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NCBC GULFPORT
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LETTER AND COMMENTS FROM U S EPA REGARDING REVIEW OF SAMPLING AND
MONITORING PLANS NCBC GULFPORT MS
12/20/1991
U S EPA REGION IV



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

DEC 30 1991

4WD-RCRASFFB-2

R. J. Johnson, LT, CEC
Public Works Officer
Naval Construction Battalion Center
Gulfport, Mississippi 39501-5000
ATTN: 5090, Ser 470.2/2667

Re: Review of Sampling and Monitoring Plans
Naval Construction Battalion Center (NCBC)
EPA I.D. Number MS2 170 022 626

Dear Lieutenant Johnson:

The Agency has completed review of the NCBC site B assessment plans. The reports reviewed included (1) Soil Sampling and Analysis Plan, (2) Groundwater Monitoring Program Plan, (3) Appendix A - Health and Safety Plan, and (4) Appendix B - Analytical Methods. Comments enclosed with this letter were generated by both EPA and Mississippi Department of Environmental Quality, and represent a consolidated response from both agencies.

Please respond to these comments within thirty (30) days, and send two (2) copies of revised documents to each of the agencies listed below:

James S. Kutzman, P.E.
Associate Director
Office of RCRA and Federal Facilities
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365
ATTN: RCRA-2, WMO

Mr. Sam Mabry, Chief
Hazardous Waste Division
Mississippi Department of
Environmental Quality
Post Office Box 10385
Jackson, Mississippi 39209

If you have any questions regarding these comments, please contact Elizabeth Ketcham of the Waste Engineering Section, at (404)347-3433.

Sincerely yours,

James S. Kutzman, P.E.
Associate Director
Office of RCRA and Federal Facilities
Waste Management Division

Enclosure

Post-It® brand fax transmittal memo 7871 # of pages 7

To: Cdr. Evstace	From: Dan Owens
Co: CBL Gulfport	Co: WASTE DIV
Dept: XD	Phone: 404 563-0631
Fax #: 404 868-2201	Fax #: 404 563-0765

Cdr. Evstace,
I think the page with
comment # 19 is missing.
When I get it I will
forward.

Dan Owens

**COMMENTS ON SOIL SAMPLING AND ANALYSIS PLAN AND
GROUND-WATER MONITORING PROGRAM PLAN
NAVAL CONSTRUCTION BATTALION CENTER, GULFPORT, MISSISSIPPI
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Location Comment

SOIL SAMPLING AND ANALYSIS PLAN

1. Page 2 1.0 BACKGROUND AND PURPOSE
The workplan states that the issue is whether any contamination by residues of Herbicide Orange (HO) constituents and degradation products exists in the storage areas, and whether any contamination caused by inadvertent leakage and past vehicle servicing practices exists within the storage areas. The list of parameters for which the samples are to be analyzed does not include 2,3,7,8-TCDD, the primary constituent of concern in HO. It is recommended that some sampling and analysis be performed to determine the current extent of dioxins and furans (especially 2,3,7,8-TCDD) in the soil, since the detection limits from earlier sampling was 0.1 ppb.

2. Page 2 2.0 SOIL SAMPLING STRATEGY OVERVIEW
The workplan states that composite and discrete samples will be collected from each plot. The composites will be analyzed and the discrete samples will be archived initially. If the concentrations in the composite samples exceed any of the target action levels, then the discrete samples from that plot will be analyzed. Holding the discrete samples for later analysis may be possible for the metals which have a 6 month holding time. It will be nearly impossible for the extractable organic compounds which have a 14 day holding time to extraction.

3. Page 10 Page 2 was missing from the copy of the Soil Sampling and Analysis Plan submitted to MSDBC
Since the main focus of the sampling effort is to assess residual contamination in HSA B and C, it is recommended that assessment of HSA A be postponed until a final regulatory determination is made with regard to the ash pile. Remaining comments will not address investigation of HSA A.

4. Page 10 3.0 APPLICABLE ACTION LEVELS
Action levels must be based on the most current carcinogen slope factors (CSFs) or reference doses (RfDs) for all compounds of concern. The Integrated Risk Information System (IRIS) should be referenced as the source for CSF and RfD information, and standard exposure assumptions should be defined and used in calculation of all action levels.

5. Page 10 Compounds of concern are considered to include all hazardous constituents listed in 40 CFR 264 Appendix IX, and any omission of compounds from this list must be documented, especially since other activities in addition to storage of HO have probably taken place.

6. Page 10 Although the RCRA Facility Investigation (RFI) Guidance from May, 1989, is a good starting reference, health effects data listed in this document may be out of date.

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| 7. Page 13 | Action levels for metals should not be based on published background data. Representative site specific background samples should be collected to determine the appropriate action levels. |
| 8. Page 18 | <p><u>4.0 SAMPLING LOCATIONS</u>
Based on the description of sample grids and plots from this section and Table 2, it appears that the intent is to analyze composites consisting of up to 25 separate samples, and that resulting constituent concentrations will be compared to the action levels specified in Table 1.</p> <p>This approach is not satisfactory because resulting composites will be diluted up to 25-fold, so that significant contamination could be overlooked, and because it is very unlikely that a single homogeneous, representative sample could be produced by mixing so many subsamples together. Although compositing is an attractive alternative for the investigation of large areas, it is inappropriate to compare concentrations from such diluted samples to risk-based action levels to support a final determination of no further action.</p> <p>It would be acceptable for some compositing to be performed initially, as a means of screening the site for contaminated areas, followed by collection of discrete grab samples, as long as analytical results are compared to agreed upon screening limits, and composites are not made up of an unreasonable number of samples.</p> |
| 9. Page 21 | <p><u>5.0 SAMPLING PROCEDURES</u>
As a general preface to this section, a statement should be added indicating that all sampling will be conducted in accordance with the Region IV <u>Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual</u>, (ECSSOPQM), February 1, 1991.</p> |
| 10. Page 21 | <p><u>5.2 COMPOSITING PROCEDURE</u>
The workplan states that soil samples will be collected using plastic scoops and will be mixed in a steel bowl or foil lined aluminum tray. Plastic is not acceptable for collecting samples for organic compound analysis. Aluminum, and foil are not acceptable materials for collecting samples for metals analysis. Samples should be collected using stainless steel, Teflon®, or glass equipment.</p> |
| 11. Page 21 | <p><u>5.3 SAMPLE IDENTIFICATION</u>
Sample labels should indicate what type of analysis is to be performed on the sample.</p> |
| 12. Page 24 | <p><u>5.4 SAMPLE PRESERVATION</u>
Soil samples collected for metals and extractable organic analyses should be cooled to 4°C.</p> |
| 13. Page 24 | <p><u>5.5 SAMPLE SHIPMENT</u>
The workplan proposes shipping samples in a corrugated box. Soil samples should be shipped in a cooler so that they can be maintained at 4°C.</p> |

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| 14. Page 25 | <p><u>5.7.1 FIELD SA/OC SAMPLES</u>
Equipment rinse blanks should be collected using organic free water, not distilled water.</p> |
| 15. Page 25 | <p><u>5.7.2 FIELD CONTAMINATION REDUCTION PROCEDURES</u>
Teflon, glass, stainless steel or metal equipment used to collect samples for organic compounds and trace metals analyses should be field decontaminated using the following procedure from the ECSSOPQM:</p> <ol style="list-style-type: none"> 1. Clean with tap water and laboratory detergent using a brush if necessary to remove particulate matter and surface films. 2. Rinse thoroughly with tap water. 3. Rinse thoroughly with deionized water. 4. Rinse twice with solvent. 5. Rinse thoroughly with organic-free water and allow to air dry as long as possible. 6. If organic-free water is not available, allow equipment to air dry as long as possible. Do not rinse with deionized or distilled water. 7. Wrap with aluminum foil, if appropriate, to prevent contamination if equipment is going to be stored or transported. |
| 16. Page 27 | <p><u>7.0 SAMPLE ANALYSIS</u>
How were the constituents in Table 3 selected? See earlier comment on 2,3,7,8-TCDD. Also it would be a good idea to run an analysis for those constituents listed in appendix IX of 40 CFR Part 264, on selected samples since other activities in addition to the storage of HO have probably taken place in this area.</p> |
| 17. Pages 29-30, Table 3 | <ol style="list-style-type: none"> a. Reference 1 -- The "Statement of Work 7/88, WA-87-K026" has been replaced by ILM 0.1. b. Reference 2 -- The "Statement of Work 7/88, WA-87-K236" has been replaced by OLM 0.1. c. Reference 3 -- This reference does not appear in the Table. However, analysis should be performed for the various dioxin and furan isomers. "Statement of Work 9/86, WA-86-K357" has been replaced by RCRA Method 8290 (SW-846) and Industrial Technology Division Method 1613. |
| 18. Page 32 | <p><u>8.0 DATA ANALYSIS</u>
The data analysis seems to be inordinately complicated for defining the nature and extent of contamination on HSA B and C. The main objective of this investigation should be to determine whether there are elevated concentrations of</p> |

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GROUNDWATER MONITORING PROGRAM PLAN

20. General In general, the groundwater monitoring plan is complete. However, a comprehensive discussion of the hydrogeology on a local and regional scale should be provided, i.e., depths and thicknesses of the aquifers and confining units, lithology of the Miocene aquifer, and approximate hydraulic properties of the zones. If sufficient data are not available to define the hydrogeology of the area, a literature search and review should be conducted.
21. General Water levels in any existing wells penetrating the surficial and the Miocene aquifers should be measured during the overall measurement of water levels. Measuring wells adjacent to and off the site will aid in defining the ground water flow direction and hydraulic gradient regionally rather than only locally at the site.
22. General All the wells should be measured as close to simultaneously as possible during high and low tide to determine the amount of water-level fluctuation in the Miocene aquifer as a result of tides. The possibility exists for water-level fluctuations in the Miocene aquifer to be great enough to cause the potential vertical groundwater flow direction to reverse with the tides.
23. Pages 3,8 An off-site irrigation well located 0.5 mile from the site is mentioned in the plan (pages 3 and 8), but the exact location of the well is not mentioned or plotted on a map. The depth and location of the well should be provided. If possible, this well should be included in the determination of water levels and regional gradients.
24. Page 12 1.5 WELL INSTALLATION PROCEDURES
The well construction discussed in this section does not mention the method of determining the 0.010-inch screen slots for the shallow wells. The selection of the screen slot size and sand pack size for the shallow and deep wells should be based on site-specific sieve analysis.
25. Page 12 The well construction section of the deep wells does not discuss the length of the well screens. The screens for the deep wells should be 5 feet in length. Ten feet is adequate for the surficial aquifer wells.
26. Page 12 NCBC's plan calls for filter pack material to be placed one (1) foot above top of well screen. The Environmental Compliance Branch - Standard Operating Procedures and Quality Assurance Manual (ECSOPQAM) states that filter pack sand should extend to a minimum, two (2) feet above the top of the screen.
27. Page 13 The plan states that for installation of the deep wells into the Miocene aquifer, 8-inch diameter stainless steel casing would be installed using a 10-inch I.D. hollow-stem auger, and the bottom string of 4-inch I.D. stainless steel casing would be set in hole drilled with a 6-inch drill bit. ECSOPQAM requires that to help insure ease in installation and adequate

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| | cementing properties, all wells should be drilled to provide at least a 2-inch annular space between the outer walls of the casing and the sides of the hole. In both of the above cases, hole size would not be adequate to provide the proper annular space. |
| 28. Page 14 | The plan calls for a shallow/deep well nest to be located just north of Ninth Street (see Figure 4). This well is to be used in the aquifer testing phase of NCBC's program to evaluate potential communication between shallow aquifer and the Miocene, and will be used to determine shallow groundwater flow in the area. What effect will the location directly adjacent to the large bauxite pile create for these measurements? Though no size for the pile is given in the report, Figure 4 shows it to be at least 200 feet wide by 1200 feet long (height of the pile is not given). Impact, in terms of stored water creating a mounding effect in the vicinity of the pile, could be substantial and should be discussed. |
| 29. Page 17 | The decontamination of equipment using hexane should be changed to pesticide-grade isopropanol. Since hexane is not miscible in water the use of hexane would only be effective on completely dry equipment. If NCBC wishes to use hexane, they should document their rationale. |
| 30. Page 34 | The list of constituents on this table should be expanded to include all 40 CFR 264 Appendix IX constituents, unless specifically excluded. |
| <u>Page 34 was the last page present in the copy of the Ground-water monitoring Program Plan submitted to EPA</u> | |
| 31. Page 36 | NCBC's plan calls for well sampling frequency to consist of three (3) separate rounds of sampling, with no timetable for this sampling identified. NCBC should follow those regulations set forth for permitted facilities in the area of groundwater protection. 40 CFR 264.97(g)(1) states that the minimum sequence for groundwater monitoring consist of four (4) separate rounds of sampling conducted at intervals which assure that independent samples will be obtained. the length of the interval that should exist between testing will be dependant upon technical factors relating to the sampling itself, and properties that exist in the zone to be analyzed. Some of these aquifer characteristics should include the aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient. |

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APPENDIX A: HEALTH AND SAFETY PLAN

32. While it would be impractical for NCSO's consultant to name actual people that would fill positions, it would be helpful for them to include a generalized site organization chart that would explain the hierarchy that is to be employed to carry out the site safety plan.
33. A legible map showing the route to the hospital is needed.

APPENDIX B: ANALYTICAL METHODS

34. Since it appears to be only xerox copies of parts of the CLP Statement of Work, no comments are offered.