0491

MEMORANDUM 21 July 1997

To: David McConaughy, Navy Environmental Health Center
From: Kate Landman, LANTDIV Code 18

Subj: ATSDR Public Health Assessment, MCB Camp Lejeune

Encl: (1) ATSDR Public Health Assessment, MCB Camp Lejeune, Draft Final Version
(2) Informal comments to ATSDR by K. Landman, LANTDIV Code 18

1. Per my conversation today with members of your staff (Mary Ann Simmons and Harry Etheridge), enclosed please find a copy of a draft version of ATSDR's Final Health Assessment Report for MCB Camp Lejeune for your review and comment. Ms. Carole Hossum of ATSDR provided this to me and to staff at Camp Lejeune for an "informal" review prior to formal issuance of the report. The Draft version of this report was issued back in 1994. Because it had been so long, and there were many significant changes to the document, she provided us with a copy for review at this point.

2. Also enclosed is a copy of my "informal" comments on the document, as provided to Ms. Hossum. I have discussed these comments with Ms. Hossum on the phone, and she has indicated to me that substantial changes will be made to the document regarding most issues that I mentioned in my comments, with the exception of the issue regarding Northeast Creek fish exposure.

3. Because Ms. Hossum requested only an informal review from a limited list of people, please provide any comments or concerns you may have about this document to me (informally), and I will forward to ATSDR with additional specific comments of my own that I am still generating. Please call me at 322-4818 if you have any questions.

Katherine Landman
LANTDIV Code 18232

CLW

0000002833

ATSDR Public Health Assessment
Draft Final Release dated 6 June 1997
LANTDIV Comments

K. Landman
8 July 1997

General Comments

1. Updated Records - ATSDR has asked for updated records for particular sites where ATSDR did not have a complete set of documents from the Administrative Record. In an attempt to prevent this type of problem, ATSDR is now provided with a courtesy copy of all Final documents prepared under the MCB Camp Lejeune CERCLA program as they are issued. Specific requests for information included items documented in these reports, although ATSDR should already have this information. In addition, there are several instances where incorrect or incomplete information has been reported, presumably because the information was drawn from old reports such as Draft versions which have since been superseded by Final versions or Site Inspection reports or for which full Remedial Investigations have since been conducted. These instances may include data which has to date only been reported in Draft reports, so ATSDR may not have a copy of this information yet. These instances are also noted in the Specific Comments section, with references.

   For information purposes, and to ensure that references used cite the most up-to-date document, a list of the latest documents pertaining to the MCB Camp Lejeune IR program which appear to be of interest to ATSDR is included as Attachment 1. This list is not an all-inclusive list of all documents in the Administrative Record; however, the documents listed appear to be the key documents needed in support of this report. ATSDR can examine these documents at the Onslow County Information Repository, MCB Camp Lejeune EMD or LANTDIV offices, or additional copies can be requested from LANTDIV. It is suggested that ATSDR use this list to review the current list of references presented in the document to determine if up-to-date versions should be referenced instead. It is also suggested that ATSDR update the list of references in the report to identify what version a referenced document was (i.e. Draft or Final).

2. Current list of RODs - LANTDIV is concerned that ATSDR may not have up-to-date information concerning sites for which Records of Decisions have been prepared and signed. For your reference, Attachment 2 presents a list of all Interim and Final RODs for MCB Camp Lejeune.

3. Groundwater Contamination - LANTDIV is concerned that ATSDR may not be aware of the extensive efforts that MCB Camp Lejeune is taking to ensure that contamination does not reach potable supply wells. A variety of mechanisms support this effort. They include the Long-Term Monitoring (LTM) program, implementation of institutional controls via the base Master Plan, the base potable supply well monitoring program, the Basewide Remediation Assessment Groundwater Study

(BRAGS), and the Environmental GIS system. Each of these is discussed briefly below:

a) *Long-Term Monitoring (LTM) Program* - For all sites for which investigations have been completed (i.e. Final ROD signed) with groundwater contamination remaining on site, a long-term groundwater monitoring program has been established. These programs involve quarterly or semi-annual sampling of sites for contaminants to track the plume movement and to identify natural attenuation (through a variety of mechanisms, including biodegradation, dispersion, and dilution) of contaminants. Results from these programs provide early warning of a potential threat to a receptor (such as a potable supply well or surface water body) so that additional measures may be taken (these may include any number of measures such as implementation of active remediation, closure of a potable supply well, or addition of monitoring points). LTM is also implemented as part of active remediation systems. LTM at active remediation sites serves two purposes: (1) to monitor site conditions similar to LTM at sites without active remediation systems, and (2) to assess effectiveness of the active remediation system and provide data to implement system enhancements. Results from LTM are provided to the EPA and State of North Carolina after each sampling round, including a detailed evaluation of site conditions and recommendations for improvement at least annually, and are further evaluated every 5 years as part of the CERCLA-mandated 5-year review process.

b) *Institutional Controls* - At sites where contaminants are left on site, either because the remediation effort will require a long period of operation & maintenance (O&M) to treat the entire problem (such as with a groundwater pump and treat system), ongoing LTM (see above), or because removal of site contaminants is infeasible or impractical from an engineering standpoint (such as Site 41, where chemical agents may have been buried), the Final ROD may specify institutional controls. These controls are implemented via inclusion in the base Master Plan. They may include restrictions against future construction at the site and/or future use of groundwater. These restrictions will remain in effect permanently, or until such time as it is documented that site contaminants have reached a level low enough so that they are no longer a concern to human health or the environment. Should the property ever be transferred out of Federal ownership, deed restrictions would be implemented to meet the same requirements. We are still working out details of implementing such deed restrictions with the State of North Carolina due to specific restrictions in North Carolina law. However, this issue is not of immediate concern because MCB Camp Lejeune is not a BRAC base, and it is highly unlikely that any such property transfer would occur within the foreseeable future.

c) *Base Potable Supply Well Monitoring Program* - The base has initiated an annual monitoring program of all active supply wells. The purpose is to detect any contaminants that may be found in potable supply wells to prevent accidental exposure. Reports are submitted to NCDEHNR for review. Details of this program may be obtained directly from the activity EMD office.

CLW

d) *Basewide Remediation Assessment Groundwater Study(BRAGS)* - this is a three-dimensional basewide regional groundwater model that has been developed using extensive data collected in the IR and UST programs at Camp Lejeune, in conjunction with regional data compiled by the USGS. It is currently in Draft Final form, with the Final due out in fall of 1997. The primary purpose of developing the model was to determine if active or planned groundwater withdrawal from IR and UST groundwater treatment systems along with potable supply wells at Camp Lejeune would have any significant impact on the regional aquifer. In addition, the model has been used as the basis for site-specific modeling projects that have been used to model contaminant fate and transport, project future plume movement, and place extraction wells for treatment systems. The site-specific modeling has already been used for sites 73 and 82. Both the basewide model and the site-specific models were constructed using MODFLOW (a finite-difference numerical flow model).

e) *Environmental GIS System* - The base has initiated the development of an environmental Geographic Information System (GIS) to be incorporated into the overall GIS system for the base. This basewide GIS has been developed in ArcView and is a major source of information for land use planning and facilities maintenance (buildings, roads, utilities, construction projects, etc.). Portions of the Environmental GIS already exist, showing such areas as critical wildlife habitats, forestry classifications, wetland areas, and IR sites. To augment this, the base has compiled historical data from all IR and UST investigation monitoring wells, as well as base potable supply wells. This information not only includes well location, but current well status (e.g. active or abandoned), sampling history and boring log data. The GIS format facilitates easy ad-hoc queries of the database to answer questions from regulators and base personnel and to assist in overall management of the environmental program, as well as prepare site-specific summaries for reporting purposes. These enhancements to the environmental GIS use an EDMS database as an extension of the ArcView format and are currently in the final stages of development. Installation of the primary electronic deliverable is currently scheduled for 14 July 1997. Provisions have been included for continued update of the database as contractors and base personnel perform actions that impact the data (installation of new wells, well abandonment, future sampling). Future plans include development of an easy-to-use transportable package using ArcView that can be distributed to interested parties, including remediation contractors and regulators.

4. Suspected Fish and Shellfish Contamination in Northeast Creek and New River - LANTDIV is concerned that the ATSDR evaluation conclusion that fish and shellfish in Northeast Creek and the New River present a potential public health hazard due to contamination from IR sites adjacent to the water bodies may not be based on current data. The assessment by ATSDR appears to be based on preliminary data concerning Sites 7, 16, and 80 along Northeast Creek. The primary justification appears to be based on the fact that fish and shellfish sampling from Northeast Creek was not performed at any of these sites. Remedial investigations are now complete at all three

CLW

of these sites. While it is true that fish and samples from Northeast Creek were not collected in any of these investigations, they were deemed unnecessary due to lack of any significant contamination in any other site media. The final ROD has been signed for Site 16 and prepared for Sites 7 & 80 (currently in the signature process - signature anticipated in July). The RODs for all 3 sites conclude that current site conditions are protective of human health and the environment and specified no further action required. The following summary provides additional site-specific information:

a) *Site 7* - Surface water, sediment, and benthic macroinvertibrate sampling was performed in both on-site tributaries to Northeast Creek and in Northeast Creek itself as part of a detailed ecological investigation. Fish sampling from the tributaries was attempted, but sample collection efforts failed to produce any fish for analysis. Results of the ecological study indicated that one potentially site-related contaminant (lead) did slightly exceed surface water and sediment screening values. However, the species density and diversity study for the benthic macroinvertebrates showed results comparable to off-site reference stations, such that impact on the benthic community appears negligible. Due to the lack of significant contamination in any media, the Final ROD (awaiting signature) concludes that current site conditions are protective of human health and the environment and specifies that no further action at this site is warranted.

b) *Site 16* - This site is about 4 acres in size, with the study area located about 4000 ft northwest of Northeast Creek. The site slopes slightly towards the creek, with a small break in the trees at corner of the study area leading directly to the water. Surface water and sediment samples were taken from Northeast Creek as part of the Remedial Investigation. Very low levels of volatiles were detected in one surface water sample, significantly downstream of the site, but in no other sample. Sediment sampling showed no significant detections of any contaminant except for one sample which exhibited levels of silver slightly above the NOAA ER,M (Effects Range, Low) screening criteria, but well below the ER,M (Effects Range - Median). Due to the lack of significant contamination in any media, the Final ROD (signed in 1996) concluded that current site conditions are protective of human health and the environment and specified that no further action at this site is warranted.

c) *Site 80* - This is a relatively small (under 1 acre), essentially flat site and is not immediately proximate to Northeast Creek. Wooded areas and a portion of a golf course separate the site from the nearest bank of Northeast Creek, about ¼ mile to the north. A time-critical removal action (TCRA) to remove pesticide contaminated soil was completed in 1996. Surface water and sediment sampling was performed at Site 80 in an on-site drainage ditch during the 1991 Site Inspection. Although low levels of some petroleum-type volatiles were found in the surface water, they were probably directly related to recent use of the washpad, and no contaminants were detected in the sediment. No surface water or sediment samples were taken during the 1994 Remedial Investigation since the ditch was dry and the previous investigation had not indicated a sediment problem. The

CLW

Final ROD (awaiting signature) was prepared following completion of the TCRA. Due to the lack of any significant contamination remaining on site following the TCRA, the final ROD concludes that current site conditions are protective of human health and the environment and specifies that no further action is warranted at this site.

5. Physical Hazards at Site 43 - LANTDIV is concerned that ATSDR may have used incorrect information in the evaluation of potential public health hazards at Site 43. The report indicates that no public health hazard exists at Site 43 because a fence was installed in 1995 which prohibits access to the site. This is incorrect. There is no fence at Site 43. In 1995, a Time-Critical Removal Action (TCRA) was performed at Site 43 to remove all surficial metallic debris. This included a variety of items found at the site, including empty paint cans and metal drums, a tracked vehicle (tank) carcass, and large broken chunks of steel-reinforced concrete. The Remedial Investigation has now been completed at this site. No significant contamination was found in any site media, and the site is proposed for no further action. A Final ROD has not been prepared for this site yet, because other sites in the operable unit (OU6) required further investigation. Since no further action is necessary, it was determined to be most efficient to wait for all sites in the OU to be ready for ROD rather than go through the time and expense to have a separate ROD prepared and signed. A Final ROD for OU6 is expected in Fall 1997.

CLW

RESPONSE TO ATSDR QUESTIONS
MCB CAMP LEJEUNE
PUBLIC HEALTH ASSESSMENT
Draft Final Version dated 6 June 1997

Appendix B-2, Summary of Site Evaluations

1. OU6, Site 44, Jones Street Dump
It is true that a portion of this site is fenced, restricting access to the site from the adjacent residential area. However, no significant contamination was detected in any media at Site 44, with one exception. Levels of VOCs (chlorinated solvents) exceeding screening criteria were detected in surface water, but not in sediment. In addition, VOCs were detected in one groundwater sample taken from a temporary monitoring well located in a wetland area immediately adjacent to the creek. This groundwater contamination appears to be directly related to contaminants found in Edwards Creek, rather than from any source at Site 44. There were no other detections of VOCs at Site 44, and additional investigation of the creek showed that contaminant levels increased upstream of Site 44, indicating an upstream source. Two new sites were later identified near the headwaters of Edwards Creek showing the same types of contaminants as found in the creek (OU16, Sites 89 and 93). These sites are currently being investigated (major phase of field work was just completed this summer), and results confirm that the source of contamination in Edwards Creek is OU16. Site 44 is now proposed for no further action, and problems in Edwards Creek will be addressed by the remedy for OU16. See items 6 & 7 below. Complete results of the Site 44 RI can be found in the Final RI Report for OU6, Site 44, dated August 1996.

2. OU6, Site 86, MCS Tank Area AS 419-AS422
This site was the location of a former collection of above-ground fuel oil tanks later used as waste oil tanks. The tanks were emptied in 1988 and removed in 1992. An open grassy area now exists where the tanks were located. Primary concern is groundwater contamination (chlorinated solvents) which has been found under the site. No potable supply wells are in the vicinity. The site is currently in the FS stage. Complete results of the Site 86 RI can be found in the Final RI Report for OU6, Site 86, dated August 1996.

3. OU9, Site 65, Engineer Area Dump
This site reportedly consisted of two disposal areas operated from before 1958 until 1972: a battery acid disposal area and a liquids disposal area. The liquids disposal area reportedly received petroleum, oil, and lubricant products, and also was used to burn construction debris. The site contains two small ponds and is immediately adjacent to Courthouse Bay. Soil (including soil borings and test pits), groundwater, surface water, sediment, and ecological samples (fish and benthic macroinvertibrates) were collected. The overall conclusion of the Site 65 RI was that there have been no releases of hazardous substances from the waste disposal areas that results in a risk to human health or the environment. This site is proposed for no further action. The ROD is waiting for investigation work to be completed at Site 73, also a part of OU9. Complete results of the Site 65 RI can be found in the Final RI Report for OU9, Site 65, dated November 1995.

4. OU12, Site 3, Old Creosote Plant
There is no surface water at this site. Therefore, no surface water or sediment samples were collected. Results of the previously performed Site Inspection did report that "sediment" samples were taken. However, these samples were actually just surface soil samples that were collected from beneath standing water on the site left from a rain event. This site is now in the design stage for the selected remedy of ex-situ biological treatment of soils and natural attenuation of groundwater. Complete results of the Site 3 RI can be found in the Final RI Report for OU12, Site 3, dated July 1996.

Additional LANTDIV Comments on Appendix B-2

1. Site 45, Campbell Street Fuel Farm

This site has not been "excluded" from the IR Program as stated. Rather, the nature of contaminants (petroleum products only) puts this into the Underground Storage Tank program, which is administered separately from the CERCLA-based IR Program at Camp Lejeune. Additional information concerning this site may be obtained from the LANTDIV point of contact for the UST program, Ms. Lori Reuther at (757) 322-4779.

2. Site 22, Industrial Area Tank Farm

As with Site 45, this site is being handled under the UST program. Because of the close proximity of groundwater plumes in the Hadnot Point area related to both Sites 22 and Site 78, close coordination between the IR and UST programs is occuring to ensure that investigation results from both sites are shared and that remedial strategies are complementary. Additional information concerning this site may be obtained from the LANTDIV point of contact for the UST program, Ms. Lori Reuther at (757) 322-4779.

5. OU15, Site 88, Base Dry Cleaners

This site was added to the IR program when chlorinated solvents were discovered in tanks thought to only hold petroleum products during a routine underground storage tank removal operation. The tanks were removed in 1995, along with 120 tons of contaminated soil from the area immediately surrounding the tanks. Both subsurface soil and groundwater at the site are contaminated with PCE and its breakdown products. A Phase 1 investigation conducted in 1996 confirmed the presence of the contamination and generally identified the extent. Results of this investigation are presented in a Phase 1 Report dated November 1996. A Phase 2 investigation was conducted in the spring of 1997. Results of this investigation will be provided in a report which is scheduled for submission in October 1997. The need for active remediation of the site contaminants is anticipated.

6. OU16, Site 89, STC-868

This site was added to the IR program after a UST (underground storage tank) investigation (looking for potential petroleum releases) detected the presence of chlorinated solvents in groundwater samples taken from beneath the site. The UST, which was used as a waste oil tank, was installed in 1983 and removed in 1993. A Phase 1 investigation was conducted in 1996. Results of this investigation are documented in the Phase 1 report dated November 1996. A large plume of chlorinated solvent contamination was found in groundwater, and the area of highest concentration was identified as the apparent source area, the DRMO (Defense Reutilization Maintenance Office). This operation is a sort of scrap yard where surplus government equipment and material is collected and stored for resale or recycling. This site is located near Edwards Creek and based on sampling results to date, it appears to be, along with Site 93, the source of contamination to the creek originally discovered during the Site 44 (OU6) investigation. See item 1 above. This site is still in the investigation stage.

7. OU16, Site 93, TC-942

This site was added to the IR program after a UST (underground storage tank) investigation (looking for potential petroleum releases) detected the presence of chlorinated solvents in groundwater samples taken from beneath the site. The UST, which was used for waste oil was removed in 1993. A Phase 1 investigation was conducted in 1996. Results of this investigation are documented in the Phase 1 report dated November 1996. A small plume of chlorinated solvent contamination was found in groundwater under this site. This site is also located near Edwards Creek and based on sampling results to date, it appears to be, along with Site 89, the source of contamination to the creek originally discovered during the Site 44 (OU6) investigation. See item 1 above. This site is still in the investigation stage.

8. OU17, Sites 90, 91, and 92

Site 90 - BB-9, Site 91 - BB-51, and Site 91 - BB-46 are all former UST sites in the Courthouse Bay area These sites were turned over to the IR program when low levels of chlorinated solvents were detected in groundwater during the UST investigations. The USTs were removed in 1992 - 1994. A Phase 1 investigation was initiated for these sites in 1997. A Phase 1 Report is scheduled to be submitted in August 1997. This site is still in the investigation stage.

9. OU18, Site 94, Building 1613

This site was added to the IR program when chlorinated solvents were detected in groundwater during a UST investigation. This site is still undergoing investigation and remediation efforts under the UST program to delineate and remediate petroleum contamination which exists at the site. Building 1613 is the Hadnot Point PCX Service Station (a gas station). The tanks were removed in 1995. Types of chlorinated compounds found indicate that the chlorinated contamination may be part of the Site 78 (Hadnot Point area) plume, and therefore unrelated to the USTs at the service station. However, previous investigations for Site 78 indicate that this may be a separate plume. Because a Final ROD had already been signed for OU1 (Site 78), this site was identified as a new Operable Unit. Preliminary investigations to determine if the contamination is the same or a separate plume are currently under way as part of the long-term monitoring program associated with the groundwater pump and treat system already operating at Site 78. Site 94 is still in the investigation stage.