



ICF International / Laboratory Data Consultants

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MEMORANDUM

TO: Lisa Hanusiak, Remedial Project Manager
Site Cleanup Section 3, SFD-7-3

THROUGH: Rose Fong, ESAT Task Order Manager (TOM)
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105054

DATE: April 20, 2007

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Alhambra
Site Account No.:	09 ES LA01
CERCLIS ID No.:	CAD980818579
Case No.:	35637
SDG No.:	MY2TD5
Laboratory:	Sentinel, Inc. (SENTIN)
Analysis:	Dissolved Metals plus Molybdenum
Samples:	4 Groundwater Samples (see Case Summary)
Collection Date:	August 24, 2006
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cynthia Gurley, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9

CLP PO: FYI Action

SAMPLING ISSUES: Yes No

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Data Validation Report

Case No.: 35637
SDG No.: MY2TD5
Site: Alhambra
Laboratory: Sentinel, Inc. (SENTIN)
Reviewer: Stan Kott, ESAT/LDC
Date: April 20, 2007

I. CASE SUMMARY

Sample Information

Samples: MY2TD5, MY2TD7, MY2TD8, and MY2TE1
Concentration and Matrix: Low Concentration Groundwater
Analysis: CLP Dissolved Metals plus Dissolved Molybdenum by ICP-MS and Dissolved Mercury
SOW: ILM05.3 and Modified Analysis Request 1256.0
Collection Date: August 24, 2006
Sample Receipt Date: August 25, 2006
Preparation Date: August 25 and 31, 2006
Analysis Date: August 28 and September 1, 2006

Field QC

Field Blanks (FB): MY2TE1
Equipment Blanks (EB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): MY2TD7 and MY2TD8

Laboratory QC

Method Blank & Associated Samples: Preparation Blank-Water (PBW) and samples listed above
Matrix Spike: MY2TD5S
Duplicates: MY2TD5D
ICP Serial Dilution: MY2TD5L

Analysis: CLP Dissolved Metals plus Dissolved Molybdenum by ICP-MS and Dissolved Mercury

<u>Analyte</u>	<u>Sample Preparation and Digestion Date</u>	<u>Analysis Date</u>
ICP-MS Metals	August 25 and 31, 2006	August 28 and September 1, 2006
Mercury	August 25, 2006	August 28, 2006
Percent Solids	Not Applicable	Not Applicable

CLP PO Action

None

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Sampling Issues

1. The laboratory indicated temperature indicator bottles were not provided in the sample coolers. The laboratory used a laser thermometer determined cooler temperature to be 4°C. No adverse effect on data quality is expected.
2. The Traffic Report/Chain of Custody (TR/COC) record form did not specify a sample to be used for laboratory QC. The laboratory selected sample MY2TD5 for QC analysis and notified the Sample Management Office (SMO). The effect on data quality is not known.
3. The TR/COC record form did not request the analysis of dissolved molybdenum in the analysis block of the COC. Since molybdenum was analyzed and reported in this SDG, no adverse effect on data quality is expected.

Additional Comments

Samples of this SDG were analyzed under Modified Analysis Request (MAR), Modification Reference Number 1256.0 for the CLP dissolved metals plus dissolved molybdenum by inductively coupled plasma-mass spectroscopy (ICP-MS). Mercury was analyzed by the cold vapor atomic absorption method (CVAA).

All method requirements specified in the EPA Contract Laboratory Program (CLP) Inorganic Statement of Work (SOW), except as noted, have been met.

Analytical results are listed in Table 1A with qualifications. Definitions of data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- X Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- X *Request for Quote for Modified Analysis* (SOW flexibility clause), Modification Reference Number: 1256.0, August 18, 2006;
- X *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis Multi-Media, Multi-Concentration ILM05.3*, March 2004; and
- X *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

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II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
	c. CRQL Check Standard (CRI)		
	d. ICP-MS Tuning Analysis		
4.	Blanks	No	B,C
5.	ICP Interference Check Sample (ICS)	Yes	
6.	Laboratory Control Sample (LCS)	Yes	
7.	Duplicate Sample Analysis	No	D
8.	Matrix Spike Sample Analysis	Yes	
9.	ICP Serial Dilution Analysis	Yes	
10.	ICP-MS Internal Standards	Yes	
11.	Field Duplicate Sample Analysis	No	E
12.	Sample Quantitation	Yes	A
13.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

- A. Results above the method detection limit (MDL) but below the contract required quantitation limit (CRQL) (denoted with an "L" qualifier) are estimated and flagged "J" in Table 1A.

Results above the MDL but below the CRQL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of quantitation.

- B. The following results are qualified as non-detected and estimated and flagged "J+" in Table 1A due to field blank contamination.

X Vanadium in samples MY2TD5, MY2TD7, and MY2TD8

Sample results greater than the CRQL are qualified as estimated high (J+) unless the concentration of the analyte in the sample exceeds 5 times the amount in any associated blank.

The reported result of 10.2 µg/L for vanadium in field blank sample MY2TE1 exceeds the 1.0 µg/L CRQL.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field. Contaminants that are found in the field blank which are absent in the laboratory preparation blank could be indicative of a field QC problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate source of contamination.

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- C. The following results are reported as non-detected (U) in Table 1A due to low level preparation blank (PBW) contamination.

X Chromium and lead in all samples

Chromium (1.1 µg/L) and lead (0.14 µg/L) values in PBW are greater than the respective MDLs but less than the respective CRQLs. Sample results greater than or equal to the MDL but less than the CRQL are reported as non-detected (U) at the respective CRQL.

A preparation blank is an analytical control that contains distilled, deionized water, or baked sand for solid matrices, and reagents, which is carried through the entire analytical procedure. The preparation blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

- D. The following results are estimated and flagged "J" in Table 1A because of laboratory duplicate results outside method QC limits.

X Vanadium in samples MY2TD5, MY2TD7, and MY2TD8

The result for laboratory duplicate sample MYTD5D did not meet the \forall CRQL absolute difference criterion for precision as listed below.

Analyte	Laboratory Duplicate Absolute Difference	CRQL
Vanadium	1.3 µg/L	1.0 µg/L

Results for vanadium in the samples listed above are considered quantitatively uncertain.

In addition, mercury was detected at a concentration of 0.19 µg/L in the initial analysis of sample MY2TD5, but was not detected in the duplicate analysis. A RPD is not calculated.

Duplicate analyses demonstrate the analytical precision obtained for each sample matrix. The imprecision between duplicate results may be due to the sample matrix, sample non-homogeneity, or poor sampling or laboratory technique.

- E. An absolute difference of 1.7 µg/L was obtained for vanadium in the analysis of field duplicate pair samples MY2TD7 and MY2TD8. Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a \forall 20 RPD or \forall CRQL absolute difference criteria for precision. The effect on data quality is not known.

In addition, mercury was detected in the field duplicate sample MY2TD8 at a concentration of 0.19 µg/L. Mercury was not detected in the associated field duplicate sample MY2TD7. A RPD is not calculated. Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a \forall 20 RPD or \forall CRQL criteria for precision. The effect on data quality is not known.

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The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample non-homogeneity, or poor sampling or laboratory technique.

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TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.