

DATA VALIDATION SUMMARY REPORT
RANGE 36A

Provided By Shaw Environmental, Inc.

LABORATORY: Applied P&Ch Laboratory, Chino, California

SAMPLING DATES: October 28, 2003

Data Quality and Usability

Data generated during sampling and analysis was reconciled against the quality control requirements established in the *Chemical Data Quality Management Plan, former Fort Ord, California* [CDQMP] (IT, 2001) to determine if the data was of sufficient quality to achieve the project requirements. No formal data quality objectives were established for this project; work activities were outlined in the *Draft Final Work Plan, Soil Confirmation Sampling, Range 36A, Former Fort Ord, California* (Harding ESE, 2003).

The data quality and usability is determined through characteristics, which include precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters. The subcontractor laboratory and field data documentation and compliance with the CDQMP were used to assess the PARCCS parameters.

The subcontract laboratory was informed of the project requirements prior to project implementation in order to assure compliance with the CDQMP.

Quality control samples were collected as defined in the CDQMP. No quality assurance (QA) split samples were collected for analysis.

Laboratory Data Consultants of Carlsbad, California performed data validation. One hundred percent of the data underwent a thorough review, level IV evaluation of the QC summary forms as well as the raw data to confirm sample quantitation and identification following CDQMP guidance. In summary, all

confirmation data were found to be acceptable and usable as reported based on the review and validation that was conducted.

Based upon the review/validation of the primary and QC samples, the data met the needs for this project. The achievement of these objectives resulted in usable data to meet the goals of the project. The usability of the data is evaluated below in terms of the precision, accuracy, representativeness, completeness, and comparability.

Precision and Accuracy

Precision and accuracy are the agreement between a measurement and the true value and the degree of variability in the agreement, respectively. Precision and accuracy were determined by comparing results from QC samples against criteria established in the CDQMP (*IT, 2001*). More specifically, relative percent difference (RPD) for field and laboratory duplicates were calculated and used as a measure of precision. Accuracy was evaluated through the collection and analysis of matrix spike, matrix spike duplicate (MS/MSD) samples, laboratory control samples (LCS), and by spiking all samples with surrogate compounds where applicable. Only samples from this project were used for MS/MSD procedures. No outliers were found, and no data qualified associated with RPD for field or laboratory duplicates, MS/MSD, LCS, or surrogates.

Section 2.6.1 of the CDQMP states that field duplicates will be analyzed at a rate of 1/batch/matrix unless otherwise specified in the project sampling and analysis plan. The objectives for the number of duplicate results were achieved; one sample, S36A-014, out of 10 field samples was analyzed as the field duplicate. There were six field duplicate RPD outliers for the Dioxin analyses. The RPD outliers ranged from 73 – 87.8, and one outlier was 200 (one of the results was non-detectable). Data was not qualified based on the field duplicate outliers, which were likely the result of sample heterogeneity. There were no outliers for the laboratory duplicate samples.

Completeness

Completeness is the adequacy in quantity of valid measurements to prevent misinterpretation and to answer important questions. Analytical completeness is calculated as the percentage of samples not qualified for any reason as determined by the CDQMP. The combined analytical completeness was 96.5 percent; a value greater than the 90 percent required by the CDQMP.

Overall, the data met the project needs for completeness and are usable, with the exception of the compounds noted above.

Representativeness

Representativeness is a measure of the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or an environmental condition. To verify sample representativeness, field sample collection procedures, sample containers, and holding times were reviewed against EPA requirements. The data were determined to be representative of the site conditions.

Comparability

Comparability is a qualitative characteristic that defines the extent to which a chemical parameter measurement is consistent with, and may be compared to, values from other sampling events. For this project, comparability among measurements was achieved through the use of standard approved methodologies, procedures, field data sheets, and uniform concentration units.

Quantitation Limits

Quantitation limits are the extent to which the laboratory or field equipment or analytical process can provide accurate, minimum data measurements of reliable quality for specific constituents in replicate field samples.

The subcontracted laboratory met the requirements as specified in the CDQMP with one exception. The quantitation for OCDD in sample number S36A-012 exceeded the calibration range, and was qualified as estimated (“J” flag). The data was still considered usable for the purposes intended.

Traceability

Traceability is the extent to which data can be substantiated by hard-copy documentation. Traceability has been verified by the data validation process.

Summary of Data Quality

Data validation shows that all results for confirmation samples collected associated with Range 36A are usable and that sufficient data exist for the purpose of demonstrating that the requirements of the *Draft Final Work Plan, Soil Confirmation Sampling, Range 36A, Former Fort Ord, California* dated July 2, 2003, were met.

APPENDIX E

LABORATORY ANALYTICAL REPORTS