



4/11/01 - 3052  
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April 11, 2001

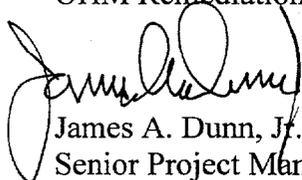
Mr. Kirk Stevens  
Atlantic Division Code EV23KS  
Naval Facilities Engineering Command  
6506 Hampton Blvd.  
Norfolk, VA 23508

Re: Interim Remedial Action Closeout Report  
DO 100- Remediation of PAH Contaminated Soil O.U. 12 Site 3  
Contract N62470-93-D-3032,  
MCB Camp Lejeune, NC

Dear Mr. Stevens:

In accordance with Gena Townsend's direction, enclosed herewith please find a revised copy of the title page of The Final Interim Remedial Action Closeout Report for Remediation of PAH Contaminated Soils at Site 3, O.U. 12, MCB Camp Lejeune, NC. Please destroy the previous title page and replace it with the enclosed.

Very truly yours,  
OHM Remediation Services Corp.

  
James A. Dunn, Jr., P.E.  
Senior Project Manager

Enclosure

Pc:	Rick Raines-IRD/EMD	Roland Moreau-OHM	Randy Smith-OHM
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	Dave Leadenham-OHM	Rich Bonelli-Baker	Job 918319

**FINAL  
INTERIM REMEDIAL ACTION CLOSEOUT REPORT  
OPERABLE UNIT NO. 12 (SITE 3)  
REMEDICATION OF PAH CONTAMINATED SOIL  
MCB CAMP LEJEUNE, NORTH CAROLINA**

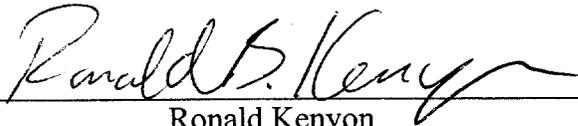
Prepared for:

**Department of the Navy**  
Contract No. N62470-93-D-3032  
Task Order 0100

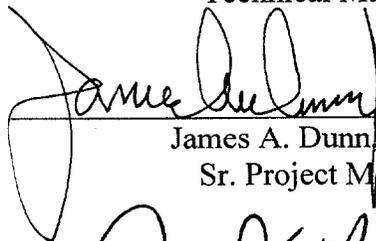
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March 2001  
OHM Project No. 918319

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- A: Cost and Performance Summary
- B: QC Reports
- C: Contractor Production Reports

### 3.0 CONSTRUCTION ACTIVITIES

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Table 3-2 summarizes the construction activities. See Appendix I for photographs and Appendix D for daily logs. All soil was removed using a tracked excavator. Wheeled loaders then moved the soil directly to a staging area, where the soil was stockpiled (Figure 3). The soil from the top 3 feet of the excavation was isolated from the deeper soils. Samples were collected from each stockpile and analyzed. The stockpiles were covered to prevent dusting while the results of the analyses were pending. When the analyses showed the soil could be accepted at the Base Landfill, it was manifested and transported. The basis of acceptance at the site landfill is presented in Table 3-1. Construction debris was also taken to this landfill but no manifests were required. However, all loads of debris were weighed. Appendix F contains the manifests and weigh tickets for the soils, and a log of all construction debris.

After demobilization from the project, review of the disposal analysis results revealed that some excavated soils in excess of the project determined disposal criteria were disposed of at the Base landfill. It was subsequently determined by QC review that benzo(a)anthracene, a COC identified for removal criteria, was thought to be a F034/ disposal compound of concern by site operations, when benzo(a)pyrene was the applicable F034/ disposal compound of concern. As such, 5 stockpiles exceeding the benzo(a)pyrene criteria, and one stockpile each, just over the benzo(a)pyrene and dibenzo(a,h) anthracene criteria, were transported to the landfill.

IT's review of the project disposal activities has concluded that although project disposal criteria were exceeded, no applicable regulatory criteria were exceeded. Support for this determination includes the following:

- Although the listed waste F034 constituents were selected for disposal criteria, risk based criteria were selected as the action levels for those constituents, as opposed to traditional RCRA standards
- The excavated soils were not identified as a F034 waste by the generator, and were not transported using manifests
- The disposed soils met the applicable Land Disposal Restriction (LDR) for a F034 waste, even though not formally treated as that waste type

Additionally, IT performed a preliminary risk calculation in-house, using the concentrations presented in Table 6, to verify the disposed soils presented no concern. Accepted EPA protocols were utilized for the exercise. An exposure scenario involving a typical landfill

worker, involved in the spreading of daily cover or light earthmoving activities was utilized. The exposure risk value was calculated to be  $9.50 \times 10^{-7}$ . As a second check, OHM requested EPA Region IV to perform a risk calculation, which also yielded a risk value of  $10^{-7}$ .

Stockpiled overburden soils that the analyses showed to have contaminant levels below remedial goals were returned to the excavation as fill material. In addition, fill was also brought in from a Base borrow pit and a bio-cell (see Section 5.0). A total of 40 truckloads of fill were received from the bio-cell and 174 loads from the borrow pit. The material was compacted using the tracked excavator. The area was then fertilized and seeded.

Routine monitoring of ambient air was performed during the construction. This included volatile organics using photo-ionization instrumentation and respirable dust using a miniram instrument. Dusting was never a problem at the site, and particulates were detected on only a single occasion. Sporadic and transitory photo-ionization readings were detected at low levels only. All detection's were below action levels, and no upgrade in protective equipment was required. Air monitoring results are presented in Appendix G.

**Table 3-1**  
**Criteria for Acceptance at Base Landfill**  
**MCB Camp Lejeune**

Parameter	Limit of Acceptance
TCLP	Must be non-hazardous
F034 Constituents	ug/Kg
Naphthalene	141,000,000
Benzo(k) fluoranthene	78,000
Benzo (a) pyrene	780
Dibenzo(a,h)anthracene	780
Indeno(1,2,3-c,d) pyrene	7,800
2-Methylphenol	44,000
Arsenic	3,800
Chromium (VI)	6,100,000

**Table 3-2  
Summary of Construction Activities  
MCB Camp Lejeune**

Dates	Activity
17 June 2000	Site Mobilization
18-20 June 2000	Break existing concrete and transport to base landfill. Begin excavation of 3-ft top layer of soil.
21 June 2000	Continue excavating 3-ft top layer of soil. Excavate test trench to 9-ft depth.
22-24 June 2000	Continue soil excavation of top layer and of deeper soils. Some top-layer soils are contaminated and are transported to on-site landfill.
25 June 2000	Continue soil excavation. Exposed section of monitor well breaks at joint. Exposed portion of casing is covered to prevent contamination.
26 June 2000	Continued excavation and expanded limits based on visual evidence of contamination. Uncovered buried concrete slab.
27-28 June 2000	Continued excavation. Broke up concrete slab and disposed as contaminated. Slab surface appeared contaminated with sludge.
29 June 2000	Uncovered an additional pad and excavate.
12-14 July 2000	Begin backfilling excavation with clean, stockpiled soil.
15-19 July 2000	Receive clean backfill and grade site.
21-25 July 2000	Continue grading and remove debris.
7-9 August 2000	Transport contaminated soils to base landfill.
14-15 August 2000	Place additional fill and regrade site. Abandon shallow well 03-MW-2.
16 August 2000	Seed and fertilize disturbed area. Install new monitor well.
17 August 2000	Abandon old monitor well 03-MW-2.
19 September 2000	Acceptance of Site by Base via issuance of BOD