General

To: NNMCAB
From: EMS Committee
Subject: Evaluation of DOE Response to NNMCAB Recommendation 2002-2
Date: July 8, 2002

The Northern New Mexico Citizens Advisory Board is appreciative of the partial response received on March 6, 2002 from the Department of Energy Office of Los Alamos Site Operations to recommendation 2002-2, "Analytical Methods and Protocols for Low Levels of Contaminants".

This recommendation originated from the NNMCAB Environmental Monitoring and Surveillance Committee and your response was forwarded to the Committee for their evaluation. The bold text below is the language of the recommendation followed by the Committee evaluation of the received response.

Therefore it is recommended that the Department of Energy Office of Environmental Management investigate techniques to improve the level of confidence in analytical values for those environmental contaminants of interest to the DOE Complex and for which current or proposed levels are near the method detection limit of frequently used analytical methods.

With respect to perchlorate the received response demonstrates a significant effort at the Albuquerque Operations Office level of the Department of Energy (DOE-AL) to enhance the level of confidence in analytical values.

The Committee finds particular value in the recommendation that perchlorate method detection limits (MDL) being determined by ion chromatography using an actual groundwater matrix instead of deionized water with a resulting improvement of confidence in results at or near the MDL. The Committee suggests that consideration should be given to the same practice for the liquid chromatography/mass spectrometry/mass spectrometry (LC/MS/MS) method mentioned in the response.

While the specific 40CFR136 Appendix B manner of calculating an MDL may be required for certain legal data uses, e.g. Clean Water Act reporting, this is not the only manner in which an MDL or like value may be determined. Limitations in the use and application of 40CFR136 Appendix B has been recognized by at least one state authority and even the EPA (references 1 and 2 below). In the longer term consideration should be given to supplementing the 40CFR136 Appendix B manner of calculating an MDL with other approaches.

The Committee believes that the received response indicates substantial progress in a manner generally consistent with the spirit of the NNMCAB recommendation. The NNMCAB looks forward to further updates on progress toward the LC/MS/MS analytical method and the increased confidence in perchlorate analytical results. In addition it is appreciative of the invitation for NNMCAB participation.


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1) Analytical Detection Limit Guidance & Laboratory Guide for Determining Method Detection Limits, Wisconsin Department of Natural Resources Laboratory Certification Program, April 1996, PUBL-TS-056-96.
http://www.dnr.state.wi.us/org/es/science/lc/download/Loddoc.pdf

2) Guidance on Data Quality Indicators, EPA QA/G-5i, Peer Review Draft, September 2001, section 3.5 (Sensitivity).
http://www.epa.gov/quality/qs-docs/g5i-prd.pdf

3) Defense Environmental Network & Information exchange (DENIX) Interagency Perchlorate Steering Committee (IPSC) web page.
https://www.denix.osd.mil/denix/Public/Library/Water/Perchlorate/perchlorate.html

It is further recommended that a long-term strategy be adopted ... Determine a list of contaminants/environmental media of concern at LANL, for which measured values are near the detection limits of frequently used analytical methods, and for which the detection limits approach current or proposed action levels.

While the received response clearly suggests that perchlorate would be included in such a list such a list is not clearly identified. *Therefore the Committee considers the received response unresponsive to this specific recommendation.*

It is further recommended that a long-term strategy be adopted ... Evaluate the potential for development and implementation of new or improved analytical methods to provide lower detection limits for these contaminants/environmental media ... Evaluate the potential for improving the confidence of results.

While the received response clearly indicates substantial accomplishment in the area of perchlorate in water it is unclear whether this reflects a "long-term strategy" or will be done in a similar manner for other identified contaminants/environmental media.

In addition where technical means may not allow a cost effective improved analytical method other means of improving the confidence of results may be examined. For example, the use of replicate analyses, statistical trending, or other data analysis methods may be of value.

The Committee considers the received response inconclusive to this specific recommendation.

It is further recommended that a long-term strategy be adopted ... Examine the potential for a national partnership with the U.S. Environmental Protection Agency, other DOE offices, other federal agencies, state environmental agencies, and local environmental departments in the development and implementation of the investigated techniques.

While the received response clearly indicates substantial teaming within DOE-AL and with Lawrence Livermore National Laboratory (LLNL) the level of additional participation is unclear. In particular with regard to perchlorate in water the Committee is aware of the Interagency Perchlorate Steering Committee (IPSC). The IPSC web page (reference 3 below) indicates that it "was formed in January 1998 to bring together government representatives from the EPA, DoD, National Institute for Environmental Health Sciences (NIEHS), and affected State, Tribal, and local governments. Participation in the IPSC has also been solicited from other governmental entities." It is unclear from the response whether there is a sharing of information between the DOE-AL/LLNL team and IPSC or a "long-term strategy" for such partnerships for other identified contaminants/environmental media. *Therefore the Committee considers the received response inconclusive to this specific recommendation.*

References:

1) Analytical Detection Limit Guidance & Laboratory Guide for Determining Method Detection Limits, Wisconsin Department of Natural Resources Laboratory Certification Program, April 1996, PUBL-TS-056-96.
http://www.dnr.state.wi.us/org/es/science/lc/download/Loddoc.pdf

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