



Minnesota Pollution Control Agency

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

June 18, 2001

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

RE: Naval Industrial Reserve Ordnance Plant Superfund Site

Dear Mr. Sanders:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the DQO meeting notes from the file entitled "FridleyDQOThursday-TEJ-r2.doc," (DQO Meeting Notes) emailed to me on June 4, 2001. The DQO Meeting Notes are for the Naval Industrial Reserve Ordnance Plant (NIROP) Superfund Site and were submitted pursuant to the Federal Facility Agreement, dated March 27, 1991, between the MPCA, the U.S. Environmental Protection Agency (U.S. EPA), and the U.S. Navy (Navy).

The MPCA staff would like to express its concerns about the DQO process to date. The MPCA staff believes that the current DQO process is at odds with our partnering process and our understanding of how the DQO process was to work.

The first concern is that versions of the meeting notes keep changing without prior input from and agreement by the MPCA staff (or to our knowledge, U.S. EPA). While the MPCA staff understood that additional work was needed to develop a statistical strategy for the pilot study, the Navy has continued to make other changes without our input or agreement. Conference calls have taken place to resolve issues without our input or agreement. The first version of these notes was handed out on March 23rd. Based, in part, on partnering team feedback received on March 23rd, the second version was developed in a file entitled "FridleyDQOThursday-TEJ-r1.doc," emailed to me on April 9th. The most significant change in this version is the addition of Attachment 1. The non-statistical discussion in the second version of the notes was never approved beforehand by the partnering team. The third version of these notes entitled "FridleyDQOThursday-TEJ-r2.doc" was emailed to me on June 4th. This version contains modifications to the statistical approach, but also contains additional non-statistical changes. In addition at least the third version now contains new subjects that were not even topics of discussion at the DQO meeting, e.g., ground water monitoring strategy that was to be discussed in the upcoming DQO meeting.

The second concern is that the Navy continues to ignore the limits placed on the use of DEFT software (as more fully articulated in Attachment I to this letter) and as I articulated in Charleston. Tom Johnston acknowledged these limits and I thought that my articulation of this matter would be addressed in the notes. It was not.

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The DEFT software cannot be used because the statistical assumptions for using it have not been met. The MPCA staff cannot agree to any statistical method for which the statistical assumptions of the method cannot be met.

The MPCA staff requests that the Navy use a non-parametric statistical approach as articulated in Attachment I to this letter. If the Navy cannot find an appropriate non-parametric statistical approach, we request that best professional judgement be used for evaluating the success of the pilot study.

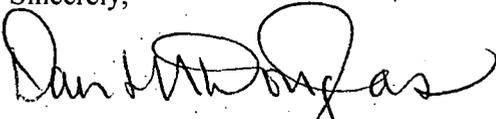
The third concern is that the DQO meeting notes appear to attempt to modify the wording of the Record of Decision (ROD). While this may not be intended, the wording of the ROD, e.g., cleanup goals, cannot be changed without going through the formal Superfund process for changing RODs. A change in cleanup numbers is so significant the change would need public comment before the change could be made. While the MPCA staff may support certain DQO decision statements, the staff does not have the authority to modify the wording of a ROD. The team needs to address this issue in the DQO process. For example decision statements could indicate that before success on the pilot study can be declared, the ROD needs to be changed to incorporate a new site cleanup goal or goals.

The fourth concern is that the MPCA staff did not have enough time at the end of the Charleston DQO meeting to fully evaluate the notes. For example, concerns about decision rules involving waivers as articulated in Attachment I to this letter did not occur to us until we reread the notes and discovered that the notes confuse the ALC discussion in the ROD with the MPCA variance process regarding surface water standards.

After further consideration of the problems sited above and the MPCA's current ban on travel after June 30th, the MPCA staff requests that the Navy not proceed without the MPCA staff at Pittsburgh. It is unfortunate that we cannot commit to the Pittsburgh meeting, but the circumstances are beyond our control. The situation will become clearer in the next few weeks and we propose that the meeting be rescheduled at that time. The MPCA staff hereby modifies the DQO Meeting Notes pursuant to Attachment I to this letter for incorporation into the updated DQO notes that will be produced at the Pittsburgh meeting.

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

Sincerely,



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

DND:csa

cc: Thomas Bloom, U.S. EPA (w/enclosure)
Mark Sladic, Tetra Tech NUS, Inc. (w/enclosure)

Attachment I

Modifications to the Document Entitled "FridleyDQOThursday-TEJ-r2.doc," (DQO Meeting Notes) Emailed to the MPCA Staff on June 4, 2001

I. General Section

DQO Meeting Attendees

1. Second Note

The MPCA staff requests that the second note be revised to document all previous versions of these notes. It is incorrect to state that these notes reflect the March 23rd meeting.

2. Changes based on the May 24th Teleconference

The MPCA staff can not accept any changes to the notes made as a result of the May 24th conference call as these changes have neither been discussed with nor agreed to by the U.S. EPA or MPCA NIROP partnering team members.

DQO Step 1. State the Problem

1. Paragraph 3

The MPCA staff requests that the Navy not strike out the original language about the ROD, but strike the second sentence. The ROD speaks of "...hydraulic containment and recovery of all future contaminated ground water." (See page 2 of the Declaration.) The ROD is not ambiguous about the degree of containment required. Until the ROD is formally changed to read otherwise, the ROD requirements for containment stand and cannot be changed by these or any other meeting notes alone.

2. Paragraph 4

The MPCA staff requests that the first sentence be changed to read, "In the five-year review, the review speaks of "substantial" containment." A Five-Year Review cannot change the wording of a ROD, nor is it intended to. Until the referenced hydraulic containment language from the ROD is changed in an appropriate document, the ROD requirements remain unchanged.

3. Paragraph 11

The MPCA staff requests that the Navy strike the third sentence. The ROD makes no representation regarding what the capture system may or may not be able to capture from any source area and makes no representation that any contamination "will" remain on the site. Also the Navy's ground water modeling output does not substantiate this statement.

II. Problem A: Anoka County Park (ACP) Volatile Organic Compound (VOC) Reduction Pilot Study

DQO Step 1. State the Problem

1. Third (Highlighted) Paragraph

The MPCA staff requests that the Navy change the third sentence from "...vegetable oil technology is not required to..." to "...vegetable oil technology may not..."

2. Paragraph 7, Past Data

The MPCA staff requests that the Navy delete the third sentence. Based on the MPCA staff review of the 2000 AMR, the same sampling method was not used for the last two sampling rounds.

3. Last Paragraph (Third Note)

The MPCA staff requests that the sentence and the data above the sentence be deleted from the notes. The MPCA staff cannot accept the data from the October 2000 sampling event. (See MPCA staff letter dated June 1, 2001.) Therefore, the MPCA staff cannot accept the comparison shown above this paragraph.

4. Assumption

The MPCA staff requests that the Navy change the sentence from "Under any circumstances, the..." to "The technology..." The clause "Under any circumstances" is ambiguous. The MPCA staff must be involved in decisions about what the Navy may consider for the technology.

DQO Step 3. Inputs to the Decision

1. Paragraphs 4 and 5

The MPCA staff requests that the Navy delete these paragraphs. After further review of the data generated by the low-flow method (October 2000 sampling event) submitted after the Charleston meeting and further consideration of the limits of this method, the MPCA staff believes that the low-flow method is not an acceptable method for the pilot study. The MPCA staff believes that the low-flow method is not acceptable because the method produces results that are not consistent with the goal of the selected remedy cited in the Record of Decision (ROD). The ROD states that "[t]he ultimate goal [of the selected Operable Unit 1 remedy] is to restore the ground water quality in the unconsolidated aquifer at the site to the Maximum Contaminant Levels (MCLs)." (See section 9, page 35.) Moreover, the ROD says that "...the MCL for TCE (5 ppb) will serve as the target cleanup goal for ground water for the site." (See section 10.1, page 44.)

The ground water sampling method that has used has been to meet the ROD goal is the purge and sample method. That is, the purge and sample method was approved the MPCA staff because it is the method that best evaluates whether the ground water meets the MCLs, e.g., best evaluates what the TCE concentration would be if the ground water well were a drinking water production well. Unlike the purge and sample method, the low-flow method provides results that are representative of only a short screened interval in the adjacent aquifer zone rather than the larger aquifer zone around the screened interval as well as the zone above and below the screened interval. The objective of the pilot study is to reduce the TCE concentration in the NIROP site aquifer, not in specific zones of the screened interval of the study wells. In summary, the best method to evaluate the effect of the pilot study on meeting the goal of the selected remedy is the purge and sample method.

DQO Step 5. Develop a Decision Rule

1. Second Assumption

The MPCA staff requests that the Navy change the second sentence to read "The treatment technology may be considered for use in NIROP source areas (i.e., underneath building)." The remainder of the original sentence is ambiguous.

2. Third Paragraph

The MPCA staff requests that the 2000 ground water data be dropped from the analysis and that the analysis be revised based on the 1997, 1998, 1999, and 2001 data. Consistent with the discussion above, the analysis is good only for data collected by the purge and sample method.

The MPCA staff requests that the Statistical and Action Levels chart be changed to include cis- and trans-DCE. If these DCE isomers were not specified in previous years, the NIROP team will need to determine what is the acceptable way to proceed. One option is to sample for cis- and trans-DCE in a select group of wells for an agreed-upon number of sampling events before vegetable oil injection.

The regulatory limit for cis-DCE is 70 ppb; for trans-DCE it is 100 ppb; and for vinyl chloride it is 0.18 ppb. These regulatory limits are the surface water standards for the Mississippi River, MCLs, and are the appropriate regulatory limits for the compliance wells nearest the river. The MPCA staff requests that the table, table notes, and the remainder of the discussion (decision rules, notes, questions, issues) of DQO Step 5 be changed accordingly.

3. Decision Rules, General Response

The MPCA staff requests that the Navy change the rules by including both DCE isomers in the decision rules because the isomers have different surface water standards.

4. Second Decision Rule

The MPCA staff requests that the decision rule be changed from "...then petition for a variance to establish ACLs (Alternate Concentration Limits) AND evaluate..." to "then evaluate..." The way the rule is currently worded, it implies that the MPCA staff would agree to evaluate a variance to the surface water standards if the pilot study was not a success. The MPCA staff cannot agree to this.

Also, the MPCA staff requests that this decision rule be re-written based on the discussion below.

The MPCA staff believes that the term "Alternate Concentration Limit" cited in the second decision rule may be associated with David Maschwitz's discussion related to achieving compliance with MPCA Water Quality Standards at the line of ground water monitoring wells in the park nearest the Mississippi River. This discussion occurred during the drafting of the Five-Year Review, dated October 27, 1998. David was referring to the ability of the Navy to apply for a variance to the appropriate MPCA Water Quality Standards as applied to the NIROP site pursuant to Minn. R. pts. 7050.0190 and 7000.7000. The Navy would apply for a variance after the Navy attempted to remediate the ground water contamination in the park. Such a variance request would have to be evaluated by the MPCA staff and would have to be approved by the MPCA Board. The Navy and U.S. EPA can testify before the Board in support or opposition to an MPCA staff recommendation to the Board.

The term "Alternate Concentration Limit" (ACL) is formally cited in the ROD and relates to the goal of reducing the ground water concentrations at the NIROP site to the target cleanup goal of 5 ppb TCE. The ROD says that "[i]f at some time in the future, the Navy believes that achieving the target [TCE] cleanup level (MCL) is technically impracticable, at that time the Navy will attempt to apply for an Alternative Concentration Limit (ACL) in accordance with the guidance for implementation of ACLs. The Navy plans to use a mathematical formula to determine if concentrations have dropped to an asymptotic level. This asymptotic level will be used to show technical impracticability." Any change to this language would need to be acceptable to the U.S. EPA, MPCA, and the Navy under the FFA. This is a different process than the variance process cited above.

The second decision rule as currently written is not consistent with the above-cited ROD language. The decision rule goal is to reach a certain Contaminant of Concern (COC) concentration in a specified time regardless whether or not any achieved reduction in concentration has reached "asymptotic conditions." The decision rule, per se, does not have the effect of modifying the above-cited ROD language. Asymptotic levels for the NIROP site as a whole are not the focus of this decision rule.

If the Navy received a variance to the MPCA Water Quality Standards, what bearing would it have on ACL language from the ROD? The MPCA Water Quality Standards are not specifically designed to return aquifers to potability. All of the issues identified above need to be resolved before the MPCA staff can accept this decision rule.

5. Assumption

The MPCA staff requests that this assumption be re-written as follows, "The Navy's request for a variance to the appropriate MPCA Water Quality Standards as applied to the NIROP site pursuant to Minn. R. pts. 7050.0190 and 7000.7000."

6. Third Decision Rule

The MPCA cannot accept the changes to this decision rule without agreeing to a technical basis for the new language. The MPCA staff requests that the Navy identify the technical basis for the new language. What is the relationship between the two-year and the five-year windows?

7. Issue

The MPCA staff requests that this issue statement be re-written as follows, "The MPCA staff's reaction to Navy's request for a variance to the appropriate MPCA Water Quality Standards as applied to the NIROP site pursuant to Minn. R. pts. 7050.0190 and 7000.7000 won't come until years down the road. It is not clear at this time how the 1,000 ppb TCE level cited in these rules relates to a variance concentration at the line of compliance wells nearest the river."

8. Last Paragraph

The MPCA staff response to this paragraph can be found in its discussion regarding the sampling strategy for this problem.

DQO Step 6. Establish Error Tolerances

1. General Response Regarding DEFT Statistical Assumptions

At the Charleston meeting, I made the NIROP team aware that when using DEFT software, DEFT software statistical assumptions must be met. I read, as follows - in bold type, from the document entitled, "User's Guide for the Data Quality Objectives Decision Error Feasibility Trials (DQO/DEFT) Software, EPA QA/G-4D, dated February 2000 (but include the complete citation as follows):

"What statistical assumptions does DEFT make?"

For the sample cases, it is assumed that the action level is fixed (i.e., the action level is a known quantity) and that there is only one infinite (or extremely large) population. For the two sample cases, it is assumed that both sample sizes are large and that the variability of the two populations are approximately equal. **The DEFT software also assumes that that sample location can be randomized and there are no temporal issues. For example, DEFT is not designed to be used for cases where drinking water samples are collected from wells whose locations were selected based on hydrogeology instead of selected randomly.**

The MPCA staff requests that the bolded quote that I read at the Charleston meeting be added to the meeting notes.

At NIROP, the sample locations were not randomized and there are temporal ground water issues in the park, e.g., possible declining TCE ground water concentrations in the park. The hydrogeology in the park is not homogeneous and the ground water wells locations were selected based on the site hydrogeology. Therefore, the DEFT statistical assumptions have not been met. Therefore, it is not appropriate to use DEFT software for this site problem.

The MPCA staff requests that the Navy delete the present narrative in this section and delete Attachments 1 and 2 (including the Data Use Logic Decision diagram). Instead of the overall statistical approach cited in Attachment 1, the MPCA staff requests that the Navy propose for MPCA staff review an appropriate non-parametric statistical approach. The non-parametric approach is insensitive to variability in the data. Appropriate use of non-parametric methods eliminates the need for statistical assumptions. It also reduces concerns about the validity of a three-point technique versus using more than three points.

2. Second Action Item

The MPCA staff requests that the Navy delete this item and re-write it, if necessary, after the NIROP partnering team has discussed this action item further. The MPCA staff cannot accept trend analysis based on "...the well showing the greatest reduction in TCE concentration..."

III. Problem B: Effectiveness of Capture Well System

DQO Step 2. State the Decision

1. Potential Actions, First Statement

The MPCA staff requests that the Navy re-write the second bullet as follows, "Optimize the system to maintain effective ground water capture."

2. Decision Statement

The MPCA staff requests that the Navy change the statements to the following:

"If it is, continue to operate the system;

If it is not, evaluate and enhance the system."

DQO Step 4. Define the Study Area Boundaries

1. General Comments at the Beginning of Section

These notes are ambiguous. The MPCA staff requests that these comments be changed to the following comment, "The Navy is responsible only for the NIROP site ground water plume. The boundaries of the NIROP plume need to be defined."

2. Assumption

The MPCA staff requests that the “assumption” be identified as a “note.”

3. New Assumption

The MPCA staff requests that an assumption be added to the notes as follows: “The possible flow of contaminated ground water from the North 40 has not been adequately evaluated and may need to be captured by the newly upgraded ground water capture system.”

4. Note

The MPCA staff requests that this note be deleted. The contents of this note were not discussed in Charleston and the note does not appear in the original meeting notes and is not highlighted in either the second or third version. This is a new topic that was an agenda item for the future DQO meeting.

5. Temporal Boundary

The MPCA staff requests that this item be deleted. Source removal is not currently identified as a remedy for the NIROP site. Ground water pump and treat is not a source removal remedy.

6. Last Issue, Last Sentence

The MPCA staff requests that this sentence be deleted. The sentence is ambiguous and does not add anything to this issue.

DQO Step 7. Optimize the Design

1. General Response

The MPCA staff requests that the term “small group” be replaced by the term “technical subcommittee” and the narrative of this section be modified accordingly.

IV. Problem C. Overall Contaminant Reduction at NIROP

DQO Step 2. State the Problem

The MPCA staff requests that the Navy not proceed further with regard to this item until the problem identified for the second decision rule of Step 5 of Problem A as discussed above be agreed to by the NIROP partnering team.