03.01-03/31/95-01618

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

March 31, 1995

Commander, Atlantic Division
Naval Facilities Engineering Command
Code 1823-2
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: Draft Remedial Investigation Report for Operable Unit 7 (Sites 1, 28, and 30), MCB Camp Lejeune.

Dear Ms. Landman:

The referenced documents have been received and reviewed by the North Carolina Superfund Section. Our comments are attached. Comments on the Ecological and Baseline Risk Assessments are attached as memos from David Lilley, our Industrial Hygienist to myself. Please call me at (919) 733-2801 if you have any questions about this.

Sincerely,

Patrick Watters

Patrick Watters
Environmental Engineer
Superfund Section

Attachment

cc: Gena Townsend, US EPA Region IV
Neal Paul, MCB Camp Lejeune
Bruce Reed, DEHNR - Wilmington Regional Office

North Carolina Superfund Comments
Draft Remedial Investigation Report
Operable Unit 7 (Sites 1, 28, and 30) MCB Camp Lejeune
Volumes I, II and III

Volume I - Site 1

1. General
The results of the RI do not show any meaningful areas of contamination that coincide with the disposal of 5,000 to 20,000 gallons of POL waste and 1,000 to 10,000 gallons of battery acid waste. In light of this, we believe the following should be considered for Site 1.

- The RI report did not elaborate on exactly how the suspected areas of contamination were established, however this decision should be thoroughly reviewed to determine if these areas have been accurately identified. Also, we would like to see more detail in the RI Report on the process used to establish the suspected disposal areas.

- Figure 3-1 clearly shows that large portions of the suspected disposal areas were not covered by the soil sampling scheme. Additional soil sampling is warranted to cover these areas especially since the RI results did not coincide with suspected disposal quantities. In retrospect, it probably would have been more appropriate to establish a systematic sampling grid with consistent tighter spacing between sample locations. It may also be appropriate to expand the investigation beyond the currently defined areas.

- There needs to be better assessment of the groundwater within the boundaries of the suspected disposal areas for Site 1. We have good coverage downgradient of the suspected areas however there are no monitoring wells within the southern disposal area and the 2 new wells (1-deep, 1-shallow) within the northern disposal area are more or less in an upgradient location. It may be appropriate to use a hydropunch to perform some preliminary site screening.

2. Page ES-5, RI Activities
The paragraph after the sample listings states that a drainage ditch in the southern portion of the site was not sampled because of a lack of surface water. This is an important feature of the site and should have been sampled for soil or sediment regardless of the level of the water in the ditch. The fact that this ditch was not sampled is mentioned several times in the RI Report.

Also, there are several other areas around Site 1 that should have been included in the surface water and sediment sampling scheme. These are as follows:

- The portions of Cogdels Creek due west and northwest of Site 1. (Since this creek was sampled for the OU 1 RI, these results may be appropriate to include for Site 1.)
- The "marsh" noted on Figure 5-2 that receives water from the drainage ditch that was not sampled.
- The ponds due north of building FC-134.
- The unidentified creek due north of Site 1. (NOTE: a portion of the creek is shown on Figure 5-2.

3. Page ES-14, Table ES-2
This comment has been noted before but it is reiterated here for your consideration. While filtered groundwater samples may provide some insights into the levels of inorganic contaminants at Camp Lejeune, these results cannot be used to determine compliance with the North Carolina groundwater standards (15A NCAC 2L).

Filtered groundwater samples (often noted as "dissolved metals") are referenced throughout the RI Report for all 3 sites sometimes making the text confusing which adds to the review time needed for these documents. We recommend that any discussion of filtered groundwater data for inorganics be presented as an appendix and not in the body of the report.

4. Page 2-1 Site Description
The next to last paragraph makes reference to the existence of an active gasoline service island with a UST of unknown capacity on Site 1. The RI Report makes no further mention of this gasoline station or of any associated investigations. Since this site is suspected of having POL waste, the gasoline station should be investigated since it could be a contributor to site contamination.

Volume II - Site 28

5. Figures 11-4 through 11-8
The scale on these photographs appears to be incorrect. The indicated scale is 1" to 3100' when it appears to be in the neighborhood of 1" to 300'.

6. Page 14-15 Aquatic Investigation
The first paragraph indicates that an inadequate number of fish species were collected from Cogdels creek due to weather conditions. Since this is acknowledged as a data gap, we assume that there will be plans to obtain additional samples for Site 28 during suitable weather.

7. Page 2-2, Section 2.1.1.2
Based on the aerial photos and the soil sample results, it appears there is a need for additional soil samples to further clarify the extent of the SVOC "hot spots" (i.e. SB11 and GW01) at Site 28 and to provide confirmatory data for areas that were not sampled (i.e. using a tighter sampling grid).

8. Page 14-17, Section 14.4.2
Figure 14-3 referenced in this and other sections was not included in our copy of the RI Report.

9. Page 14-20, Section 14.4.3.3 and Page 14-22, Section 14.4.4.4
It does appear that the active pistol range is the likely source of lead contamination seen in the surface water and sediment. This pistol range is beyond the scope of this RI however this may be a water quality issue as far as the lead contamination in the New River. We recommend that Camp Lejeune investigate this area and determine if measures can be taken to better contain the lead contamination at the range and inhibit migration to the sediment and surface water.

10. Table 14-2
Please note the following corrections on the fifth page of this table:
- For xylenes, the "Distribution" column erroneously indicates that 1 sample value (19ug/L) exceeded the ARAR (530 ug/L).
- Contrary to the table, there are NC groundwater standards for Napthalene (21 ug/L), Fluorene (280 ug/L) and Phenanthrene (210 ug/L).

Volume III - Site 30

11. General
The results of the RI do not identify any meaningful areas of contamination that coincide with the disposal quantities noted in Section 20. As a result, we believe the following issues similar to those noted earlier for Site 1 should also be considered for Site 30.

- The RI report did not elaborate on exactly how the suspected area was established, however this decision should be thoroughly reviewed to determine if the suspected area of contamination has been accurately identified. Also, we would like to see more detail in the RI Report on the process used to establish the suspected disposal areas.

- Perform additional soil sampling if other areas are identified through a re-review of the documentation and photographs. We recommend that any additional sampling be performed using a more systematic grid system with tighter spacing between sample locations. It may also be appropriate to expand the investigation beyond the currently defined areas.

- There needs to be better assessment of the groundwater within the boundaries of the suspected disposal areas for Site 30. Only one of the two existing wells is within the suspected disposal area while the other one is ~500 ft. downgradient from the site. The only new well was placed ~1000 ft. upgradient of the site and therefore

does not provide data directly from the disposal site. It may be appropriate (after reassessment of the site location) to first use hydropunch samples as a preliminary screening tool to pinpoint the disposal area location.

March 10, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Report, OU 7, MCB Camp Lejeune

1. Page 7-2, last paragraph: It is stated that "data that would result in inaccurate conclusions were reduced within the data set". This statement implies the conclusion is predetermined and data that does not support the conclusion is eliminated. Please explain or delete this statement.

2. Page 7-3, second paragraph: The sediment samples collected from the drainage ditch cannot simply be ignored. If they will not be considered sediment samples, they will need to be considered surface soil samples. To ignore these sampling results would be to imply that contaminants can be disposed of in drainage ditches and ignored, which is not the case.

3. Page 7-3, fourth paragraph: It is stated that "Quantifying risk for all positively identified parameters may distract from the dominant risks presented by the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

4. Page 7-4, third paragraph: It is stated that "data from the first round of sample collection was used to assess potential risk, with the exception of the groundwater data". Which round was the first round? For soils, the first round of sampling was in 1991 (the top of page 7-4). Why is the sampling data from 1994 used? Please explain or delete this statement.

5. Page 7-5, last paragraph: This seems like a lot of contamination to find in blanks. Are proper sampling, decontamination, and laboratory procedures being followed? Please explain.

6. Page 7-7, section 7.2.4.1, second paragraph: It is claimed the following contaminants were detected at a frequency of less than 5%: beryllium, mercury, selenium, dieldrin, endosulfan sulfate, endrin aldehyde, fluoranthene, pyrene, butyl benzyl phthalate, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene, and tetrachloroethene. All these chemicals were detected 1/18 times, or 5.6%, not less than

5% as claimed, therefore, they should all be retained as COPCs. It was claimed on page 7-3 (second paragraph) that sediment samples taken from the drainage ditch would be removed from the data set (see comment 2). On page 7-7, a sediment sample (it must be 1-SD02-612 because that is the only surface soil or sediment sample where tetrachloroethene was detected) is included as a surface soil sample, which contradicts the statement on page 7-3. The sediment samples should be included as a surface soil samples, the statement that tetrachloroethene will be removed from the data set should be deleted, and tetrachloroethene should be included from the list of COPCs because it was detected at a frequency of greater than 5%.

7. Page 7-7, section 7.2.4.1, second paragraph: It is claimed that dieldrin, endosulfan sulfate, and endrin aldehyde, were detected at a frequency of less than 5%. These chemicals were detected 3/18 times, or in 17% of the samples. All three of these chemicals should be retained as COPCs.

8. Page 7-7, Section 7.2.4.1, first paragraph: No mention is made of alpha-chlordane, and gamma chlordane (frequency of detection = 22%). They are listed in Table 7-5 as COPCs, why were they not mentioned on page 7-7?

9. Page 7-7, Section 7.2.4.2, third paragraph: Acetone was not included in the list of COPCs, however, it was detected in 13% of the samples, and in one of the samples, it was detected at a concentration greater than ten times the blank concentration. Therefore, acetone should be retained as a COPC.

10. Page 7-7, Section 7.2.4.2, second paragraph: It is claimed DDT was eliminated from the list of COPCs because it was detected in less than 5% of the samples. According to page 80 of 80 in Appendix K, DDT was detected in 8/110 times, or in 7.3% of the samples. DDT should be retained as a COPC since it was detected at a frequency of greater than 5%.

11. Page 7-7, section 7.2.4.3, first paragraph: The reader does not understand why no mention as to why the following chemicals were analyzed for in only one sample, while (according to Appendix K, Shallow and Deep Groundwater-Frequency of Detection Summary, page 17 of 20) the other VOCs were analyzed for in 19 samples: acetone, carbon disulfide, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, and styrene. Please explain.

12. Page 7-7, section 7.2.4.3, first paragraph: The reader does not understand why no mention as to why the following chemicals were analyzed for in 18 samples, while (according to Appendix K, Shallow and Deep Groundwater-Frequency of Detection Summary, page 17 of 20) the other VOCs were analyzed for in 19 samples: 2-chloroethylvinylether, 1,3-

dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, and trichlorofluoromethane. Please explain.

13. Page 7-8, second paragraph: Chloromethane, vinyl chloride, and xylene are deleted from the list of COPCs because it is claimed they were detected at a frequency of less than 5%. According to Table 7-4, they were detected in 1/19 samples, or 5.3%, and therefore should be retained as COPCs.

14. Page 7-8, second paragraph: Phenol and diethylphthalate are deleted from the list of COPCs because it is claimed they were detected at a frequency of less than 5%. According to Table 7-4, they were detected in 2/19 samples, or 11%, and therefore should be retained as COPCs.

15. Appendix K, Shallow and Deep Groundwater: Why are there so much R qualified data? Please explain the procedures implemented to prevent a reoccurrence of so much R qualified data in the future.

16. Page 5-6, section 5.3.2, first paragraph: It is unclear to the reader why only "limited" (5/19) samples were tested for PCBs and pesticides. Please explain.

17. Page 7-8, second paragraph: It is claimed cobalt, lead, and vanadium were detected in less than 5% of the samples collected. Table 7-3 lists the frequency of detection of all three of these contaminants as 11%, therefore, all three of these contaminants should be retained as COPCs.

18. Page 7-9, Section 7.3.1.1, first paragraph: The site conceptual model is in Appendix Q, not Appendix P as claimed.

19. Page 7-11, section 7.3.2.2, and Appendix Q, Figure 1: It is not understood by the reader why the inhalation of particulates is a viable exposure route for future residents and current military personnel, but not future construction workers. Please explain.

20. Table 7-9: The reader is confused by the headings on this table. The numbers appear to be dermal RfDs and SFs, but the headings make no sense. How can a dermal SF be calculated from inhalation data? Please explain.

21. Page 7-31, section 7.8, second paragraph: This sentence needs to be changed to state that carcinogenic and noncarcinogenic risks from surface and subsurface soil were within the acceptable risk range. There is no such thing as "no potential risks".

DL/dl/ra.com/15,16,17

March 14, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Report, Ecological Risk Assessment, OU 7, MCB Camp Lejeune

1. Page 8-3, Section 8.2.1.1, first paragraph: If the COPCs are going to differ from those included in the BRA, the differences need to be pointed out and explained.

2. Page 8-3, Section 8.2.1.1, second paragraph: It is stated that "Quantifying risk for all positively identified parameters may distract from the dominant risks presented by contaminants at the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

3. Page 8-4, first paragraph: It is claimed that dieldrin, endosulfan sulfate, and endrin aldehyde, were detected at a frequency of 1/16. According to Appendix K, page 16 of 16, these chemicals were detected 3/18 times. All three of these chemicals should be retained as COPCs.

DL/dl/ra.com/18

March 22, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Baseline Human Health Risk Assessment Report, OU 7 (Site 28) MCB Camp Lejeune

1. Page 16-2, last paragraph, and page 16-3, first paragraph: It is stated that "data that would result in inaccurate conclusions were reduced within the data set". This statement implies the conclusion is predetermined and data that does not support the conclusion is eliminated. Please explain or delete this statement.

2. Page 16-3, Section 16.2.3, first paragraph: It is stated that "Quantifying risk for all positively identified parameters may distract from the dominant risks presented by the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

3. Page 16-6, first paragraph: This seems like a lot of contamination to find in blanks. Are proper sampling, decontamination, and laboratory procedures being followed? Please explain.

4. Page 16-6, Section 16.2.4.1, second paragraph: It is stated that acenaphthene and fluorene were excluded from the list of COPCs because they were detected at a frequency of less than 5%. According to Appendix K, they were detected at a frequency of 2/40, or 5% and should be retained as COPCs.

5. Page 16-6, last line: The detection of BEHP (the reader assumes this means bis(2-ethylhexyl)phthalate, please spell out chemical names in full in the future) in levels above 10 times the laboratory blank concentration in 7/40 samples **IS** reason to include this chemical as a COPC. Please do so.

6. Page 16-7, first line: A list of PAHs is given which have been excluded from the list of COPCs because they were found in concentrations within typical urban soil ranges. Since this site is not considered to be "urban", these PAHs need to be included in the list of COPCs. Also, the cited reference (ASTDR, 1990) should be ATSDR, which stands for the "Agency for Toxic Substance Disease Registry".

7. Page 16-6, Section 16.2.4.1, second paragraph: It is stated that endrin and Aroclor-1254 were excluded from the list of

COPCs because they were detected at a frequency of less than 5%. According to Appendix K, they were detected at a frequency of 2/40, or 5% and should be retained as COPCs.

8. Page 16-7, Section 16.2.4.2: The following contaminants were detected in on-site soils at a frequency of greater than 5% and should be included in the list of COPCs: 1,4-dichlorobenzene, 2-methylnaphthalene, dibenzofuran, anthracene, carbazole, benzo(a)anthracene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene.

9. Page 16-7, Section 16.2.4.2, third paragraph: See comment number 6.

10. Page 16-7, Section 16.2.4.2, second paragraph: It is claimed Aroclor-1260 was excluded from the list of COPCs because it was detected in less than 5% of the samples. According to Appendix K, it was detected in 2/32 samples, or 6%, therefore, it should be included in the list of COPCs.

11. Page 16-7, Section 16.2.4.2, second paragraph: It is claimed beryllium was excluded from the list of COPCs because it was detected in less than 5% of the samples. According to Appendix K, it was detected in 4/51 samples, or 8%, therefore, it should be included in the list of COPCs.

12. Page 16-7, Section 16.2.4.3, second paragraph: It is claimed gamma-chlordane, naphthalene, 2-methylnaphthalene, dibenzofuran, fluorene, phenanthrene, anthracene, carbazole, fluoranthene, pyrene, chloroform, ethylbenzene, and xylene were excluded from the list of COPCs because they were detected in less than 5% of the samples. According to Appendix K, they were detected in 1/13, or 7.7% of the samples, therefore, they should be included in the list of COPCs.

13. Page 16-7, Section 16.2.4.3, second paragraph: It is claimed 2-methylphenol, 4-methylphenol, and 2,4-dichlorophenol were excluded from the list of COPCs because they were detected in less than 5% of the samples. According to Appendix K, they were detected in 1/13, (excluding R qualified data) or 7.7% of the samples, therefore, they should be included in the list of COPCs.

14. Page 16-8, Section 16.2.4.4, New River, second paragraph: It is claimed barium was found at levels within site background levels. According to Appendix M, the average background level for barium was 17.9 ug/l. According to Appendix K, the sample results for barium exceeded two times the background level in 10/13 samples. Barium should be retained as a COPC.

15. Page 16-8, Section 16.2.4.4, Cogdels Creek, third paragraph: It is claimed arsenic, copper, nickel, and vanadium were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected in 1/7 or 14% of the samples, therefore, they should be included in the list of COPCs. It is also claimed barium was detected infrequently, although Appendix K lists barium as detected in 7/7, or 100% of the samples. Barium should be included in the list of COPCs.

16. Page 16-9, second paragraph: It is claimed acenaphthene, dibenzofuran, fluorene, and dibenz(a,h)anthracene, were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected 1/10 times, or in 10% of the samples, therefore, they should be included in the list of COPCs.

17. Page 16-9, third paragraph: The fact that BEPH (bis (2-ethylhexyl) phthalate?) was detected 3/10 times, with 2 of those samples exceeding 10 times the blank concentration **IS** a reason to include it in the list of COPCs. Please do so.

18. Page 16-9, first paragraph: It is claimed aluminum, chromium, manganese, nickel, and vanadium were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

19. Page 16-9, Cogdels Creek, fourth paragraph: It is claimed carbon disulfide was found in the lab blanks. Page 16-6 of this report, which lists contaminants found in the lab blanks, does not include carbon disulfide. Since carbon disulfide was detected in 2/14 samples, or 14%, it should be included in the list of COPCs.

20. Page 16-9, Cogdels Creek, third paragraph: It is claimed phenanthrene, anthracene, 3,3-dichlorobenzidine, B(b)F (benzo(b)fluoranthene?), and B(k)F (benzo (k)fluoranthene?) were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected 1/14 times, or in 7% of the samples, therefore, they should be included in the list of COPCs.

21. Page 16-9, Cogdels Creek, fourth paragraph: The fact that BEPH (bis (2-ethylhexyl) phthalate?) was detected 12/14 times, with 1 of those samples exceeding 10 times the blank concentration **IS** a reason to include it in the list of COPCs. How could 1,700 ug/kg be interpreted as "slightly" exceeding 10 times the blank concentration of 940 ug/kg? Bis (2-ethylhexyl)phthalate should be included in the list of COPCs.

22. Page 16-9, Codgels Creek, second paragraph: It is claimed cobalt and nickel were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

23. Page 16-9, Codgels Creek, third paragraph: Barium, beryllium, cadmium, silver, and thallium were all detected in frequencies greater than 5% and should be included in the list of COPCs.

24. Page 16-9, next to last paragraph: It is claimed barium and zinc were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

25. Page 16-10, Section 16.2.4.6, New River: The sampling results for VOCs, SVOCs, and PCBs/Pesticides were not provided in Appendix K, therefore, a review of this section for those parameters is not possible. Please provide the missing data.

26. Page 16-10, Section 16.2.4.6, Cogdels Creek: Since an insufficient amount of fish tissue samples were collected from this surface water body, it is recommended resampling take place.

27. Page 16-10, Section 16.2.4.6, Orde Pond: It is claimed mercury was found at levels within site background concentrations. The information provided in Appendix K does not support this claim. Please explain.

28. Page 16-12, fourth paragraph: If subsurface soil is available for ingestion and dermal contact, it is available for inhalation. It is recommended that the inhalation route for construction worker exposure to subsurface soil be evaluated.

29. Page 16-16, next to last paragraph: The "95% level for the arithmetic average" summaries appear in Appendix L, not Appendix R as claimed.

30 . Table 16-10: The reader is confused by the headings on this table. The numbers appear to be dermal RfDs and SFs, but the headings make no sense. How can a dermal SF be calculated from inhalation data? Please explain.

31. General procedural comment: **A LOT** of time and effort seems to be spent on the selection of COPCs (in this report, Section 16.2.4). In looking back through my comments on the risk assessments conducted on Camp Lejeune over the last year, it has become obvious there are ongoing problems in this section. The main problem seems to be one of not following the procedures for elimination of chemicals from the list of COPCs listed in the "Criteria Used in Selection of COPCs" (in this report, Section 16.2.3). There are so many inconsistencies in these risk assessments that it is impossible to determine whether the conclusions are even "in the ballpark".

For risk assessments conducted in house by the NC Superfund Section, it has been found that the time spent attempting to eliminate COPCs is better spent simply carrying all positively detected chemicals through the risk assessment. The chemicals that would have been eliminated during the selection of COPC process due to low concentrations will drop out, (present a small fraction of the total risk) and lab blank contamination almost always drops out. Lab blank contamination that does not drop out can be more quickly weeded out at the end. This is just one suggestion, there may be other ways to solve this problem.

March 31, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Report, Ecological Risk Assessment, OU 7 (Site 28) MCB Camp Lejeune

1. Page 17-3, Section 17.2.1.1, first paragraph: If the COPCs are going to differ from those included in the BRA, the differences need to be pointed out and explained.

2. Page 17-3, Section 17.2.1.1, second paragraph: It is stated that "Quantifying risk for all positively identified contaminants may distract from the dominant risk driving contaminants at the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

3. Page 17-4, Cogdels Creek, third paragraph: It is claimed arsenic, copper, nickel, and vanadium were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected in 1/7 or 14% of the samples, therefore, they should be included in the list of COPCs. It is also claimed barium was detected infrequently, although Appendix K lists barium as detected in 7/7, or 100% of the samples. Barium should be included in the list of COPCs.

4. Page 17-5, New River, second paragraph: It is claimed aluminum, chromium, manganese, nickel, and vanadium were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

5. Page 17-5, New River, first paragraph: BEPH (bis (2-ethylhexyl) phthalate?) was detected 3/10 times, with 2 of those samples exceeding 10 times the blank. This is a reason to retain this chemical as a COPC. Please do so.

6. Page 17-5, New River,first paragraph: It is claimed acenaphthene, dibenzofuran, fluorene, and dibenz(a,h)anthracene, were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected 1/10 times, or in 10% of the samples, therefore, they should be included in the list of COPCs.

7. Page 17-5, Cogdels Creek, first paragraph: It is claimed carbon disulfide was found in the lab blanks. Page 16-6 of this report, which lists contaminants found in the lab blanks, does not include carbon disulfide. Since carbon disulfide was detected in 2/14 samples, or 14%, it should be included in the list of COPCs.

   It is claimed phenanthrene, anthracene, 3,3-dichlorobenzidine, benzo(b)fluoranthene, and benzo(k)fluoranthene were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected 1/14 times, or in 7% of the samples, therefore, they should be included in the list of COPCs.

   BEPH (bis (2-ethylhexyl) phthalate?) was detected 12/14 times, with 1 of those samples exceeding 10 times the blank concentration. This is a reason to include it in the list of COPCs. Please do so.

8. Page 16-9, Codgels Creek, second paragraph: It is claimed cobalt and nickel were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

9. Page 17-5, Codgels Creek, third paragraph: Beryllium, cadmium, silver, and thallium were all detected in frequencies greater than 5% and should be included in the list of COPCs.

10. Page 17-6, Orde Pond, second paragraph: It is claimed barium and zinc were found at levels within site background. However, the background sediment sampling data in Appendix M does not include an average background level. Please provide this information so a comparison of the concentrations for the above contaminants to background can be made.

11. Page 17-6, COPCs-Biota Samples, New River: The sampling results for VOCs, SVOCs, and PCBs/Pesticides were not provided in Appendix K, therefore, a review of this section for those parameters is not possible. Please provide the missing data.

12. Page 17-6, New River-Whole Body: The sampling results for whole body fish sampling of the New River is not included in Appendix K, therefore, a review of this section is not possible. Please provide the missing data.

13. Page 17-7, Orde Pond-whole body: Since practically all the VOC and SVOC data were rejected, resampling is recommended.

14. Page 17-8, first paragraph: It is stated that acenaphthene and fluorene were excluded from the list of COPCs because they were detected at a infrequently. According to Appendix K, they were detected at a frequency of 2/40, or 5% and should be retained as COPCs.

15. Page 17-8, first paragraph: According to Appendix K, BEHP (the reader assumes this means bis(2-ethylhexyl)phthalate, please spell out chemical names in full in the future) was detected in levels above 10 times the laboratory blank concentration in 7/40 samples. This is a reason to include this chemical as a COPC. Please do so.

16. Page 17-8, second sentence: A list of PAHs is given which have been excluded from the list of COPCs because they were found in concentrations within typical urban soil ranges. Since this site is not considered to be "urban", these PAHs need to be included in the list of COPCs.

17. Page 17-8, first paragraph: It is stated that endrin and Aroclor-1254 were excluded from the list of COPCs because they were detected infrequently. According to Appendix K, they were detected at a frequency of 2/40, or 5% and should be retained as COPCs.

18. Page 17-15, Section 17.2.5, second bullet: Will the exposure of terrestrial receptors to surface water and surface soil be via the ingestion, dermal, and inhalation routes, or some combination? Please explain.

DL/dl/ra.com/28,29,30

March 16, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Baseline Human Health Risk Assessment Report, OU 7 (Site 30) MCB Camp Lejeune

1. Page 25-2, last paragraph: It is stated that "data that would result in inaccurate conclusions were reduced within the data set". This statement implies the conclusion is predetermined and data that does not support the conclusion is eliminated. Please explain or delete this statement.

2. Page 25-3, Section 25.2.3, first paragraph: It is stated that "Quantifying risk for all positively identified parameters may distract from the dominant risks presented by contaminants at the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

3. Page 25-5, Section 25.2.3.5, second paragraph: This seems like a lot of contamination to find in blanks. Are proper sampling, decontamination, and laboratory procedures being followed? Please explain.

4. Page 25-6, Section 25.2.4.1, third paragraph: It is claimed TCA (the reader is assuming this means 1,1,1-trichloroethane-please spell out chemical names in full in the future) was eliminated from the list of COPCs because it was detected in less than 5% of the surface soil samples. Appendix K, page 7 of 9 lists the frequency of detection as 2/11, or 18%, therefore, 1,1,1-trichloroethane should be retained as a COPC.

5. Page 25-6, Section 25.2.4.1: It is unclear why surface soil samples were not analyzed for PCBs and pesticides. Please explain.

6. Page 25-6, Section 25.2.4.2, second paragraph: It is claimed that "TCA" (1,1,1-trichloroethane?) was eliminated from the list of COPCs because it was detected in less than 5% of the subsurface soil samples. Appendix K, page 7 of 9, lists the frequency of detection as 1/11, or 9%, therefore, 1,1,1-trichloroethane should be retained as a COPC.

7. Page 25-6, Section 25.2.4.2, second paragraph: The detection of BEHP (bis-2-ethylhexyl phthalate?) in levels

above 10 times the laboratory blank concentration in 2/11 samples IS reason to include this chemical as a COPC. Please do so.

8. Page 25-6, Section 25.2.4.2: It is unclear why the subsurface soil samples were not analyzed for PCBs and pesticides. Please explain.

9. Page 25-7, Section 25.2.4.5: It is unclear why sediment samples were not analyzed for PCBs and pesticides. Please explain.

10. Page 25-6, Section 25.2.4.3: The original sampling data was included for the first round of sampling (Appendix K), but not the second. Why? The original sampling data for round two will need to be submitted before this section can be reviewed.

11. Page 25-7, Section 25.2.4.4, third paragraph: It is claimed no pesticides or PCBs were detected in the surface water. Appendix K does not include sampling results for pesticides or PCBs in surface water. Was the surface water analyzed for pesticides or PBCs? If so, the sampling results will need to be submitted before a review can take place. If not, it is recommended sampling for pesticides and PCBs take place.

12. Page 25-7, Section 25.2.4.4, first paragraph; and Section 25.2.4.5, first and second paragraphs: Where is a comparison of contaminant concentrations to background levels provided? Please provide this information.

13. Page 25-8, last paragraph: It is stated that "the groundwater at this site is not potable", therefore, "groundwater exposure was not assessed". The reader is also referred to the Potable Water Supply Section for clarification. The referenced section does not provide a clarification of the claim that the groundwater at this site is not potable, it only states that groundwater at this site is not currently used. Whether or not the groundwater is currently used has nothing to do with its potability. A statement in the Potable Water Supply Section also claims the use of groundwater will be evaluated, which contradicts the statement made on page 25-8. Please explain.

14. Page 25-10, section 25.3.2.3, second paragraph: The second sentence claims groundwater on this site is not potable, but later in the paragraph it is claimed a potable well may be installed on-site. Please explain this contradiction.

15. Table 25-9: The given RfD for cobalt is not listed in IRIS or HEAST. Where was this information obtained?

16. The RfC for manganese is 5 E-05 mg/kg/day, not 1.43 mg/kg/day as listed.

17. Table 25-10: The reader is confused by the headings on this table. The numbers appear to be dermal RfDs and SFs, but the headings make no sense. How can a dermal SF be calculated from inhalation data? Please explain.

18. Page 25-11, sections 25.3.2.4 and 25.3.2.5: It is unclear why exposure to surface water and sediment were not considered in the future residential exposure scenario. Please explain.

March 17, 1995

TO: Patrick Watters

FROM: David Lilley DBL

RE: Comments prepared on the Draft Remedial Investigation Report, Ecological Risk Assessment, OU 7 (Site 30) MCB Camp Lejeune

1. Page 26-3, Section 26.2.1.1, first paragraph: If the COPCs are going to differ from those included in the BRA, the differences need to be pointed out and explained.

2. Page 26-3, Section 26.2.1.1, second paragraph: It is stated that "Quantifying risk for all positively identified contaminants may distract from the dominant risk driving contaminants at the site". If the risk posed by certain contaminants is relatively low, that will be determined by the risk assessment. Please explain or delete this statement.

3. Page 26-3, COPCs-Surface Water: It is claimed no pesticides or PCBs were detected in the surface water. Appendix K does not include sampling results for pesticides or PCBs in surface water. Was the surface water analyzed for pesticides or PBCs? If so, the sampling results will need to be submitted before a review can take place. If not, it is recommended sampling for pesticides and PCBs take place.

   Where is a comparison of contaminant concentrations to background levels provided? Please provide this information.

4. Page 26-4, COPCs-Sediments: The reason no pesticides or PCBs were detected in the sediments is because the sediments were not analyzed for these parameters. Please explain. It is recommended the sediments at Site 30 be sampled for pesticides and PCBs.

5. Page 26-4, COPCs-Surface Soil: Since TCA (the reader is assuming this means 1,1,1-trichloroethane-please spell out chemical names in full in the future) was detected in 2/11 samples, it should be retained as a COPC.

   It is unclear why surface soil samples were not analyzed for PCBs and pesticides. Please explain.

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