



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

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NSWC CRANE
5090.3a

REPLY TO THE ATTENTION OF

May 5, 1999

DW-8J

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

RE: Quanterra Laboratory SOPs
Bioremediation Facility
Naval Surface Warfare Center
Crane, Indiana

Dear Ms. Freeman:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the U.S. Navy's modification request for adding Quanterra Laboratory as a lab for the analyses performed at the Bioremediation Facility. It is our understanding that Southwest Laboratory of Oklahoma (the approved lab) will still be retained for further work. Quanterra of Sacramento, California will represent a modification to the approved Quality Assurance Project Plan (QAPP). The Navy gives no rationale as to whether Quanterra will be a "backup" lab, or if it will effectively replace Southwest Laboratory of Oklahoma for most analyses to be performed. This must be clarified in the modification request, and the text of the document needs to reflect when the Navy would decide to send samples to one lab or the other. Consistency and quality assurance needs to remain for this project. The Navy should not be randomly sending samples to either lab. We do not want to see data packages and results that might not be comparable in the level of quality assurance. Please be careful in describing the exact rationale for the decision making process and how it will or will not effect the end results of analyses and review of data in establishing that treatment is complete.

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Attached are our comments from Mr. Allen Debus, our QAP Coordinator on two SOPs from the modification request. These were chosen to represent our critical analyses review of the request since time constraints do not allow us to examine the entire SOP list. The Navy should consider how these comments might also apply to some of the other SOPs with this new lab.

Please submit a response to comments and a revision addressing our comments within 30 days of the date of this letter. If you have any technical QAP issues, please contact Mr. Debus directly at (312) 886-6186. If you have any general questions regarding this matter, please contact me at (312) 886-6146.

Sincerely,



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

Enclosure: NOD Comments
Filename: quantnod.usn

CC: NSWC Core Members: Bill Gates, SOUTHDIV
Tom Brent, NSWC

NSWC Management Team: Hak Cho, USEPA
Jim Ferro, SOUTHDIV
Jim Hunsicker, NSWC

NSWC Project Team: Al Debus, USEPA
Bob Leduc, Toltest
B. Venky Venkatesh MK
Alan Fosdick, MK

Attachment

Notice of Deficiency Comments

Quanterra Laboratory of Sacramento, California

Approved QAPP Modification Request for the Bioremediation Facility

Naval Surface Warfare Center

Crane, Indiana

1. At the time of the review it remains unclear as to exactly why there are references to Southwest Laboratory of Oklahoma (SWOK) in the tables preceding the SOPs. Also on page 3 of 44, section 1.1.2, there is a reference to SWOK. Is Quanterra replacing SWOK?
2. The nature of the analytical reporting limits should be defined. (Are these Method Detection Limits (MDLs)?)
3. It is stated in footnotes to tables that 2,6 DNT will be used as a surrogate of the toxicity potential for 4-A-2,6 DNT. Also, 2,4 DNT will be used as a surrogate for 2-A-4,6 DNT. From a risk assessment perspective, is this acceptable?
4. Table 1-1 indicates only one set of reporting limits. Will SWOK still be relied upon for measuring 2,3,7,8 TCDD toxicity equivalence?
5. Why have 1,2 DNB and 1,4 DNB been deleted from the Tables?
6. In the case of tables 1-1, 1-2, and 1-3, the detection limit listed for thallium is insufficient for project purposes. Note also that Quanterra's proposed reporting limit is less sensitive than what SWOK had proposed previously.
7. Several ecological data quality levels will not be met through use of Quanterra's analytical methods. (Note this was also the case with SWOK's methods).
8. There is an apparent discrepancy (or typo) in the presentation of detection limits for PETN. Table 1-1 of the QAP indicates a reporting limit of 0.25 mg/kg, while Page C-4-136b indicates a reporting limit of 0.5 mg/kg.

9. In the case of Table 1-4a, for RDX, there is a slight accedence between the proposed reporting limit and target level for drinking water (i.e., 0.8 ug/L > 0.61 ug/L).
10. Referring to Tables 1-4a and 1-4b, Pages 8g and 9g of 44, note that Method 8310 could provide increased sensitivity for PAHs if needed for project purposes. If this is important, then additional review work of SOPs would be necessary.
11. Referring to Tables 3-1 and 3-2, given the unusual nature of the sample matrices, it would be best if all the compounds stated in the target parameter list tables could be spiked into both matrix spiking samples and lab control spike samples.
12. Referring to Table 3-3, note that Quanterra's RPD QC limit for metals in soil seems rather high. What is the rationale for the proposed acceptance limit?
13. The limits expressed in Table 6-1, should be based only on the anticipated limits which will apply to the set of SVOC target analytes proposed in previous QAPP target parameter tables. The ranges cited may not apply to certain target compounds.
14. While QAPP target parameters indicate that 1,2 dichloroethylene will be measured and reported, note that Quanterra can report both the trans and cis isomers. Will it be important to report the cis and trans species of DCE separately to accomplish any particular project objective?
15. Referring to the VOCs in soil Region 5 Directive and the Quanterra VOCs SOP, it is uncertain as to whether the compost samples will be collected in accordance with the Regional Directive. The Quanterra SOP accounts for SW-846 Method 5035, but the QAPP does not specify whether any version of this procedure will be implemented. The concentrations of non-VOC target analytes are exceedingly high in Day 0 samples, but under composting conditions this will not poison the "bugs" from potentially degrading VOCs. Also, it is understood that atmospheric exposures will cause progressive losses of VOCs. Our recommendation would be to determine VOCs samples in field preserved methanol extracts by SIM to achieve relatively low reporting limits. This approach would apply to both SWOK and Quanterra.
16. Referring to Section 8.7.1 of the VOCs SOP, would effervescence be anticipated in these samples? (Are they naturally acidic?)

17. It is not recommended to implement the option described in Section 8.7 of the VOCs SOP.
18. Referring to Section 8.7 of the VOCs SOP, the holding times for each sampling approach (i.e., both with and without effervescence) should be specified.
19. Referring to Sections 9.5 and 9.6, and Table 9 of the VOCs SOP, the solutions should also include the poor purging water soluble VOCs included on the Crane QAPP target list as LCS/MS compounds.
20. For VOCs analysis, a quadratic calibration fit should not be used, unless it conforms to Method 8000 of SW-846 (as of June 17, 1997).
21. Section 11.8 of the VOCs SOP should not be implemented for analysis.
22. Referring to Section 12.2 of the VOCs SOP, none of the Crane target analytes VOCs should be reported as TICs.
23. Referring to Table 1 of the VOCs SOP, note that it would be more informative to report cis and trans isomers of DCE separately especially since Quanterra's SOP can capture this data. From a data comparison perspective, then SWOK should also report the trans and cis isomers.
24. Referring to Table 1 of the VOCs SOP, and with reference to proposed reporting limits cited elsewhere in the QAPP, while we have the impression that most VOCs will be reported using a 5 mL purge volume, acetone will apparently be reported using a 25 mL purge volume. Is this correct? Will the "low soil" technique be used for each VOC? It may be better to couple methanol preservation with SIM analysis to achieve accuracy without further losses due to difficult sampling using EnCore samplers. (We envision that it may be difficult to stuff compost into a 5 mL EnCore device.)
25. Referring to Explosives SOP, which of the options cited in Section 2.7 of the method will actually be used for compost samples? Will there be any difficulties in comparing data from Quanterra if they use the first method option one time and another for the next round of sampling? Or, in comparing SWOK data generated using HPLC-UV to Quanterra's data achieved using HPLC-MS?
26. Potential cyano-column confirmation difficulties are cited in Section 8.3.1. of the explosives analysis SOP. Some attention should be given in the QAPP to how data possibly subject to such problems will be qualified and assessed.

27. Unless separate chromatography and detection settings will be utilized, PETN, picric acid and nitroglycerine are missing from the elution order table indicated in Section 12.8.7 of the explosives analytical SOP. Please clarify this circumstance.