

04.01-02/09/98-02243

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT

February 9, 1998

JAMES B. HUNT JR.  
GOVERNOR

WAYNE McDEVITT  
SECRETARY

WILLIAM L. MEYER  
DIRECTOR

Commander, Atlantic Division  
Naval Facilities Engineering Command  
Code 1823

Attention: MCB Camp Lejeune, RPM  
Ms. Katherine Landman  
Norfolk, Virginia 23511-6287

Commanding General  
Attention: AC/S, EMD/IRD  
Marine Corps Base  
PSC Box 20004  
Camp Lejeune, NC 28542-0004

RE: Comments on the Documents Pertaining to  
Operable Unit No. 10, Site 35 - Camp Geiger Area Fuel Farm  
Marine Corps Base, Camp Lejeune, North Carolina

Dear Ms. Landman:

The following documents for OU10, Site 35 have been received and reviewed  
by the North Carolina Superfund Section:

- Draft IAS Treatability Study Report (Attachment 1)
- Draft Supplemental Groundwater Investigation Report (Attachment 2)
- Draft Feasibility Report (Attachment 3)
- Draft Proposed Remedial Action Plan (Attachment 4)

The comments are attached.

Ms. Katherine Landman  
February 9, 1998  
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Please call me at (919) 733-2801, extension 278 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "David J. Lown". The signature is fluid and cursive, with the first name "David" being the most prominent.

David J. Lown, LG, PE  
Geological Engineer  
Superfund Section

Attachments

cc: Gena Townsend, US EPA Region IV  
Neal Paul, MCB Camp Lejeune  
Diane Rossi, DENR - Wilmington Regional Office

## ATTACHMENT 1

North Carolina Superfund Comments  
Draft IAS Treatability Study Report  
OU 10, Site 35 - Camp Geiger Area Fuel Farm  
Marine Corps Base, Camp Lejeune, North Carolina

It was suggested that BTEX contamination in Plume B and C is being naturally attenuated by the 10-foot thick peat bog located along the banks of Brinson Creek. Lorah, Olsen and Smith (1997, Natural Attenuation of Chlorinated Hydrocarbons in a Freshwater Wetland, *in*, Alleman, B.C. and Leeson, A., Symposium Chairs, *Papers from the Fourth International, In Situ and On-Site Bioremediation: Volume 3*, Battelle Press, p. 207 - 212) describe a similar situation in Maryland, where chlorinated hydrocarbons are being naturally attenuated by a peat bed in a freshwater wetland.

## ATTACHMENT 2

North Carolina Superfund Comments  
Supplemental Groundwater Investigation Report  
Operable Unit No. 10, Site 35-Camp Geiger Area Fuel Farm  
Marine Corps Base, Camp Lejeune, North Carolina

1. Page 2-4. **Temporary Monitoring Well Installation.** Temporary wells are reported to have been abandoned by being backfilled with native material. All wells must be abandoned according to 15A NCAC 02C.0113 **ABANDONMENT OF WELLS.**
2. Page 2-8, *SAOC-Activity property (between Fifth and Ninth Street)*, Last Paragraph. The plume discovered in the vicinity of Building TC773 is being investigated in association with another Site. The text states that a site investigation for OU16, Site 83 will be completed. This should refer to Site 93.
3. Page 4-3, Section 4.2.2.2, Third Bullet. Elevated levels of iron and manganese are reported to have been found in potable water supply wells. What levels were found?
4. Table 5-1. Please note that Koc and Henry's Law Constants numbers are different from numbers used by the State to calculate risk assessment numbers in the North Carolina Risk Analysis Framework. The significance of the differences is unknown; however, in future discussions the values listed in Table 5-1 may require additional justification.
5. Comments on the Baseline Human Health Risk Assessment were submitted previously (7/17/97).

## ATTACHMENT 3

North Carolina Superfund Section Comments  
Draft Feasibility Study  
OU 10, Site 35 - Camp Geiger Area Fuel Farm  
Marine Corps Base, Camp Lejeune, North Carolina

**General comment:** As outlined in OSWER Directive 9200.4-17 on Monitored Natural Attenuation, before selecting natural attenuation as an Remedial Action Alternative, an evaluation of the effectiveness of natural attenuation is necessary. Rates of natural attenuation should be estimated and compared to estimated rates of active remediation.

### Specific Comments

6. Page 1-20, Last Bullet, First paragraph: In addition to the revision of the Base Master Plan, institutional controls would include the following:
  - Annual certification that the restrictions in the BMP have remained unchanged;
  - Deed recordation as required by N.C.G.S. 130A-310.8(a);
  - Modification of the RCRA Permit Modification under 40 CFR 270.41, which is incorporated by reference in 15A NCAC 13A.0113, imposing the site restriction;
  - And, in the event that the property is transferred out of the United States Marines, MCB Camp Lejeune shall, prior to the transfer, record at the Onslow County register of deeds' office, the site restrictions in the form of restrictive covenants.
7. Page 1-21, Paragraph 3. Aquifer use restrictions are necessary for RAA 3. The requirements outlined in Comment 1 would also apply here.
8. Page 1-22, Paragraph 4. Institutional controls are proposed for RAA 4. See comment 1.
9. Page 1-23, Paragraph 5. Institutional controls are proposed for RAA 5. See comment 1.
10. Page 1-30, First Bullet. The edge of the plume is described as extending to Building TC773. At this location the plume merges with the plume from Site 93. This should be clarified in the text.
11. Page 2-1 and Table 2-2. In addition to the North Carolina groundwater standards (15A NCAC 2L), the following chemical-specific ARARs should be considered :

**TABLE 1**  
**NORTH CAROLINA POTENTIAL CHEMICAL-SPECIFIC ARARS, CRITERIA, AND GUIDANCE**  
**OU10, SITE 35 DRAFT FEASIBILITY STUDY**  
**MCB CAMP LEJEUNE**

<b>Potential State ARAR</b>	<b>Citation</b>	<b>Comment</b>
NC Drinking Water Act	130A NCAC 311-327	Regulates water systems within the state that supply drinking water that may affect the public health.
NC Water Quality Standards	15A NCAC 2B .0100-.0400	Establishes a series of classifications and water quality standards for surface waters.
NC Air Pollution Control Regulations	15A NCAC 2D, 2H .0600, 2Q	Regulates ambient air quality and establishes air quality standards for hazardous air pollutants.
NC Hazardous Waste Management Rules	15A NCAC 13A .0009 & .0012	Establishes standards for hazardous waste that is excavated and stored or treated as part of Remedial Action.

12. Page 2-5 and Table 2-3. The following potential location-specific ARARs should be considered:

**TABLE 2**  
**NORTH CAROLINA POTENTIAL LOCATION-SPECIFIC ARARS, CRITERIA, AND GUIDANCE**  
**OU10, SITE 35 DRAFT FEASIBILITY STUDY**  
**MCB CAMP LEJEUNE**

<b>Potential State ARAR</b>	<b>Citation</b>	<b>Comment</b>
NC Hazardous Waste Management Rules	15A NCAC 13A .0009 & .0012	Location requirements and land disposal restrictions for hazardous waste excavated, stored, and treated onsite.
NC Solid Waste Management Rules	15A NCAC 13B .1600	Siting requirements for solid waste landfill facilities

Potential State ARAR	Citation	Comment
NC Recordation of Inactive Hazardous Substance or Waste Disposal Sites Statute	N.C.G.S. 130A-310.8	State requirement for recordation of inactive hazardous sites
NC Coastal Management	15A NCAC 7H	State guidelines for areas of environmental concern

13. Page 2-5 and Table 2 4, Action-specific ARARs. The following potential Action-specific ARARs should be added:

**TABLE 3**  
**NORTH CAROLINA POTENTIAL ACTION-SPECIFIC ARARs, CRITERIA, AND GUIDANCE**  
**OU10, SITE 35 DRAFT FEASIBILITY STUDY**  
**MCB CAMP LEJEUNE**

Potential State ARAR	Citation	Comment
NC Groundwater Corrective Action	15A NCAC 2L .0106	Regulations for cleanup of contaminated groundwater
NC 15A NCAC 2L Implementation Guidance	Division of Water Quality Guidance Document	Explains implementation of corrective action at groundwater contamination sites.
NC Well Construction Standards	15A NCAC 2C .0100	Construction and abandonment requirements for water wells.
NC Injection well construction standards	15A NCAC 2C .0200	Construction requirements for injection wells.
NC Water Quality Discharge Requirements	15A NCAC 2H .0100 & .0200	Waste water requirements for discharges and infiltration galleries.
NC Sedimentation Control Rules	15A NCAC 2H .1000	Establishes requirements for stormwater management
NC Hazardous Waste Management Rules	15A NCAC 13A	Design and treatment requirements for hazardous waste TSDs.

Potential State ARAR	Citation	Comment
NC Solid Waste Management Rules	15A NCAC 13B	Design and monitoring requirements for solid waste disposal sites
NC Air Pollution Control Requirements	15A NCAC 2D, 2H .0600, 2Q	Regulates air quality and establishes emissions standards.
EPA Draft Interim Final OSWER Monitored Natural Attenuation Policy	OSWER Directive 9200.4-17	EPA guidance document for implementation of Monitored Natural Attenuation Remedy

14. Page 4-2, Site Controls. See comment 1.
15. Page 5-3, State Acceptance. State acceptance will be indicated by a letter of concurrence that will be included in the ROD.
16. Page 5-6, Third Paragraph. Long-term monitoring should include surface-water monitoring.
17. Page 5-7, *Implementability*. See comment 1.
18. Page 5-8, First Bullet. Depending on the results of geochemical sampling, a microcosm study may not be needed. See OSWER Directive 9200.4-12, Section Demonstrating the Efficacy of Natural Attenuation through Site Characterization.
19. Page 5-9. *Compliance With ARARs*. Natural attenuation remedial plans must comply with North Carolina regulation 15A NCAC 2L.0106 (I).
20. Page 5-9. *Long-Term Effectiveness and Permanence*. See comment 1.
21. Page 5-10. The last sentence contains a typo; "...natural attenuation process that will [reduce(?)] toxicity..."
22. Page 5-14. Long-term management activities should include surface water monitoring in Brinson Creek.

## ATTACHMENT 4

North Carolina Superfund Section Comments  
Draft Proposed Remedial Action Plan  
OU 10, Site 35 - Camp Geiger Area Fuel Farm  
Marine Corps Base, Camp Lejeune, North Carolina

23. Page 11, **RAA3: Natural Attenuation**. The state criteria for applying natural attenuation to groundwater is outlined in 15A NCAC 2L.0106 (l) and expounded on in the 2L implementation guidance. EPA guidance can be found in OSWER Directive 9200.4-17.

24. Page 15, **Long-term Effectiveness and Permanence**. As indicated in OSWER Directive 9200.4-17, the rate of natural attenuation must be evaluated and compared to the estimated rates of active remediation.

The impact of active remediation, particularly RAA 6, on natural attenuation should also be considered and evaluated.

25. Page 15, Next to last sentence. Clogging may also be a problem with RAA 5.

26. Page 17, **THE PREFERRED ALTERNATIVE**. As outline in OSWER Directive 9200.4-17, Section Contingency Remedies, in addition to natural attenuation, a contingency remedy should be discussed as a backup in the event natural attenuation does not work.

27. Page 17, **THE PREFERRED ALTERNATIVE**, Second Paragraph. The text refers to Ballard Creek; shouldn't this be Brinson Creek?

28. Table 7. Where is footnote "a"?