



Minnesota Pollution Control Agency

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 3, 1999

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn.: Joel R. Sanders, Code 1868
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Naval Industrial Reserve Ordnance Plant Superfund Site

Dear Mr. Sanders:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the document entitled "Navy Responses to Comments Remedial Investigation Report, NIROP Fridley, Minnesota," dated March 31, 1999 ("Navy's Responses Report"). The Navy's Responses Report is for Operable Unit 3 (OU3) of the Naval Industrial Reserve Ordnance Plant (NIROP) Superfund Site and was submitted pursuant to the Federal Facility Agreement, dated March 27, 1991, between the MPCA, the U.S. Environmental Protection Agency (EPA), and the U.S. Navy (Navy).

The MPCA staff hereby modifies the Navy's Responses Report pursuant to Attachment I of this letter. As Attachment I indicates, the MPCA staff agrees with many of the Navy's responses; however, the staff cannot agree with other responses.

For the Navy, the regulators and the public, the OU3 Remedial Investigation Report and Risk Assessment ("Report") must clearly describe the magnitude and extent of the contamination and the risks associated with that contamination. The Report must clearly identify the contaminants of potential concern (COPCs) screened and clearly identify which of those COPCs were subsequently retained as contaminants of concern (COCs) for the Feasibility Study (FS) and why they were retained. In addition, the Report must clearly identify what OU2 and OU3 areas need remediation.

Some of the major reasons that the MPCA staff cannot agree that the Report is complete and that the Navy is ready to begin the Feasibility Study are:

1. the Report does not clearly identify OU2 and OU3 areas that need remediation;

Mr. Joel R. Sanders

June 3, 1999

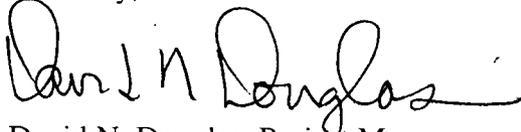
Page 2

2. the Report does not clearly identify a set of COCs for all affected media;
3. although the Navy has identified additional ground water COCs, the Navy apparently does not agree to update the OU1 Risk Assessment for the new ground water COCs;
4. even though the Navy agreed to meld the Remedial Investigation and Remedial Action phases of OU2 and OU3, the Navy does not agree to update the OU2 Risk Assessment (for the unsaturated zone) with risk assumptions used for OU3 even though the industrial land use scenario postdates the OU2 Risk Assessment;
5. although the Report identified a preliminary list of remedial technologies, the Report does not identify where these remedial technologies would be applied;
6. the Report does not address the volatile organic compounds at high concentration in certain monitoring wells beneath the building; and
7. the Report does not include any potential remedial alternatives to address sources beneath the building.

It may be that most of the issues that need resolution are issues related to report clarity and documentation. Perhaps there are some conceptual issues that need further development and discussion. In order to attempt to resolve issues, the MPCA staff proposes a comment resolution meeting with the Navy and EPA as soon as possible, perhaps the day before the next NIROP partnering meeting as the next step.

If you have any questions regarding this letter, please contact me at (651) 296-7818.

Sincerely,



David N. Douglas, Project Manager
Superfund/RCRA Unit I
Site Remediation Section
Metro District

Enclosures

cc: Thomas Bloom, U.S. Environmental Protection Agency (w/enclosure)
Mark Sladic, Tetra Tech NUS, Inc. (w/enclosure)
Kerry Morrow, U.S. Navy (w/enclosure)

Attachment I

Modifications to the document entitled “Navy Responses to Comments Remedial Investigation Report, NIROP Fridley, Minnesota”

Dated March 31, 1999

The following numbering system is the same as found in the “Navy Responses to Comments Remedial Investigation Report, NIROP Fridley, Minnesota.”

MPCA I.1

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

For the Navy, the regulators and the public, the Remedial Investigation (RI) Report must clearly identify the magnitude and extent of the contamination. The RI Report must clearly identify the contaminants of potential concern (COPCs) screened at the beginning of the RI and clearly identify which of those COPCs were subsequently retained as contaminants of concern (COCs) for the Feasibility Study (FS) and why they were retained. The FS needs to address potential remedies for COCs, not COPCs. Based on the data reported, the ARARs, the To Be Considereds (TBCs), and the risk assumptions, the MPCA staff believes that it is likely that most of the COPCs will not be retained as COCs for the FS. The MPCA staff anticipates that the FS for of Operable Units 2 and 3 (OU2 and OU3) will be of limited scope. Therefore, it is essential for the RI Report to leave a clear administrative record as to the basis for the COCs and the magnitude and extent of the COCs.

At a minimum, the MPCA staff requests that the executive summary include four tables or references to four tables: one for the COPCs for the soil in unsaturated zone of OU2 and OU3; one for the COPCs for ground water of OU3 (includes the saturated zone of OU3); one for the COCs for the soil of unsaturated zone of OU2 and OU3; and one for the COCs for ground water of OU3 (includes the saturated zone of OU3). Also the staff requests that the executive summary include figures or maps or references to figures or maps that show the extent of the COCs for the unsaturated zone of OU2 and OU3 and the ground water of OU3. We note that some of these tables exist, however, labeling of these tables should be consistent with this request.

Also please note that none of the essential nutrients listed were actually eliminated from the initial list of COPCs because the site concentrations exceeded the values utilized as background levels.

MPCA I.2

The MPCA staff cannot agree with the response. The MPCA staff again requests that the Navy comply with the original modification.

Dividing the areas of concern (AOCs) into seven groups of facility operations at the start of the RI is consistent with reporting any association with facility operations in the RI Report. The Navy did find that the plating operations in the East Plating Room led to releases of COCs. Now the Navy needs to discuss the other facility operations and release mechanisms. If the findings do not establish a pattern relative to the six other groups of facility operations or release mechanisms, then this finding needs to be reported in the RI Report.

The Navy and the regulators understood at the beginning of the OU3 RI that some of the operations have moved, but some have not. The moving of facility operations did not prevent the Navy and the regulators from identifying AOCs that could be representative of facility operations. Again the administrative record needs to be made complete as to what conclusions can be made relative to facility operations and release mechanisms. If the conclusions are that only a small set of facility operations or release mechanisms are associated with releases, then this needs to be articulated in the RI Report.

MPCA I.3

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff requests changing “cursory review” to “screening evaluation” and adding a brief description of how the screening assessment was conducted. For example, a screening evaluation of the ground water was conducted that consisted of comparing the maximum detected concentration of a chemical in unfiltered groundwater samples to applicable standards (e.g., Minnesota Department of Health Risk Limits /Health Based Values (HRLs/HBVs), federal MCLs, etc.). Also the evaluation included a “mixtures” evaluation as required by Minnesota Rule. The evaluation utilized the standard drinking water evaluation spreadsheets provided by the MPCA staff.

MPCA I.4

The MPCA staff agrees, in part, to the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

There appears to be considerable misunderstanding about what the MPCA staff is requesting here. The staff is not requesting that three worker scenarios be applied to the saturated zone of OU2. The staff is requesting that the three worker scenarios be applied to the unsaturated zone of OU2 and that the risk assessment be conducted with the same procedures as were followed for OU3. Also since the OU2 Risk Assessment was completed, the future land use scenario for the Site has been established to be industrial land use. This land use scenario applies to the entire facility not just one portion of it.

The Navy has not made a compelling argument to not assess risks in OU2 and OU3 based on the same set of risk assumptions. Remedial alternatives for these operable units may well be the same. This matter must be resolved and addressed during the RI so that the FS may proceed in a

meaningful and expeditious manner. The Risk Assessment must clearly indicate what the risk assumptions are for both operable units.

This MPCA staff position is consistent with the following that is quoted from the Site Management Plan (SMP), dated May 11, 1999, first paragraph, page 3:

[T]he Navy, USEPA, and the MPCA have agreed that combining the **investigation and remediation** [emphasis added] of on-site source areas located both outside of and beneath the NIROP manufacturing building will be the most efficient overall management strategy for the NIROP. This change in management strategy was prompted by results obtained from preliminary on-site investigation of subsurface source areas beneath the NIROP manufacturing building...A decision that it will be more effective to address remedy selection for both OU 2 and OU 3 concurrently was made.

In other words, the clear SMP strategy is to combine the remedial investigations and the remedial actions for these two operable units. That means that the risk assessments need to be consistent.

MPCA I.5

The MPCA staff cannot agree with the response. The MPCA staff again requests that the Navy comply with the original modification.

The rationale for the request is consistent the following statement from the Site Management Plan, dated May 11, 1999, first paragraph, page 4:

Prior investigations conducted at the site indicate that the subsurface source areas in both OU 2 and OU 3 are likely contributing to the groundwater contamination detected in OU 1.

In reality, contaminated ground water from NIROP is contaminated ground water no matter to which operable unit it may be administratively assigned for purposed of conducting RI work. The saturated zone of OU3 contains contaminated ground water that flows out from under the main NIROP building to become the contaminated water of what is known as OU1. All of the OU3 COCs in the saturated zone have contaminated NIROP ground water. It is appropriate for the Navy to include an updated risk assessment of ground water in the OU3 Risk Assessment, which will become an updated risk assessment of OU1. Ironically the rationale cited above is consistent with the "decision statement" cited in Section 4.2 of the OU3 RI/FS Work Plan, dated May 31, 1988 (also cited in the item to which the Navy responds in its response identified as "5b.")

MPCA I.6

The MPCA staff agrees with the response.

MPCA I.7

The MPCA staff agrees with the response.

MPCA I.8

The MPCA staff cannot agree with the response. The MPCA staff again requests that the Navy comply with the original modification.

In a recent conversation with Tim Ruda, Tim stated that it is the storm sewer, not the sanitary sewer, which appears to not leak based on his estimates of inflow and out flow during precipitation events. According to Tim Ruda, no leak tests have been conducted on the sanitary sewer.

The Navy has not explained why it is impractical to at least televise the 15-inch sanitary sewer line. A leaking sanitary sewer would likely continue to provide a mechanism to enhance the release of COCs. The Navy has not provided a compelling reason for asserting that the spatial coverage of the AOC samples would resolve the issue of whether or not the sanitary sewer is or is not leaking.

MPCA I.9

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The ultraviolet (UV) test is not the only evaluation tool for determining the potential for DNAPL. Three positive UV tests were observed in the OU3 RI. For all three areas the potential for dense non-aqueous phase liquids (DNAPL) was ruled out by the Navy because the analytical results did not indicate "benchmark criteria." It is not certain what benchmark criteria was used to evaluate the tests.

Ground water data from several of the intermediate wells indicate very high trichloroethylene (TCE) levels that suggest the potential for the presence of DNAPL in the intermediate zone beneath the building. Apparently there were no positive UV screening test results in the soil samples from this area. Negative UV screening tests were found in areas where ground water results suggest the potential for DNAPL. The uncertainty associated with this test should have been discussed, but was not discussed. The staff request that this matter be corrected in the RI Report.

In addition, those areas where the UV screening test was negative, but ground water levels of TCE were very high, the potential for DNAPL in these areas should have been discussed. The staff request that the text be modified to include discussion of areas of potential DNAPL based on ground water data as well as the UV screening test. The text should be modified to include discussion of all areas where data suggests the potential for DNAPL to be present. The potential

presence of DNAPL beneath the building should be considered in OU3 and OU1 remedy decisions.

MPCA I.10

The MPCA staff agrees with the response.

MPCA I.11

The MPCA staff agrees with the response.

MPCA I.12

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff agrees that the use of the OU2 RI Report background levels was approved. The basis of the approval was that the contents, including the background levels, of the OU2 had been previously approved by the MPCA staff and the site team members decided not to reverse that decision. The approval was not based on concurrence that the reported OU2 background levels represent natural background at the site or that the methods utilized to develop background levels were appropriate.

MPCA I.13

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff accepts the response, but requests that instead of the term “benchmark” the phrase “applicable drinking water criteria” be utilized to minimize confusion for the reader. The MPCA staff agrees that a definition or explanation of the criteria utilized is desirable. A definition or explanation of the individual criteria (e.g., HRL) is already contained in Section 6.4.3.

MPCA I.14

The MPCA staff agrees with the response.

MPCA I.15

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA agrees with paragraph 1, but cannot agree with paragraph 2. The staff cannot agree that monitoring wells MS-31I and MS-31D are screened in representative aquifer material. The

MPCA staff will not use data from either of these wells to characterize ground water conditions at the Site.

MPCA I.16

See MPCA I.1.

MPCA I.17

The MPCA staff agrees with the response.

MPCA I.18

The MPCA staff agrees with the response.

MPCA I.19

The MPCA staff agrees with the response.

MPCA I.20

The MPCA staff agrees with the response.

MPCA I.21

The MPCA staff agrees with the response.

MPCA I.22

See MPCA I.2.

MPCA I.23

The MPCA staff agrees with subparts a - g and i.

Regarding MPCA I.23h., the Navy is correct in stating that the methane sampling procedure was described in Table 4-1 of the approved OU3 Work Plan. For future reference, this procedure is likely to yield inaccurate methane readings for two reasons. First, methane is biodegradable, so without preservative, it will biologically decompose in the water sample within hours or days of collection. Second, methane can escape screw cap vials due to its volatility. Thus, methane will likely be gone from the sample by the time it is analyzed. (EPA's Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater describes the methodology for collecting and analyzing methane samples). The MPCA staff requests that the Navy revise this narrative accordingly.

MPCA I.24

See MPCA I.1 and I.4.

MPCA I.25

The MPCA staff agrees with the response.

MPCA I.26

See MPCA I.1 and I.4.

MPCA I.27

The MPCA staff agrees with the response. However, it is the federal Superfund law that requires consideration of TBCs, even though the TBCs may be based on the state Superfund requirements.

MPCA I.28

See MPCA I.1.

MPCA I.29

The MPCA staff agrees with the Navy's response. However, televising the sanitary sewer line will verify that there are no mechanisms to drive contaminants from the unsaturated to the saturated zone. Also while the MPCA staff agrees that the Navy cannot quantify the gravitational mass transfer of contaminants to ground water, the text should cite that this pathway is still a feasible one.

MPCA I.30

The MPCA staff agrees with the response.

MPCA I.31

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff agrees with MPCA I.31a, b, c, and d.

The MPCA staff cannot agree with item e and has requested that the sanitary sewer be televised and cleaned if necessary.

MPCA II.1

1a. The MPCA staff agrees that the sampling data was reported in Appendix E. However, since COPCs were determined based on whether they were detected, the MPCA staff requests the inclusion of an evaluation of the adequacy of the detection limit in the main text of the report. Based on information provided in Appendix E, the detection limits in soil, in general, are adequate for depths less than 12 feet. Some detection limits for soil at depths greater than 12 feet were not adequate (e.g., detection limits for volatiles ranged from 1.5 to 7.2 mg/kg). The detection limits for groundwater are not adequate for several chemicals, e.g., vinyl chloride (detection limit exceeds the HRL of 0.2 µg/l) and cPAHs (detection limit exceeds the HBV of 0.05 µg/l).

1b. The MPCA staff agrees with the response.

MPCA II.2

The MPCA staff agrees with the response.

MPCA II.3

See MPCA I.4.

MPCA II.4

4a. See MPCA I.8.

4b. The MPCA staff agrees with the response.

MPCA II.5

The MPCA staff agrees with the response. The MPCA staff provided this response for future reference. See MPCA I.12.

MPCA II.6

6a. The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained.

Since COPCs were determined based on whether they were detected, the MPCA staff requests the inclusion of an evaluation of the adequacy of the detection limits in the main text of the report. A discussion regarding the potential impact on the estimated risks should be included in the uncertainties section of the report.

6b. The MPCA staff agrees with the response.

MPCA II.7

7a. The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA is aware of the rationale and repeats the request made by the original comment, i.e., that the rationale placed in the RI Report text. The reader of the report will not be aware of communications between MPCA staff and Tetra Tech NUS, Inc. staff and therefore the rationale must be stated in the report.

The response did not address the second point of the MPCA staff comment, i.e., the size of the potential exposure area represented by the sampling points should be discussed.

7b. The MPCA staff cannot agree with the response.

Helen Goeden was contacted on July 22, 1998, and approved the use of the depths for the purpose of the risk evaluation. The response is in regard to an evaluation to assist in determining the necessity of institutional controls regarding disturbance of soil not an evaluation to determine risk per se. The MPCA staff performed this evaluation. Please contact Helen Goeden for more details about this evaluation for incorporation into the report.

7c. The MPCA staff accepts the response and requests that this explanation be incorporated into the text of the report.

MPCA II.8

The MPCA staff agrees with the responses.

MPCA II.9

9a. The MPCA staff review response did not require a Navy response but was for informational purposes. The acceptable risk is not adjusted to correspond to the exposure duration but is adjusted in an attempt to address dose rate concerns. The lower risk level is only applied to short term exposure scenarios where the dose rate is much higher than the chronic exposure scenario such as is the case with the Major Construction Worker.

9b and c. The MPCA staff agrees with the responses.

MPCA II.10

The MPCA staff agrees with the response.

MPCA II.11

The MPCA staff agrees with the response.

MPCA II.12

The MPCA staff agrees with the response. Also see MPCA II.7b.

MPCA II.13

The MPCA staff agrees with the response.

MPCA II.14

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff has obtained a complete copy of Appendix G. Arsenic does not seem to have been dealt with in a consistent manner for the various portions of the aquifer. Arsenic contributes to the cancer risk in the upper and lower portion of the unconfined aquifer but it is only mentioned in the text for the lower portion.

The HRL for manganese is under review and the interim value being utilized is 1000 µg/l. Use of this value would result in eliminating manganese from "Deep Aquifer" column of Table 6-8 (as a COC for ground water).

MPCA II.15

See MPCA I.28.

MPCA II.16

The MPCA staff agrees with the response.

MPCA II.17

See MPCA I.4.

MPCA III.1

The MPCA staff cannot agree with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

Discussion of mobility of compounds due to the presence of volatiles must be done to ensure that all COPCs are identified and evaluated.

MPCA III.2

The MPCA staff agrees with the response.

MPCA III.3

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff requests that the Navy discuss the impact of low metal recoveries in the uncertainties analysis of the Risk Assessment (Section 6.6).

The MPCA staff agrees that the National Functional Guidelines state that recoveries for spikes that are above 30 percent but below 75 percent are flagged "J" for concentrations above the CRDLs and UJ for nondetects. The Agency takes issue when a number of samples show poor recoveries. This indicates a low bias for the sample. Additionally, a recovery of less than 50 percent for metals can be considered poor chemistry when standard matrices are being analyzed. As noted in Section E, number one of the NFG, "...professional judgment exercised by the data reviewer when evaluating the data". Spikes are the only test done on the actual sample matrices for metals analysis that indicates if the digestion and analysis are producing a correct concentration for the sample.

Also the MPCA staff notes that the Laboratory Control Samples must have recoveries above 50 percent. Where there any LCS recoveries out of the required 80-120 percent window?

MPCA III.4

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

Was precision and accuracy discussed in the summary in a method that allowed easy understanding of the QA data?

MPCA III.5

The MPCA staff agrees, in part, with the response. The MPCA staff again requests that the Navy comply with the original modification as more fully explained below.

The MPCA staff notes for the record that the seven step DQO process was not used on the NIROP Site, but a scientific method was used for designing the sampling network. Were all the DQOs met?

MPCA III.6

The MPCA staff agrees with the response.

MPCA III.7

The MPCA staff agrees with the response.