

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director



August 2, 2005

NAVFAC Atlantic
Attn: Daniel R. Hood
Code: OPCEV
NC/Caribbean IPT, EV Business Line
6506 Hampton Blvd
Norfolk, VA 23508-1273

RE: Comments on the Draft Remedial Investigation (RI) Report
Operable Unit (OU) # 18, Site 94, MCB Camp Lejeune, NC
Soil and Groundwater
Camp Lejeune, NC6170022580
Jacksonville, Onslow County, North Carolina

Dear Mr. Hood:

The NC Superfund Section has received and reviewed the OU #18 (Site 94) Draft Remedial Investigation Report for the Camp Lejeune, MCB Superfund Site located in Jacksonville, NC. The following comments are offered for the Work Teams consideration. If you have any questions or comments please contact me at (919) 508 8467.

General Comment

The State agrees with the conclusions of this report since there are no human or ecological risks associated with contaminated soil at the Site and contaminated groundwater will be addressed within OU#1. The Underground Storage Tank Section has completed a soil removal action at the site and has an ongoing groundwater treatment system that is actively treating all contaminated groundwater from the on-site gasoline station. Risks associated with the groundwater at Site 94 appear to originate from the east-northeast or upgradient of the Site 94 area. This is clear from the fact that all shallow and deep groundwater at Site 94 was non-detect for the chlorinated solvent contaminants of concern (COCs) and the highest concentration of TCE was located in the eastern most monitoring well UST HPFFC-MW76 and GeoProbe location 94-IS22.

The Site 94 chlorinated solvent plume appears to originate from the area east and northeast of Site 94. Site 94 appears to be contained within or in close proximity to the groundwater plume of Operable Unit (OU)#1, Site 78 South and will, therefore, be addressed as part of Site 78 or as part of OU#1. The Site 94 plume is delineated and confirms an upgradient

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source (USTHPFFC-MW76, and IR 94-MW04DW, 94-IS22) that should also be located and further delineated. If possible, the upgradient chlorinated solvent source material/waste should be removed or treated in-place. The TCE Plume may have been drawn into the Site 94 area by the former municipal wells once located across Holcomb Blvd.

Specific Comments

1. As noted in the general comments above the upgradient chlorinated solvent plume in the area of buildings 1400 and 1401 should be further delineated to determine the boundary and source of the high concentrations of TCE in the intermediate wells USTPFFC-MW76 and the intermediate depth (50feet) GeoProbes 94-IS20, IS22, and IS23.
2. It appears that proper groundwater sampling techniques were not used to collect groundwater samples during the October 2004 sampling event at Site 94. Many of the monitoring wells were purged less than 1 well volume and often at rates that would be considered a micro-purge process that requires incremental sampling of the screened interval in order to determine at what elevation within the screen the primary contamination is entering the well (This is the elevation that the sampling tube needs to be located in order to micro-purge).

For instance, monitoring well USTHPFFC-MW43 has a 71 feet column of water that would require a minimum of 34.62 gallons of water be purged from the well before sampling. MW-43 only had a total of 0.8 gallons of water purged at a very low pump rate and very little head change prior to sampling. I understand the purpose for low flow sampling; however, there is a difference between low flow and micro purge sampling. Many of these samples had high turbidity in spite of the low flow sampling. Many of the monitoring wells were not properly purged and therefore, did not provide groundwater samples that are representative of the contaminated aquifer.

In general low flow purging and sampling are aquifer specific and may change from well to well due to heterogeneity. However, in general all monitoring wells should be purged a minimum of one well volume which may include purging the well "dry". The chemical or water quality indicators should be stable in accordance with the EPA Environmental Investigations Standard Operating Procedures (SOP) and Quality Assurance Manual. In many cases micro-purging occurs below 200 milliliters per minute (ml/min.) purge rates. Therefore, a minimum flow rate for purging a well should be greater than 200 ml/min (preferable purging rate is greater than 500 ml/min. if aquifer permits and NTUs are below 10.)

If the specific hydrogeology at a particular well requires a lower purge rate than 200 ml/min. incremental sampling of the well screen at intervals of 1.5 to 2.0 feet will be required in order to determine the primary contaminant zone of the screened interval of the well. This will establish the elevation within the screened interval where the sampling tube is to be located during all future sampling events.

Mr. Daniel Hood

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The following wells were purged less than one well volume: IR94-MW01DW, IR94-MW03DW, IR94-MW04, IR94-MW05, UST1613-MW13, UST1613-MW15, and UST1613-MW16. The purge volumes for the following wells need to be provided: UST1613-MW03, UST1613-MW10, and UST1613-MW20.

The monitoring wells listed above need to be re-sampled using the minimum purge rate and minimum volume requirements noted above. If the concentration does not change significantly (>20% or >50% for low concentration wells (< 10ug/l)) future purge and sample events may use the lower purge rates and lower purge volumes. If the base has historical data with the proper purge volumes that document that significant changes have not occurred, since the change to lower volume purging, this will also be sufficient site specific data to justify the lower purge rates and volumes.

If you have any questions or comments, please contact me, at (919) 508 8467 or email randy.mcelveen@ncmail.net

Sincerely,



Randy McElveen
Environmental Engineer
NC Superfund Section

Cc: Dave Lown, NC Superfund Section
Bob Lowder, EMD/IR
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