

Marine Corps Base Camp Lejeune (MCB CamLej) Restoration Advisory Board Meeting Minutes

RAB Meeting: February 23, 2012

ATTENDEES: Charity Rychak/MCB CamLej
Nick Schultz/MCB CamLej
Bryan Beck/NAVFAC Mid-Atlantic
Gena Townsend/EPA Region 4
Randy McElveen/NCDENR
Laura Bader/RAB Co-Chair
Richard Mullins/RAB Member
Aimee Findlay/Court Reporter
Leonard McAdams/RAB Member

Steven Thompson/RAB Member
Michael Curtis/RAB Member
Thomas Mattison/ RAB Member
Brian Wheat/RAB Member
Casey Davis/RAB Member
Karen Sota/RAB Member
Matt Louth/CH2M HILL
Chris Bozzini/CH2M HILL
Kim Henderson/CH2M HILL
Sam O'Leary/MCCS

FROM: Kim Henderson/CH2M HILL

DATE: March 5, 2012

LOCATION

Coastal Carolina Community College, Business Technology Building, Room 102 in Jacksonville, North Carolina

MINUTES

I. Welcome and Introductions

Ms. Rychak began the meeting and reviewed the agenda. She introduced a new member, Casey Davis, the White Oak and New River Keeper.

II. Public Meeting for Site UXO-23, Non-Time Critical Removal Action

The Non-Time Critical Removal Action (NTCRA) topic was presented by Mr. Bozzini. A North Carolina Court Reporter recorded minutes on the public meeting that are submitted separately. A handout was made available with site background and information on the public comment period.

III. Installation Restoration Program Site 88 Update

Objective: The purpose of this agenda item was to review site background, provide conclusions of the treatability study, review remedial alternatives, and discuss path forward and schedule.

Overview: Mr. Bozzini reviewed the site background. Site 88 is the former dry cleaner where volatile organic compounds (VOCs) are present in soil and groundwater. A treatability study was conducted to help with evaluating potential remedial alternatives for the site. The study was conducted in three areas in 2 zones and the results were as follows:

- Zone 2, Area 1 consisted of in situ chemical oxidation (ISCO) to a depth of 50 feet and VOC reduction of 87% was achieved and the test was found to be effective. The RAB questioned and discussed how much substrate was injected and costs. The challenge with this technology is that contact is needed with the contamination to achieve reduction.
- Zone 2, Area 2 consisted of enhanced reductive dechlorination (ERD) to a depth of 100 feet and VOC reduction was not significant. The challenge with using this technology is that the dose needed is large based on the high concentrations and it was insufficient and an appropriate dose would be cost-prohibitive. Therefore, the test was found to not be effective.
- Zone 3 consisted of a downgradient biobarrier using ERD to a depth of 50 feet and trichloroethylene (PCE) reduction up to 97% was achieved and the test was found to be effective.

The treatability study results will be used to evaluate potential remedial alternatives to address the site contamination. The overall remedial action objectives for Site 88 are to:

- Restore groundwater quality to meet State and Federal drinking water standards
- Prevent human contact with soil in former soil mixing area
- Prevent human ingestion of water containing VOCs at concentrations above State and Federal drinking water standards
- Prevent exposure to VOCs in groundwater and vapor intrusion from VOCs in groundwater

Based on the size of the site, remedial alternatives are being evaluated in several zones (soil, source area groundwater, and 2 areas of downgradient groundwater). The alternatives evaluated for each zone are as follows.

- Zone 1 Soil: No Action; Land Use Controls (LUCs); Excavation
- Zone 1 Shallow Source Area Groundwater: No Action; Air Sparge with Soil Vapor Extraction (AS/SVE), Monitored Natural Attenuation (MNA), LUCs, and Vapor Intrusion Mitigation System (VIMS); ISCO, MNA, LUCs, and VIMS
- Zone 2 Deep High Concentration Groundwater: No Action; AS, MNA, LUCs, and VIMS; ISCO, MNA, LUCs, and VIMS
- Zone 3 Deep Low Concentration Groundwater: No Action; MNA and LUCs; Biobarrier and LUCs

The RAB discussed the biobarrier and how many points (approximately 12) and how long it will take to cleanup (a long time). Chris explained that there is uncertainty based on the high concentrations and low cleanup levels (going from levels of 100,000 to 0.7). A RAB member asked whether there is a single source. Chris responded that yes, the dry cleaner that used PCE followed by Varsol.

The Feasibility Study presenting the details is planned for submittal in spring 2012. This summer, the Team will identify the preferred alternative followed by a public meeting and Record of Decision.

IV. Installation Restoration Program Site 86 Update

Objective: The purpose of this agenda item was to provide a site overview, present treatability study approach and results, and provide path forward and schedule.

Overview: Mr. Bozzini presented a site overview. Site 86 is a 130 acre site located at Marine Corps Air Station (MCAS) New River where groundwater is impacted with low level VOCs, primarily trichloroethene (TCE) and degradation products. A treatability study is currently underway to evaluate potential remedial alternatives. The study was conducted in 2 zones, zone 1 in the Upper Castle Hayne Aquifer and zone 2 in the surficial aquifer.

In zone 1, ERD injections and extractions of lactate to promote biological breakdown of VOCs (provide food for natural bacteria) were conducted to achieve treatment over a large distribution area for a relatively low cost. The RAB questioned and discussed how much water is extracted and what is done with it. Chris responded that minimal water is extracted and reinjected with the lactate until the lactate reaches the wells. The RAB questioned whether the use of filters was evaluated. Chris indicated that carbon will remove VOCs. The RAB questioned how this area got contaminated and the best guess is degreasing/cleaning solutions transported by the drainage swale. The system has been running three to four months and preliminary results indicate 98% reduction in TCE and 69% removal in total VOCs.

In zone 2, slow release permanganate candles were installed to treat VOCs (180 feet long) using a new innovative technology that may be a long-term solution based on the time it lasts (months to years). The candles were installed three months ago and preliminary results indicate 81% reduction in VOCs.

Treatability study monitoring will be conducted again in May 2012 followed by a Feasibility Study this summer to evaluate potential remedial alternatives.

The RAB questioned and discussed the horizontal air sparge that was used and effective to treat a VOC plume in the distant field.

V. RAB Business

Ms. Rychak proposed the next RAB date for **Thursday, May 24, 2012** and requested topics for the next meeting. Topic suggestions may be presented to Ms. Rychak after the meeting. The RAB members complained about the cost of the certified RAB notification letter for this meeting. Ms. Rychak apologized for the mistake and indicated that the letter was not intended to be sent as certified.

The RAB questioned what colleges and universities we are working with and whether local colleges or universities could be contacted and involved in the process as an academic opportunity. The Base have recently worked with Colorado State, Washington State, Clarkson University, and with universities as part of the Range Environmental Vulnerability Assessment (REVA) program, and Environmental Security Technology

Certification Program (ESTCP) projects. Charity indicated that she will look into opportunities with local colleges.

Charity informed the RAB of the Base's Earth Day Fair on April 18th at Marston Pavilion for school students and requested volunteers for informative booths. Set-up begins at 0800 and runs through 1500. Charity will also send out information on Earth Week activities.

Site UXO-23 D-9 Skeet Range Engineering Evaluation/Cost Analysis

Marine Corps Base Camp Lejeune, North Carolina
Public Meeting: February 23, 2012



Background

Site Unexploded Ordnance (UXO) 23, D-9 Skeet Range, is located west of Holcomb Boulevard and north of Parachute Tower Road and encompasses approximately 187 acres. The D-9 Skeet Range began operation in 1953 and was used for recreational shooting until it was closed in July 2011.

Investigations conducted in 2009 through 2011 identified potential unacceptable risks to human health and the environment posed by exposure to lead and polycyclic aromatic hydrocarbons (PAHs) in surface soil (0 to 1 feet below ground surface) in the vicinity of the shot fall zone. A Non-Time-Critical Removal Action (NTCRA) was recommended to remove the source of contamination at the former Skeet Range. An Engineering Evaluation/Cost Analysis (EE/CA) was prepared to evaluate alternatives for the NTCRA.



Site Map with NTCRA Area in Red

Removal Action Objectives

The objectives of the removal action are to mitigate potential unacceptable risks to human health and the environment posed by exposure to lead- and PAH-impacted surface soil and to reduce the potential for contaminant migration from soil to groundwater and surface water.

Removal Action Alternatives

Five removal action alternatives were evaluated with respect to effectiveness, implementability, and cost:

1. No Action (a baseline for comparison)
2. Excavation and Offsite Disposal
3. Excavation with Particle Separation and Backfill
4. In Situ Soil Stabilization with Excavation and Offsite Disposal
5. In Situ Soil Stabilization

Recommended Alternative

The recommended alternative is Alternative 4 in situ stabilization followed by excavation and offsite disposal. A stabilizing reagent would be mixed into the top foot of soil. Approximately 26,870 cubic yards of stabilized material would then be excavated, managed as non-hazardous waste, and transported offsite for disposal. Confirmation samples would be collected from the side walls and base of the excavation to verify that the contamination was removed.

This removal action will protect human health and the environment by permanently removing impacted soil from the site, is readily implementable through proven technologies, and is cost-effective.

Public Comment Information

The EE/CA and other background documentation are available for public review in the Administrative Record and are located on the internet at <http://go.usa.gov/jZi>. The website and a hard copy version of the EE/CA are also available at:

Onslow County Public Library
58 Doris Avenue East
Jacksonville, NC 28540
(910) 455-7350

Please provide written comments on the Site UXO-23 D-9 Skeet Range Soil Removal EE/CA on or before (postmark by) March 12, 2012 to the following address:

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