UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

November 18, 1998

DW-8J

REPLY TO THE ATTENTION OF:

Ms. Christine Freeman
Environmental Protection Dept.
Code 095
Naval Surface Warfare Center
300 Highway 361
Crane, Indiana 47522

RE: Draft 30% Soil Loading Batch Report
Notice of Deficiency
Bioremediation Facility SWMU 33/00
Naval Surface Warfare Center
Crane, Indiana

Dear Ms. Freeman:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the Draft 30% Soil Loading Batch Report, dated September 1998. The main problem with the document is that no raw data was submitted with the report to support the recommendation to change from 25% to 30% soil loading. The Navy needs to include documentation to show that the approved Quality Assurance Plan and the Work Plan are being followed. Documentation and validation from field and laboratory analyses are required for those plans. This data should have been included with the report. Also, soil that was used for the pilot scale test was placed in storage without retaining the location from the Mine Fill that it came from. In order to coordinate site and composting data, it is important to track where the soil came from, is stored, treated, stored, and disposed of. The
U.S. EPA will still accept this evaluation only because of the extensive analytical testing required for a pilot scale evaluation. But, the Navy contractors should be tracking any winter storage from now on. We don't have a problem with mixing excavation area soils, but they should be tracked to know where they came from.

Enclosed is a copy of our deficiencies, and a listing of the raw analytical data at a minimum that the Agency is requesting to be evaluated by us. The Navy is still responsible for the third party validation of all the data. The report should include documentation that the validation was

performed and the data is acceptable. Please submit a revised copy of this report, including an appendix binder of data, within 45 days of the date of this letter. The sooner the report can be revised and approved, the sooner the Navy will be able to shift to treatment of 30% soil loading.

We should discuss at a core call a possible modification to the plan to add picric since we know its an expected degradation product when tetryl is detectable. If you have any questions regarding this matter, please contact me at (312) 886-6146.

Sincerely,

Carol Witt-Smith
Corrective Action Expert
WMB, IL/IN/MI Section

Enclosure
Filename: NOD30Report.usn

cc: Core Team Members: Bill Gates, SOUTHDIV
Tom Brent, NSWC

Project Team Members: Brent Robertson, NSWC
Dave Beall, MK
Allen Debus, U.S. EPA

NOTICE OF DEFICIENCY COMMENTS
DRAFT 30% SOIL LOADING BATCH REPORT
DATED SEPTEMBER 1998

1. Page 1-2

   a. Spell out United States, and the acronym should read (U.S. EPA).

   b. Change "best" compost mix, to some other reference like "most economic and efficient" since several recipes performed equally but economics was a major selection reason.

2. Page 3-2

   In Appendix F, data is tabularized that shows RDX and 2,4,6TNT as increasing at the 40 and 60 day events. Add an explanation of why this is happening. Also, explain why the data increases for many parameters between days 10 and 20, and then seem to hold at that level.

3. Appendix B

   a. The graph needs to be modified that the numbers for days are directly under the data for that day.

   b. Why does the chart stop at day 50 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

   c. Raw field data sheets need to be added to support the summary table. The U.S. EPA no longer receives this data daily and it must be included in reports.

4. Appendix C

   a. The graph needs to be modified that the numbers for days are directly under the data for that day.

   b. Raw field data sheets need to be added to support the summary table and charts.

   c. Why does the chart stop at day 50 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

5. Appendix D

   a. The graph needs to be modified that the numbers for days are directly under the data for that day.

b. Raw field data sheets need to be added to support the summary table and charts.

c. Why does the chart stop at day 45 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

d. Foot note why data is not included for Days 41 and 43, and beyond Day 43.

e. Explanations should be added to explain the biological conditions of the pile. Are the slumps in the graph at Day 20 through Day 40 from a shift to pre-anaerobic conditions? There needs to be a connection to the graphs.

f. Explain if the compound increases correlate with the onset of anaerobic conditions. Or what may be causing the increases.

6. Appendix E

a. Raw field data sheets need to be added to support the summary table and charts.

b. There needs to be consistency on the significant digits used. This is a quality assurance issue. Why are 4 digits used sometimes, and 3 digits at others?

7. Appendix F

a. Why aren't the metals analysis included here and in the text?

b. The analytical data summaries and packages should have been included with the report. The Agency wants, at a minimum, the following for our independent check. The Agency could not request by specific sample numbers since we are not receiving that data. Therefore our selection are by sampling dates, and include all samples for that date.

(1) On-site and off-site analytical summaries for all parameters.

(2) The table should show the values for each of the samples and their cross-sections, the cross-section average, and the pile average. Giving the total average with no other data tells us nothing in order to evaluate reality ourselves to check that the recommendation is correct. A figure should coordinate with the tables to show cross-section locations.

(3) There should be tables also to show that the sample values compare to the three goal tables.

(4) Do not break up data summaries for a parameter from one page to the next.

(5) Complete data packages are needed for 2,4,6 TNT and RDX, for all data points, including supporting QC data and calibrations.

(6) Complete data packages for all parameters for Days 5, 10, 20, and 60 are needed. We need individual points and how MK summarized cross-sections, and pile data.

(7) An explanation why there are increases in concentration from Days 10 and 20 for nearly all the parameters should be explained.

(8) An explanation why there are increases in 2,4,6TNT and RDX after Day 20 should be added.

c. Is the increase in 1,3,5TNB possibly due to TNB forming from degradation?

d. Is ammonia or nitrate/nitrite content of the compost increasing with time?

e. Report the standard deviations for each average cross-sectional series of measurements.

f. As tetryl shows degradation, is picric acid forming? If this is possible, the plan may need modification to include picric acid testing. Picric acid leachability could be an environmental disposal issue. We need to discuss this further.

8. Appendix G

a. The table should have a summary of all the days values and then an evaluation of the % goal reached. Example:

Day 0 Concentration x Day 5 Concentration y % Reduction to Date

Day 0 Concentration x Day 10 Concentration z % Reduction to Date

Day 0 Concentration x Day 20 Concentration a % Reduction to Date

Day 0 Concentration x Day 40 Concentration b % Reduction to Date

Day 0 Concentration x Day 60 Concentration c % Reduction to Date

In this manner you can see clearly when the reduction goal is met. It also justifies the issue whether the increases in days 20, 40 or 60 are failing the reduction goal.

b. For 2,4,6TNT and RDX, the reduction values are deceptive since the values increase after Day 20. Are the reduction goals still met after that date?

c. Two copies of the Explosives summary report were included in the appendix. One should be deleted.

d. The chart should show the scatter of all the values and then line the average between dates.

e. All the explosives should have summary charts not just three of them. All the explosives are important. Also, it is important to discuss how degradation is happening and how you should see increases in some parameters as others are disappearing.

f. As tetryl shows degradation, is picric acid forming? If this is possible, the plan may need modification to include picric acid testing. Picric acid leachability could be an environmental disposal issue. We need to discuss this further.

g. From the charts and the text you are stating that all the goals are reached at Day 20. Can you effectively "freeze" the pile to make that decision, versus our issues that there are then increases and are you still meeting the goals after Day 20. Explain this.

9. Appendix H

a. The summary table is nice, but the actual data needs to be included to support the summary.

b. The chart should also correlate the samples with dates, location in pile, attach a cross section figure, etc.

c. The explosive summary report is repeated here too. Delete.