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**State of North Carolina**
**Department of Environment**
**and Natural Resources**
**Wilmington Regional Office**
**Division of Water Quality**
**Groundwater Section**

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

May 26, 2000

Ms. Kate Landman, Code 18232
Atlantic Division,NAVFACENGCOM
LRA, Building A, Room 3200
6500 Hampton Blvd.
Norfolk, Virginia 23508

Subject: Transmittal of Memorandum Hard Copy
Draft Work Plan Submittal
PCA Forensics Investigation
Site 89
Contract N62470-97-D-5000, Task Order 050
MCB Camp Lejeune, NC

Dear Ms. Landman:

Please find enclosed a hard copy of the subject memorandum from Charles Stehman, which was e-mailed to you on May 24, 2000. The subject memorandum offered comments concerning the Division's review of the Draft Work Plan Submittal, PCA Forensics Investigation for Site 89 at Camp Lejeune, North Carolina.

Should you have questions, please contact me at 910-395-3900.

Sincerely,

C. Diane Rossi

C. Diane Rossi
Hydrogeological Technician II.

CDR
cc: WiRO-GWS

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**NORTH CAROLINA DIVISION OF WATER QUALITY**
**Groundwater Section**
**Wilmington Regional Office**

**MEMORANDUM TO:** Kate Landman

**FROM:** Charlie Stehman

**SUBJECT:** Draft Work Plan for PCA Forensics Investigation Site 89

**DATE:** April 27, 2000

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This office received a copy of the draft work plan for a forensic study of the origin of PCA at Camp Lejeune OU#16 Site 89. I have reviewed this document with the following comments:

1. Although well intended, and perhaps needed for criminal investigative purposes, the proposed study is premature in that we know very little about the distribution of volatile compounds in groundwater below the site. I believe the delineation, which is described in the "Data Collection" will reveal quite a bit of useful information which may entirely preclude the sophisticated approaches described in this document. After data collection the modeling and degradation modeling may still be needed, however, I would request that an assessment report with figures and tables (but no more that two pages of text and no SOP discussions) be provided to the partners for group analysis prior to initiating the forensic analysis.

2. The statement that the highest concentrations of PCA are found at MW02 is misleading. There is very little monitoring analysis at this site. I suspect there may be dual plumes as there are dual soil spoils. At this time there are no wells south of Building TC952 in the covered area.

3. The modeling approach could be foiled if the contaminant plume has already reached a discharge point or points because the distance traveled parameter needed for this type of analysis would not be available. Unfortunately, we know that contaminants are discharging to the surrounding creeks and ditches at this time.

4. Your consultants state, correctly, that the degradation approach will require several rounds of sampling. This approach is not going to produce reliable information for some time. Furthermore, without spending a lot of money and time, control of site specific factors and other unknowns will greatly reduce confidence in the degradation analysis.

5. A lot of work has been done by others to establish the time or time frame of particular actions that have impacted groundwater, particularly for purposes of court. The success of these analyses in my observation is limited and disappointing. And finally, from a regulatory stand point, knowledge of the origin, distribution and secondary sources of the groundwater contamination is far more important than knowledge of the age of the event that caused the contamination. This is where I would put my money

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