

**RESPONSES TO EPA REGION 5 COMMENTS CONCERNING THE REMEDIAL ACTION WORK
PLAN, NAVAL INDUSTRIAL RESERVE ORDNANCE PLANE, FRIDLEY, MINNESOTA
(09-02-05)**

GENERAL COMMENTS AND RESPONSES

1. The RAWP appears to present incomplete redline strikeout information. For example, in QAPP Tables A6-2 and A6-3, the method detection limits (MDLs) and reporting limits (RLs) have been changed from those provided in a previous version of the RAWP. However, from the list of revisions it was not possible to determine if these values were supposed to be changed since the previous values are not presented as redline/strikeouts. The only way to determine if these and other similar changes were made is to compare the previous and current versions of the RAWP, which defeats the purpose of presenting redline/strikeouts. Please note, these are examples of this type of discrepancy, and several other similar inconsistencies were also noted elsewhere in the RAWP (e.g., QAPP Table A6-1, RAMP, etc.). The 2005 RAWP or a related submittal should clearly present all appropriate redline/strikeout changes.

Response 1:

Tables A6-2 and A6-3 are entirely new, as the information is laboratory specific. The MDLs and RLs should be reviewed on their own merits, not based on changes from the prior laboratory's characteristics. No action is proposed.

2. The QAPP indicates that the laboratory has been changed from EnChem to Columbia Analytical Services (CAS). However, it is unclear if CAS has the proper certifications (Navy, State of Minnesota, etc.), if they have passed any/all necessary laboratory audits, if they have received acceptable results on performance evaluation samples, etc. The QAPP should either be revised to address these concerns or some other relevant documentation should be provided for review. In addition, all applicable standard operating procedures and the CAS Quality Assurance manual should be provided for review.

Response 2:

Appendix A of the referenced QAPP includes the laboratory QA Manual and certifications for the new laboratory (CAS/Kelso). Laboratory standard operating procedures are also included in Appendix A of the QAPP.

No action is proposed.

QAPP SPECIFIC COMMENTS AND RESPONSES

1. Section A7.3.2, Field Completeness Objectives, page A7-4: This section indicates that there are no completeness requirements for the majority of the field parameters. However, in the previous version, these parameters were required to achieve 100% completeness. No justification for this change has been provided. Revise this section to provide adequate justification for the reduced completeness requirements.

Response 1:

The requested justification is included in Section A7.3.2. The justification as stated there is:

"There are no completeness criteria for pH, specific conductance, and temperature, as these are non-critical parameters that are generally determined to verify that appropriate sampling conditions exist prior to sampling."

In addition, the text goes on to state:

"Although there are no completeness criteria for pH, specific conductance and temperature, the field crew should strive to attain 100 percent completeness because the additional data may be useful for other purposes besides the attainment of project objectives described in this QAPP."

No action is proposed.

2. Section A7.4.1, Representativeness Definition, page A7-5: This section indicates that representativeness will be assessed "to determine whether each datum belongs to the observed data distribution." However, it is unclear what type of assessment will be done. Previously, this section indicated that the assessment would be through outlier testing. Revise this section to indicate what assessment will be done under the current QAPP.

Response 2:

Statistical outlier testing sometimes does not identify true outliers and sometimes it flags as outliers values that cannot be verified to be outliers. Therefore, references to outlier testing (which is often interpreted to mean statistical testing) were removed from the referenced text. Because the data will be trended over time, a more powerful approach to outlier identification is actually a comparison of data values over time with knowledge of how samples were collected, and circumstances surrounding the data generation. This type of review, however, is subject to interpretation and professional judgment and there is no standard statistical or other approach that can be defined in advance that will adequately support all possible scenarios. Therefore, to

clarify the intent of the reference statement, the following text has been added as the fourth sentence in Section A7.4.1:

“Factors considered during this assessment will include adherence to designated SOPs, relative concentrations of analytes from previous and current sampling rounds, and any other factors that are relevant at the time of assessment. If analyte concentrations appear to deviate from a trend line drawn through the data points (after allowing for data uncertainties), the apparently discordant values will be investigated to determine whether they are erroneous. The choice of linear or non-linear trends for this evaluation will be based on the appearance of the data and may include calculation of best fits to various trend line models. Models used must be reasonable concentration decay models applicable to groundwater monitoring.”

3. Section A9, Documentation and Records, page A9-1: This section does not address manual integrations. While this may not have been discussed in the previous versions of the QAPP, the laboratory should provide appropriate documentation (i.e., chromatograms before and after the manual integration, the reason for each manual integration, and the analysts initials and date on each manual integration) for every manual integration performed during the analysis of these samples. Please note that this should be done for all site samples and associated calibration standards and QC samples. Revise the QAPP to include this information.

Response 3:

The following text has been inserted after the last sentence of Section A9.1.3:

“When manually integrating chromatographic peaks for site samples, the laboratory should provide appropriate documentation (i.e., chromatograms that include data for retention times before and after the manual integration, the reason for each manual integration, and the analyst’s initials and date on each manual integration) for every manual integration performed during the analysis of the samples. This should also be done for associated calibration standards and QC samples.”

4. Section B2.1, Field Measurement Procedures, page B2-1: It is unclear exactly when field measurements will be taken. Previously, this section indicated that a “YSI” would be used to measure field parameters. However, this section now indicates that a “YSI” may be used to measure field parameters. Clarify whether this statement means that another or different instrument will be used or if field parameters will not always be analyzed. Ensure that the QAPP

Response: See Appendix B of the RAMP portion of the RAWP. Only Problem B (Effectiveness of the capture well system) and Problem C (Groundwater Monitoring for Overall Contamination at NIROP) are relevant to annual groundwater monitoring. An explicit requirement has been added to Section 4.5.2 of the RAMP to discuss attainment of DQOs relative to the DQOs presented in Attachment B. An evaluation of attainment of DQOs will be added to each year's AMR starting with 2005. The DQO discussion will present the Decision Statements for Problem B (Determine whether NIROP groundwater contamination is substantially prevented from leaving the NIROP property after startup of new [pumping] wells) and Problem C (If contaminated groundwater (>100 ppb TCE) is migrating beyond the north and south edges of the capture well line along the NIROP compliance line, evaluate potential system enhancements, source control, etc., as appropriate to improve the containment system. If not, optimize the groundwater monitoring system by selecting different pumping rates, deselecting wells from the list of monitoring/pumping, etc. as appropriate, based on best professional judgment using data analysis tools [identified elsewhere in the DQO notes]. Appendix B indicates that attainment of DQOs will be based on a weight of evidence approach.

The additional text, placed at the beginning of the second to last paragraph of Section 4.5.2 is as follows:

"DQOs (Problems B and C of Appendix B) will be evaluated and the evaluation will be documented in each AMR, beginning with the 2005 AMR. The process used to conduct this evaluation will be in accord with the applicable DQOs presented in Appendix B. A presentation of the decision statements being evaluated, the evaluation approach, and the results and conclusions of the evaluation will be presented in AMR Section 6.0."

The discussion concerning attainment of DQOs is anticipated to heavily reference the discussions related to topics presented elsewhere in Section 4.0 of the RAMP. The conclusions based on this approach will also be reported in each AMR Section 6.0 – Conclusions and Recommendations. Note that the Navy feels that a thorough evaluation of DQOs is already implicit in Section 4.0; all that changes is that the foregoing process will make it explicit.

In addition, please note that pursuant to the FFA Attachment B, Section IV, the monitoring program requires that only the following items be provided in the AMR:

- (1) The results of all water level measurements and parameter analyses for the previous year.
- (2) A water level contour map for the regional ground water aquifer for high and low potentiometric and surface water elevations;

- (3) A map showing each well with the concentrations of pollutant for each sampling event;
- (4) Graphs illustrating the concentrations over the time using data from each sampling event (this graph shall be cumulative showing water quality for all previous years as well as the reporting year); and
- (5) A sampling plan for the next year with an assessment of the monitoring parameters; sampling frequencies, and the need for the addition or deletion of monitoring wells.

The Navy far exceeds these requirements on an annual basis with each AMR, as evidenced by Section 4.5.2 of the RAMP. Nonetheless, the Navy will add the new information as described above to each year's AMR.

In addition, the following from the Tetra Tech transmittal letter of 20 July 2005 has been inserted at the end of QAPP Section C1.1.1.2:

"The Navy will report to the MPCA all major findings of internal audits to include a description of problems identified, corrective actions taken, and ultimate resolution of the problems. Any corrective actions taken in the field to mitigate conditions adverse to quality will be summarized. A description of corrective actions taken on site, if any, will be included in the AMR. In addition, key field personnel changes will also be documented in the AMR. These changes will represent changes to decision makers rather than individual personnel such as sample collectors."

At the beginning of the last sentence of QAPP Section D1.4.1, the following text has been inserted:

"In addition to the above, a review of the data will be conducted to determine the extent to which data precision, accuracy, completeness, comparability, representativeness, and sensitivity objectives were met. This review will be summarized in the conclusions of the AMR."

Figure A4-1.

Comment: In Figure A4-1, the MPCA staff requests that the Navy list the CAS/Kelso laboratory contact name.

Response:

Figure 4-1 has been revised to list the CAS/Kelso laboratory contact name, as requested. The name is Greg Salata.

Table A6-3.

Comment: The MPCA staff requests that the Navy reduce the reporting limit for tetrachloroethene to 3.8 µg/L to match the Daily Maximum Limit.

Response:

The laboratory reporting limit has been reduced to 3.8 µg/L, as requested, and the new limit is shown on Table A6-3.

Table A7-1.

The limits present in Table A7-1 are reasonable in most cases, but some of them are below 50% and a few even at 10%. This is unacceptable to the MPCA for MS/MSD or LCS limits. If the laboratory chooses to use these limits – that may be their internal SOP – the validation and data review will require that data below 50% be rejected and require flagging of data between that point and 70% recovery.

Response:

The Navy representative, Dr. Tom Johnston, contacted MPCA representative, Mr. Luke Charpentier, to discuss this comment because the direction in this comment conflicts with MPCA written guidance available on the MPCA web site. The written guidance is as follows:

From the MPCA Draft QAPP Guidance (26 June, 2003):

“e. The outside limits used by MPCA for data review of spikes, surrogates and control samples are; 75-125% recovery of volatiles (except gases), 75-125% recovery for all metals, 30 – 150% recovery for all semivolatile compounds, and 50 – 150% for other inorganics. These are OUTSIDE limits and should not be used as laboratory control limits in place of Shewart charts or recommended method control limits, but consultants should flag data that fails to meet these limits at a minimum;”

From the Laboratory Data Checklist:

“The recoveries are compound specific, but generally 30 - 150% for organic and 80 - 120 % for inorganic are expected.”

After discussion on this topic, both representatives agreed that the requested 50% limit is not required by the written MPCA guidance. The MPCA representative indicated that rejection of data with recoveries less than 50% would be required, nonetheless. He clarified to indicate that this criterion applies to all LCSs and to valid MSs. Valid MSs are those MSs for which the spike amount (expressed in native sample concentrations units) is at least 25% of the native sample concentration. At this time, Navy has agreed to accept the 50% limit, with reservation, for AMR data only.

The laboratory (CAS/Kelso) has been notified of this requirement.

The Navy will apply the 50% recovery requirement to all AMR VOC data unless the spike amount is less than 25% of the native analyte concentration in the sample. The following new footnote 2 has been added to Table A7-1:

"(2) Recoveries less than 50 percent will cause data to be rejected during data validation. Values between 50 and 70 percent will be flagged with a "J" qualifier flag. This 50% limit is in conflict with the National Functional Guidelines for Organic Data Review and written MPCA guidance. However, per MPCA request it will be applied for the AMR data set only. The Navy reserves the right to revisit this requirement for all other data uses, or in the event that data of otherwise acceptable quality have being routinely rejected.:

In addition, the "LCS/LCD Samples" header of Table A7-1 has been changed to "LCS/LCSD Samples" and footnote callouts have been renumbered to render them consistent with the revised footnotes.

Volume II, Quality Assurance Project Plan

General Comment

The MPCA staff requests that the Navy ensure that CAS can reach the required limits on site. It appears CAS can do this without modification to method 8260B, but Navy should verify this with the laboratory QA staff.

Response:

CAS/Kelso has been given the opportunity to review the limits provided in the QAPP and they have concurred with the limits.

References:

U.S. EPA, 1994. Laboratory Program National Functional Guidelines for Organic Data Review. EPA-540/R-94/012. Office of Solid Waste and Emergency Response, Washington, DC, February 1994.

**RESPONSES TO COMMENTS POSED IN ATTACHMENT III OF THE LETTER DATED AUGUST 15,
2005 FROM MR. D. DOUGLAS TO COMMANDING OFFICER, SOUTHERN DIVISION, NAVAL
FACILITIES ENGINEERING COMMAND
(AUGUST 25, 2005) CONCERNING THE REMEDIAL ACTION WORK PLAN, NAVAL INDUSTRIAL
RESERVE ORDNANCE PLANE, FRIDLEY, MINNESOTA
(09-02-05)**

Volume I, Remedial Action Work Plan:

Comment, Section 4.1, Objectives, ninth bullet, page 4-1: The MPCA staff's position does not approve of this objective of the RAWP. The MPCA staff position on this matter can be found in MPCA staff response to "Section 6.1, SUMMARY AND CONCLUSIONS, general Observations, page 6-2, bullet 2" of the MPCA staff response to the 2004 Annual Monitoring Report, dated June 16, 2005.

Response: The following parenthetical has been added to the bullet text: (MPCA has advised Navy that MPCA does not endorse any representations of the data regarding NIROP versus UDLP contamination in specific wells at this time.)

Comment, Section 4.1, Objective, tenth bullet, page 4-2: The bulleted items are not decision rules. The MPCA staff request that the Navy identify these items as topics instead.

Response: The text 'Decision Rule #' has been replaced with 'Topic #' in each case.

Comment, Tables of Chapter: The MPCA staff requests that monitoring well MS-46S be deleted from all tables based upon the rationale found in "Section 6.1, SUMMARY AND CONCLUSIONS, Shallow Monitoring Interval, page 6-2, bullet 1, Monitoring Well MS-46S" of the MPCA staff response to the 2004 Annual Monitoring Report.

Response: Monitoring Well MS-46S has been deleted from the monitoring network and the static water level measurement schedule. This required deletion from Tables 4-3, 4-4, 4-5, and 4-10.

Comment, Appendix A, NPDES/SDS Permit, Chapter 7, Section 3, Reporting: While the Navy has been reporting NPDES system problems in the Annual Monitoring Reports, the NPDES permit requires that the Navy report system problems pursuant to Section 3 of the "Final Revised NPDES/SDS Permit no. MN 0000710, dated October 2, 2003. The Belinda Nichols of the MPCA NPDES staff has informed me that the NPDES staff is not receiving reports of system problems. The MPCA staff requests that the Navy rectify this problem and begin complying with these reporting requirements of the NPDES permit.

Response: Navy is reviewing the NPDES permit to verify reporting requirements. In any case, no revisions to the RAWP are required.

Volume II, Quality Assurance Project Plan:

Signatory Page.

Comment: As the Navy is aware, all parties must sign the signatory page of the QAPP. Columbia Analytical Services, in particular, must read the QAPP and agree to it, as CAS is agreeing to language that was written for EnChem.

Response: CAS/Kelso was solicited and provided information that was necessary to prepare the QAPP. In addition, the information that was originally written for EnChem was either changed to apply directly to CAS/Kelso or was verified to be consistent with the CAS/Kelso QA manual (Appendix A of the QAPP). However, following receipt of the MPCA comment, CAS/Kelso was given another opportunity to concur (or to disagree) with information affecting them in response to this comment. They concurred with the QAPP content.

As noted in this response, CAS/Kelso will indicate concurrence with the QAPP, via their signature on the cover sheet, when all changes have been incorporated. No action is proposed, other than to obtain CAS/Kelso concurrence with the QAPP.

References.

Comment: The MPCA staff requests that the Navy check all references to ensure they are accurate as there are references to the EnChem Quality Assurance Manual by Chapter that were not changed in this redline. It may be that the chapters match up between the Columbia Analytical Services (CAS) and the EnChem QA Manual but this should be checked regardless.

Response: Cross-references to the CAS/Kelso QA Manual and SOPs were checked. Two cross-references were found to be incorrect. The following changes were made to correct these errors:

- QAPP Section B3.2, Pages B3-3, last sentence: "Section 5.0" was changed to Section 8.0."
- QAPP Section B6.2, Page B6-1, last sentences of first paragraph: "Section 11.0" was changed to "Section 14.0."

DQOs

Comment: How will Tetra Tech NUS, Inc. consolidate information and report on progress towards meeting the DQOs discussed in the letter from Mark Sladic, dated July 20, 2005? This letter discussed precision, accuracy, completeness, etc., but does not get to the heart of the issue of whether or not the DQOs being answered or addressed. Also, the MPCA staff requests that this matter be discussed in the AMR conclusions.

- (1) The results of all water level measurements and parameter analyses for the previous year.
- (2) A water level contour map for the regional ground water aquifer for high and low potentiometric and surface water elevations;
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After discussion on this topic, both representatives agreed that the requested 50% limit is not required by the written MPCA guidance. A follow-up discussion between the Navy and MPCA yielded the following comment from Mr. David Douglas to Mr. Daniel Owens dated September 15, 2005 (10:40 AM):

"Dan, as we discussed, please follow the MPCA draft QAPP guidance dated June 26, 2003 in lieu of MPCA's comment that required that data below 50% recovery be rejected."

In light of this more recent comment the following new footnote 2 has been added to Table A7-1:

"2 Recoveries less than 75 percent or greater than 125 percent will cause data to be flagged as estimated ("J" flag) during data validation. Recoveries less than the lower of 30 percent or the low recovery limit shown in this table will cause non-detect data to be rejected ("R" flag). For MS and MSD spikes that do not increase the native sample concentrations by at least 25 percent, the spike will be considered invalid and these rules will not apply."

In addition, the "LCS/LCD Samples" header of Table A7-1 has been changed to "LCS/LCSD Samples" and footnote callouts have been renumbered to render them consistent with the revised footnotes.

Volume II, Quality Assurance Project Plan

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