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Navy Engineer-in-Charge: Tony Magnuson

PRC Project Manager: Wayne Hauck

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NAVY RESPONSES TO THE ENVIRONMENTAL PROTECTION AGENCY'S EVALUATION OF THE PRC ENVIRONMENTAL MANAGEMENT, INC. ON-SITE LABORATORY

Prepared By

PRC ENVIRONMENTAL MANAGEMENT, INC.
135 Main Street, Suite 1800
San Francisco, CA 94105
415/543-4880

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The following responses were prepared to address the comments provided by the U.S. Environmental Protection Agency (EPA) Region IX. The agency's comments were provided in an evaluation memorandum dated May 27, 1994. The evaluation was conducted by Dr. Bill Kessler of EPA on April 22, 1994.

The comments are divided into two groups: the first group is related to data management and the second group is related to the analytical procedures. The original text from EPA's memorandum has been reproduced in bold type below, and each comment is followed by Navy's response. Each corrective action described in the Navy's response is currently being implemented by PRC at the on-site laboratory, and all standard operating guidelines (SOG) have been amended to include any changes or updates.

DATA MANAGEMENT COMMENTS

1. Comment: **PRC's data management and data review processes are very unclear. There are no documented procedures for generation of analytical results, peer review, and reporting.**

   Response: A new SOG titled "Data Management, SOG 002, Revision 00" has been prepared. This SOG is intended as a supplement to the existing Phase II Remedial Investigation Data Management Plan, Mare Island Naval Shipyard, Vallejo, California," (PRC June 4, 1992) and addresses data management activities at the on-site laboratory. This SOG addresses the generation of analytical results, peer review, and reporting as part of the on-site laboratory's data management procedures.

2. Comment: **There are no written documentation describing what corrective actions were performed, and there are no corrective action reports generated when out-of-control events occur.**

   Response: Corrective actions for out-of-control events have been clarified. The SOG for each analysis now contains a table entitled "Summary of Calibration and Quality Control Procedures." For each out-of-control event, this table summarizes the appropriate corrective actions and the order in which they are to be performed.

   Out-of-control events and the associated corrective actions are documented in the appropriate logbook. An additional report is not needed.

3. Comment: **Data validation flags are not applied uniformly to all results.**

   Response: PRC makes a distinction between data validation flags and laboratory qualifiers. It is not PRC's policy to apply <u>data</u> validation flags to on-site laboratory results because the data goes through a <u>review</u> process, not a

validation process. The on-site laboratory does routinely assign a variety of laboratory qualifiers to results. The use of laboratory qualifiers has been clarified. The SOG for each analysis contains a discussion of laboratory qualifiers in the section entitled "Laboratory Qualifiers."

ANALYTICAL COMMENTS

1. Comment: **Samples and QC materials for organic analysis are not completely identified with analytical batches, and therefore, QC results can not be completely identified with reported sample results. Analytical batches should be clearly identified throughout the extraction process to the instrument run logs, and finally to the generation of the data report.**

   Response: Previously, the on-site laboratory did not assign analytical batch numbers; however, it is possible to identify quality control (QC) batches by reviewing the associated preparation and analysis logbooks. As stated in the SOGs for each analysis, analytical batches consist of preparation batches, typically beginning with the batch quality control (QC) and followed by the associated samples. Furthermore, each analytical batch is reported together on the appropriate report template. Each template has space for twenty samples, a method blank, a blank spike, and a matrix spike/matrix spike duplicate (MS/MSD) set - that is, a complete preparation batch.

   Currently, the page number for the associated preparation is being used as the analytical batch number. This number is properly referenced in both the associated analysis logbook and the final report.

2. Comment: **The spiking solutions are not traceable from the extraction preparation logs to the original stock solutions.**

   Response: Documentation for the spiking solutions has been improved. On each preparation logbook page where samples are spiked, the stock solution lot number and the amount spiked are documented.

3. Comment: **The procedure for purgeable surrogate spiking was not included in the SOP.**

   Response: The surrogate spiking procedure has been clarified. The sample preparation for benzene, toluene, ethylbenzene, xylene (BTEX), and total petroleum hydrocarbons-purgeables analysis SOG contains a more specific discussion of surrogate spiking in the section entitled "Sample Preparation."

4. Comment: **The use of PQLs, MDLs, and reporting limits are not defined in the SOPs or reports.**

   Response: The definition and use of method detection limits (MDL), practical quantitation limits (PQL), and reporting limits has been clarified. The SOG for each analysis contains a more specific discussion of MDLs and PQLs in

the sections entitled "Method Detection Limit" and "Practical Quantitation Limit," respectively. For the on-site laboratory, the terms "PQL" and "reporting limit" are equivalent.

5. Comment: **There are no corrective action procedures in the SOP for method blank contamination.**

Response: The corrective action for blank contamination has been clarified. The SOG for each analysis contains a discussion of method blanks in the section entitled "Method Blank." In addition, these SOGs now contains a table entitled "Summary of Calibration and Quality Control Procedures." For each out-of-control event, this table summarizes the appropriate corrective actions and the order in which they are to be performed.

6. Comment: **The SOPs overall should be written with language that is very specific, and gives direct guidance to the analysts. The use of "may be" and "should be" phrases need to be eliminated.**

Response: The current version of the on-site laboratory SOGs strives to give very specific direction and guidance to the analyst; the phrases "may be" and "should be" have been eliminated.

7. Comment: **Organic standards used are not traceable to EPA or NIST.**

Response: For the polychlorinated biphenyl (PCB) analysis, Aroclor 1260 has been obtained as an EPA-traceable standard. This standard was purchased from Supelco under the Cooperative Research and Development Agreement (CRADA). All other organic analyses performed at the on-site laboratory are of a commercial nature, and traceable standards are not available.

Currently, all organic standards are purchased from two different vendors. One standard is used for calibration and the other is used for spiking.

8. Comment: **Performance evaluation samples are not analyzed to determine laboratory performance.**

Response: Previously, performance evaluation (PE) samples were not routinely analyzed. Recently, the on-site laboratory has analyzed a PE sample for each analysis. As field work continues, PE samples will be analyzed on a quarterly basis.

9. Comment: **Second source standards are not used for the analysis of TPHs or PCBs.**

Response: Currently, all organic standards are purchased from two different vendors. One standard is used for calibration and the other is used for spiking.

10. Comment: **For PCB analyses (SW8080), 3 point initial calibration is performed instead of the method specified 5 point.**

Response: The PCB analysis performed at the on-site laboratory is a modification of SW-

846 methodology. A 3-point calibration is sufficient for the field application as it includes the foundation of a 5-point calibration. The 3-point calibration includes the low-level standard that confirms the PQL, the high-level standard that establishes the working range of the instrument, and the mid-level standard that corresponds to the continuing calibration.

11. Comment: **For PCBs, only the 1260 standard is used for the initial and continuing calibration, and to calculate sample results.**

Response: Previously, all Aroclors found in the PCB analysis were quantitated against the Aroclor 1260 calibration and the results were flagged with a laboratory qualifier "A", indicating that another Aroclor was present.

Currently, if other Aroclors are observed, an initial calibration specific to that Aroclor is analyzed and the specific sample is reanalyzed and quantitated using the new initial calibration. It should be noted that Aroclors 1260, 1254, 1248, and 1242 have very similar response factors; results calculated from an Aroclor 1260 initial calibrations do not vary significantly when calculated from another Aroclor initial calibration.

12. Comment: **In addition, because a portion of the analyses are sent to a fixed laboratory for confirmation purpose, guidelines should be established on how the data comparison will be performed.**

Response: The Navy is still developing an approach that will be proposed for the on-site and fixed laboratory data "comparison". On-site laboratory and fixed laboratory samples were collected over 1-2 foot intervals and would not be considered "split" samples. Thus, a one-to-one comparison is not being considered. Different statistical and qualitative methods of comparison (such as spacial distribution) are being considered.