA included a preliminary ecological risk screening performed during the PA/SI (CH2M HILL, 2011) and steps 1, 2 (screening-level ERA [SLERA]) and Step 3a (baseline ERA) for terrestrial habitats performed during the ESI (CH2M HILL, 2012).

Preliminary Ecological Risk Screening

Surface soil, subsurface soil, and groundwater data were screened against ecological screening values (ESVs) intended to be protective of ecological receptors. Potential ecological receptors include: plants, soil invertebrates, benthic invertebrates, amphibians, fish, mammals, reptiles, and birds. For each sample medium, the maximum concentration or maximum detection limit for non-detected analytes were compared to the screening value to derive a hazard quotient (HQ). An HQ greater than 1 suggests the potential for risk. The screening values were identified from the following sources:

- *USEPA Ecological Soil Screening Levels* (<http://www.epa.gov/ecotox/ecossl/>) (USEPA, 2009a)
- *USEPA Region 4 Recommended Ecological Screening Values* (<http://www.epa.gov/region04/waste/ots/ecolbul.htm>) (USEPA, 2001a).
- USEPA National Recommended Water Quality Criteria (USEPA, 2009b)

Based on the results of the preliminary ecological risk screening, no risks to ecological receptors from exposure groundwater were identified. However, potential risks to ecological receptors from exposure to three pesticides (4,4-DDD, 4,4-DDE, and 4,4-DDT) and four metals (antimony, iron, lead and zinc) in subsurface soil were identified. Additionally, potential risks to ecological receptors from exposure to one PCB (aroclor-1254), three pesticides (4,4-DDD, 4,4-DDE, and 4,4-DDT) and one metal (mercury) in surface soil were identified.

ERA

An ERA was completed to refine the results of the risk screening conducted as part of the PA/SI. The ERA included Steps 1 through Step 3a (baseline ERA) of the ERA process. The ERA evaluated surface soil, subsurface soil, and groundwater data that was collected in 1997, 2002, 2004, 2005, 2009, and 2010. The ERA was performed in accordance with the following guidance:

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997)
- Region 4 Ecological Risk Assessment Bulletins—Supplement to RAGS (USEPA, 2001b)

- Navy Guidance for Conducting Ecological Risk Assessments (Navy, 2003)
- NCDENR Division of Waste Management - Guidelines for Performing Screening Level Ecological Risk Assessments within the North Carolina (NCDENR, 2003)

The potential for effects from exposure to each medium was initially evaluated by comparing ESVs to maximum concentrations (Step 2) of constituents detected at the site. For soil, the USEPA Ecological Soil Screening Levels (EcoSSL) (USEPA, 2009b) were preferentially selected over USEPA Region 4 values (USEPA, 2001). If no USEPA EcoSSL was available for a constituent, the USEPA Region 4 value was selected.

A selection hierarchy was also applied to groundwater. The National Recommended Water Quality Criteria (NRWQC) (USEPA, 2009a) were preferentially selected over the USEPA Region 4 values. However, when no NRWQC was available for a constituent, the USEPA Region 4 value was selected as the ESV. Marine screening values were selected for the groundwater comparison because of the potential for discharge to the New River. It should be noted that comparison of groundwater concentrations to surface water ESVs is a highly conservative comparison, because it is expected that dilution and dispersion would occur prior to discharge, and significant dilution would occur immediately following any discharge to the New River.

Maximum soil and groundwater inorganic concentrations were also compared to two times the mean Base background concentrations as part of Step 2 (Baker, 2001a).

HQs were calculated by dividing the maximum concentration detected within a media by the corresponding medium-specific ESV. Maximum concentrations for detected analytes and maximum detection limits for undetected analytes were used to conservatively estimate potential chemical exposures to ecological receptors.

North Carolina SLERA guidance (NCDENR, 2003) requires that constituents falling into one of the following categories be identified as a Step 2 COPC:

- Category 1—Contaminants with a maximum detection exceeding the ESV
- Category 2—Undetected contaminants with a laboratory sample quantitation limit exceeding the ESV
- Category 3—Detected contaminants with no ESV
- Category 4—Undetected contaminants with no ESV

Based on the results, 105 COPCs in surface soil, 93 COPCs in subsurface soil, and 105 COPCs in groundwater were carried forward to Step 3.

Using the conceptual site model, Step 3a involves re-evaluation of the conservative assumptions used in Steps 1 and 2, resulting in a refinement of the COPC list. Step 3a includes a re-assessment of the risks to lower trophic level receptors (direct exposure) and an evaluation, for the subset of contaminants that are bioaccumulative, of the potential for risks to upper trophic level receptors (food chain transfer).

In surface soil, one PCB, aroclor-1254, was identified as posing a potential risk to lower trophic level receptors. In subsurface soil, three pesticides (4,4-DDD, 4,4-DDE, and 4,4-DDT) and one metal (lead) were identified as posing a potential risk to lower trophic level receptors. Potential risks to ecological receptors were not identified for exposure to groundwater.

Food chain modeling was conducted for detected constituents carried to Step 3 and identified as bioaccumulative in USEPA (2000b). Food chain modeling was initially conducted for the terrestrial receptors using maximum concentrations. If analytes posed a risk based on maximum concentrations, modeling was refined using a conservative estimate of the mean.

Receptors selected for the terrestrial evaluation include the meadow vole, short-tailed shrew, white-footed mouse, red fox, white-tailed deer, American robin, mourning dove, and red-tailed hawk. Risks to the upper trophic level receptors were evaluated by modeling exposure via the ingestion of constituents that have

accumulated in prey. Incidental ingestion of soil was also included when calculating exposure. Dietary items for which tissue concentrations were modeled included terrestrial plants, terrestrial invertebrates, and mammals. The uptake of chemicals from abiotic media into these food items was modeled based on conservative assumptions.

The results of the food chain modeling did not identify potential risks to ecological receptors based on exposure to surface soil. For subsurface soil, potentially significant risks to lower and upper trophic level receptors were identified based on exposure to lead and pesticides in subsurface soil. An ecological receptor survey was conducted to assess the presence of deep-dwelling earthworms, burrowing activity, and the likelihood of exposure to subsurface soil due to tree falls and root exposure. The survey identified a lack of deep-dwelling earthworms and limited burrowing activity. Based on those observations, the unlikelihood for excavation in the waste disposal area, and the relatively small area exposed by occasional tree falls, exposure to subsurface soils would be limited.

2.7 No Action Determination

Multiple phases of investigation and data evaluation at Site 15 concluded that inert waste remains in place; however, the impacts to soil and groundwater are minimal, occur in sporadic and isolated locations, and there are no unacceptable risks to human health or the environment for current and potential future use. The Navy and Marine Corps, with concurrence from USEPA Region 4 and NCDENR, conclude that NFA is warranted (Attachment A). The no action determination meets the statutory requirements of CERCLA and the regulatory requirements of the National Oil and Hazardous Substances Pollution Contingency Plan for protection of human health and the environment.

2.8 Community Participation

The Navy, MCIEAST-MCB CAMLEJ, USEPA, and NCDENR provide information regarding the environmental cleanup of sites at the Base to the public through the community relations program, which includes a Restoration Advisory Board, public meetings, the Administrative Record file for the site (<http://go.usa.gov/jZi>), and announcements published in local newspapers. Restoration Advisory Board meetings are held quarterly and open to the public to provide an information exchange among community members, the Navy, MCIEAST-MCB CAMLEJ, USEPA, and NCDENR.



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Acronyms and Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chemical of concern
COPC	chemical of potential concern
ERA	ecological risk assessment
ESI	Expanded Site Investigation
ESV	ecological screening value
FFA	Federal Facilities Agreement
ft bgs	feet below ground surface
HHRA	human health risk assessment
HHRS	human health risk screening
HI	hazard index
HQ	hazard quotient
IR	Installation Restoration
IRM	interim remedial measure
MCIEAST-MCB CAMLEJ	Marine Corps Installations East-Marine Corps Base Camp Lejeune
NADD	No Action Decision Document
Navy	Department of Navy
NC SSL	North Carolina Soil Screening Level
NCDENR	North Carolina Department of Environment and Natural Resources
NCGWQS	North Carolina Groundwater Quality Standards
NFA	No Further Action
NPL	National Priorities List
NRWQC	National Recommended Water Quality Criteria
PA/SI	Preliminary Assessment/Site Inspection
PCB	polychlorinated biphenyl
RSL	regional screening level
SLERA	screening-level ecological risk assessment
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
UCL	upper confidence limit
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

Attachment A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303-8960

March 26, 2012

NAVFAC Atlantic
Attn: Dave Cleland
NAVFAC Midlant Environmental RPM, Camp Lejeune
Marine Corps North Carolina IPT
6506 Hampton Blvd
Norfolk, VA 23508-1273

SUBJ: MCB Camp Lejeune
Draft Expanded Site Investigation
Site 15 – Former Montford Point Burn Dump

Dear Mr. Cleland:

The Environmental Protection Agency (EPA) has completed its review of the above subject document, dated March, 2012 and agrees with the documented recommendation of no further action. EPA acknowledges the findings of no unacceptable human health or ecological risk and also acknowledges that buried inert material is still present in this area. Therefore, this agreement of no further action is supported by the designated undeveloped land use. However, if there is a change in the current land use, additional sampling may be required and risk re-evaluated.

If there are any questions, I can be reached at (404) 562-8538.

Sincerely,

Gena

Townsend

Gena D. Townsend

Senior Project Manager

Digitally signed by Gena Townsend
DN: cn=Gena Townsend, o=Superfund
Division, Federal Facilities Branch,
ou=Environmental Protection Agency,
email=townsend.gena@epa.gov, c=US
Date: 2012.03.26 11:23:03 -04'00'

cc: Martha Morgan, NCDENR
Charity Rychak, MCB Camp Lejeune

Hockett, Daniel/CLT

From: Mcelveen, Randy [randy.mcelveen@ncdenr.gov]
Sent: Wednesday, March 28, 2012 1:14 PM
To: Hockett, Daniel/CLT
Cc: david.t.cleland@navy.mil; charity.rychak@usmc.mil; Henderson, Kimberly/VBO
Subject: RE: Site 15 Expanded Site Investigation

Daniel,

Did I send you a no comment email for the Draft ESI for Site 15? Dave Lilley has comments but I had no comments and concur with the NFA.

Not sure if I discussed anything or not. I remember reviewing it and sending it to D. Lilley, but don't recall if I sent you an email.

Thanks,

Randy McElveen, NC Superfund Section

From: Daniel.Hockett@CH2M.com [<mailto:Daniel.Hockett@CH2M.com>]
Sent: Tuesday, March 13, 2012 1:53 PM
To: Mcelveen, Randy
Cc: david.t.cleland@navy.mil; charity.rychak@usmc.mil; Kimberly.Henderson@CH2M.com
Subject: RE: Site 15 Expanded Site Investigation

Randy,

I posted the Site 15 data files for the 3 media in the Document Review folder. If you need additional information, please let us know.

Thanks,

Dan

Dan Hockett, P.G.
CH2M HILL
11301 Carmel Commons Blvd Ste 304
Charlotte, NC 28226
Direct - 704.543.3264
Fax - 704.544.4041

From: Mcelveen, Randy [<mailto:randy.mcelveen@ncdenr.gov>]
Sent: Monday, March 12, 2012 3:31 PM
To: Hockett, Daniel/CLT
Cc: Cleland, David T CIV NAVFAC MIDLANT, IPTNC; Camp Lejeune - Charity Rychak
Subject: RE: Site 15 Expanded Site Investigation

Daniel,

Could you please put the full suite of analytical results for site 15 on the Web Portal. Our Industrial hygienist needs all the analytical data and details in order to complete a proper review of the Risk Sections of the Report.

Thanks,

Randy McElveen, NC Superfund Section

From: Daniel.Hockett@CH2M.com [<mailto:Daniel.Hockett@CH2M.com>]
Sent: Monday, March 05, 2012 2:49 PM
To: david.t.cleland@navy.mil; charity.rychak@usmc.mil; Mcelveen, Randy; Townsend.Gena@epa.gov
Cc: Kimberly.Henderson@CH2M.com; Matt.Louth@CH2M.com; Chris.Bozzini@CH2M.com
Subject: Site 15 Expanded Site Investigation

Good Afternoon,

The Site 15 ESI has been posted to the Document Review folder on the Camp Lejeune website <http://lejeune.lantops-ir.org/Document%20Review/default.aspx>.

Hard copies and CDs will follow. If you have any questions, please let us know.

Thanks,

Dan Hockett, P.G.

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