



ICF International / Laboratory Data Consultants

Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300; Fax: (510) 412-2304.

MEMORANDUM

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

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

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

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105109 Amendment 2

DATE: March 31, 2008

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 QB01
CERCLIS ID NO.:	CAD980818579
Case No.:	36912
SDG No.:	Y3QN3
Laboratory:	Shealy Environmental Services, Inc. (SHEALY)
Analysis:	Trace Volatiles
Samples:	18 Ground Water Samples (see Case Summary)
Collection Date:	November 14 through 16, 2007
Reviewer:	Dennis Mayugba, 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: Attention Action

SAMPLING ISSUES: Yes No

00105109-8989/36912/Y3QN3-TV

Data Validation Report - Tier 3

Case No.: 36912
SDG No.: Y3QN3
Site: Alhambra
Laboratory: Shealy Environmental Services, Inc.
Reviewer: Dennis Mayugba, ESAT/LDC
Date: March 31, 2008

I. CASE SUMMARY

Sample Information

Samples: Y3QN3 through Y3QP8, Y3QQ0, and Y3QQ1
Concentration and Matrix: Low Concentration Water
Analysis: Trace Volatiles
SOW: SOM01.2 and Modified Reference No. 1391.1
Collection Date: November 14 through 16, 2007
Sample Receipt Date: November 15 through 17, 2007
Extraction Date: Not Applicable
Analysis Date: November 19 and 20, 2007

Field QC

Field Blanks (FB): Y3QQ1
Equipment Blanks (EB): Y3QN8 and Y3QP7
Trip Blank (TB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): Y3QN7 and Y3QN9
Field Duplicates (D2): Y3QP5 and Y3QP6

Laboratory QC

Method Blanks & Associated Samples:
VBLK19: Y3QN3 through Y3QP0
VBLK20: Y3QP1 through Y3QP8, Y3QQ0, Y3QQ1, Y3QN6MS,
Y3QN6MSD, Y3QN5DL, Y3QQ0DL; storage blanks
VHBLK33 and VHBLK33RE

Tables

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review
2: Calibration Summary

CLP PO Action

None.

CLP PO Attention

1. Detected results for some analytes are qualified as nondetected and estimated (U,J) due to method blank, storage blank, field blank, and equipment blank contamination (see Comment B).

2. Results for tertiary butyl alcohol are qualified as estimated (J) due to calibration problems (see Comment C).
3. Results for some analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recovery problems (see Comment D).

Sampling Issues

1. For the Field QA/QC Summary Form, sample numbers for equipment blank and field duplicates collected on 11/14/07 were incorrect; the correct sample numbers are Y3QN8 for equipment blank and Y3QN7 and Y3QN9 for field duplicates (see attached electronic mail dated 03/21/08).
2. Detected results for chloromethane, carbon disulfide, acetone, tetrachloroethene, m,p-xylene, and tertiary butyl alcohol in some samples were qualified as nondetected and estimated (U,J) due to field and equipment blank contamination (see Comment B).
3. The laboratory received two samples that have labels that do not match the traffic report & chain of custody records (TR/COCs). In addition, incorrect collection times were noted (see attached SDG Narrative, p. 2 in the data package).
4. No sample was designated for "laboratory QC" on traffic report & chain of custody records (TR/COCs). The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analysis on sample Y3QN6.

Additional Comments

Other than laboratory and field artifacts (approximate retention times of 4.4, 7.7, and 11.8 minutes), a tentatively identified compound (TIC) was found in sample Y3QP5 (see attached Form 1J).

The laboratory performed manual integrations on samples due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;
- USEPA Contract Laboratory Program Statement of Work for Organics Analysis, *Multi-Media, Multi-Concentration*, SOM01.1, May 2005;
- *Modifications Updating SOM01.1 to SOM01.2*, Amended April 11, 2007; and

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, July 2007.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	No	C
4.	Continuing Calibration Verification	No	C
5.	Laboratory Blanks	No	B
6.	Field Blanks	No	B
7.	Deuterated Monitoring Compounds	No	D
8.	Matrix Spike/Matrix Spike Duplicate	No	E
9.	Laboratory Control Samples/Duplicate	N/A	
10.	Internal Standards	Yes	
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	A, F
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, storage blank, field blank, and equipment blank contamination and are flagged "U,J" in Table 1A.

- Chloromethane in samples Y3QN3, Y3QN4, Y3QN7, and Y3QN9
- 1,1-Dichloroethene in samples Y3QN3 through Y3QN9, Y3QP0, Y3QP1, Y3QP4 through Y3QP8, and Y3QQ1 and storage blanks VHBLK33 and VHBLK33RE
- Acetone in samples Y3QP0, Y3QP1, Y3QP3, and Y3QP4 and storage blanks VHBLK33RE
- Carbon disulfide in samples Y3QN3 through Y3QN5 and Y3QN9

- Methylene chloride in all samples and storage blanks VHBLK33 and VHBLK33RE
- Chloroform in samples Y3QN3, Y3QN4, Y3QN8, Y3QP0 through Y3QP8 and Y3QQ1 and storage blanks VHBLK33 and VHBLK33RE
- Benzene in sample Y3QP2
- Toluene in samples Y3QN4, Y3QN9, Y3QP0, Y3QP3, Y3QP6, Y3QP7, Y3QP8, and Y3QQ1
- Tetrachloroethene in sample Y3QN5
- m,p-Xylene in sample Y3QP0
- Tertiary butyl alcohol in sample Y3QP0

Chloromethane was found in method blanks VBLK20 and equipment blank Y3QN8; 1,1-dichloroethene was found in method blanks VBLK19 and VBLK20; acetone was found in method blank VBLK20, equipment blank Y3QP7, and field blank Y3QQ1; carbon disulfide was found in equipment blank Y3QN8; methylene chloride and chloroform were found in method blanks VBLK19 and VBLK20; benzene was found in storage blank VHBLK33; toluene was found in storage blank VHBLK33; tetrachloroethene was found in equipment blank Y3QN8; m,p-xylene was found in equipment blank Y3QP7; and tertiary butyl alcohol was found in equipment blank Y3QP7 and field blank Y3QQ1 (See Table 1A for concentrations). Results for the samples listed above are considered nondetected and estimated (U,J) and quantitation limits have been raised according to blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result and reported as nondetected. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Chloromethane results for sample Y3QP0 (0.15 $\mu\text{g/L}$) and carbon disulfide results for samples Y3QP1 (1.1 $\mu\text{g/L}$), Y3QP2 (0.21 $\mu\text{g/L}$), Y3QP3 (0.11 $\mu\text{g/L}$), Y3QP4 (0.078 $\mu\text{g/L}$), and Y3QP5 (0.10 $\mu\text{g/L}$) are not qualified as nondetected and estimated because these analytes are not detected in the associated method blank, equipment blank, or field blank. Data users should note that these analytes may be artifacts because they were found in other method blank, equipment blank, or field blank.

A laboratory method blank is laboratory reagent water or baked sand analyzed with all reagents, deuterated monitoring compounds, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

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, although any laboratory introduced contamination will be present. Contaminants that are found in the field blank which are absent in the laboratory method 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 error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

- C. Results for the following analyte are qualified as estimated due to low relative response factors (RRFs) in initial calibration and continuing calibration verifications (CCVs) and are flagged "J" in Table 1A.

- Tertiary butyl alcohol in all samples, all method blanks, and storage blanks VHBLK33 and VHBLK33RE

An average RRF of 0.0280 was reported for tertiary butyl alcohol in the initial calibration. RRFs of 0.0271, 0.0239, 0.0351, and 0.0287 were reported for tertiary butyl alcohol in 11/19/07 07:48, 11/19/07 18:25, 11/20/07 08:55, and 11/20/07 19:34 CCVs, respectively. These values are below the 0.05 validation criterion.

Detected results for tertiary butyl alcohol should be considered as the minimum concentrations at which it is present in samples. Where results are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

- D. Results for the following analytes are qualified as estimated due to DMC recoveries outside QC limits and are flagged "J" in Table 1A.

{Vinyl chloride-d3}

- Vinyl chloride in samples Y3QN3, Y3QN4, Y3QN5, and Y3QP6

{Chloroethane-d5}

- Chloromethane in samples Y3QN5 and Y3QP0
- Chloromethane and carbon disulfide in sample Y3QN8
- Carbon disulfide in samples Y3QP1 through Y3QP5

{1,1-Dichloroethene-d2}

- cis-1,2-Dichloroethene in samples Y3QN6 and Y3QN9
- trans-1,2-Dichloroethene and cis-1,2-dichloroethene in sample Y3QQ0

DMC recoveries exceeded QC limits for several samples (see attached Form 2, pp. 7 and 8 in data package). Qualified results may be biased high. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The recovery for DMC chloroform-d in sample Y3QN9 exceeded the QC limit but associated sample results were not qualified because they were nondetects. The samples were not reanalyzed.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

- E. The matrix spike and matrix spike duplicate recoveries and relative percent differences (RPDs) in QC samples Y3QN6MS and Y3QN6MSD did not meet the criteria for accuracy and precision specified in the SOW, as shown below.

<u>Analyte</u>	Y3QN6MS	Y3QN6MSD	QC limits		
	<u>% Recovery</u>	<u>% Recovery</u>	<u>RPD</u>	<u>RPD</u>	<u>% Recovery</u>
1,1-Dichloroethene	---	---	20	0-14	-----
Trichloroethene	59	66	--	0-14	71-120
Benzene	---	---	18	0-11	-----
Toluene	---	---	16	0-13	-----
Chlorobenzene	---	---	17	0-13	-----

Results obtained may indicate poor laboratory technique or matrix effects which may interfere with analysis. The detected result for trichloroethene in sample Y3QN6 may be biased low. The effect on data quality for other analytes is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and measurement.

- F. Samples Y3QN5 and Y3QQ0 were reanalyzed at 2-fold and 20-fold dilutions, respectively, due to high levels of trichloroethene that exceeded the calibration range. Results for trichloroethene in samples Y3QN5 and Y3QP0 are reported from the diluted analyses in Table 1A; results for other analytes are reported from the undiluted analyses.

ANALYTICAL RESULTS
Table 1A

Case No. : 36912 SDG No. : Y3QN3
 Site : Alhambra
 Lab : Shealy Environmental Services, Inc.
 Reviewer : Dennis Mayugba, ESAT/LDC
 Date : 03/31/08

QUALIFIED DATA
Concentration in ug/L

Analysis Type :
Trace Level Water Samples
for Trace Volatiles

Trace Volatiles	1		2		3		4		5		6	
	Station Location : Y3QN3	Sample ID : Y3QN3	Y3QN4	Y3QN5	Y3QN6	Y3QN7	D1	Y3QN8	Y3QN7	D1	Y3QN8	EB
	Collection Date : 11/14/2007	Collection Date : 11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007	11/14/2007
	Dilution Factor : 1.0	Dilution Factor : 1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Dichlorodifluoromethane	0.50U			0.50U			0.50U			0.50U		
Chloromethane	0.50U	J	B	0.50U	J	B	0.50U	J	B	0.50U	J	AD
Vinyl chloride	0.56	J	D	0.30L	J	AD	0.069L	J	AD	0.50U		
Bromomethane	0.50U			0.50U			0.50U			0.50U		
Chloroethane	0.50U			0.50U			0.50U			0.50U		
Trichlorofluoromethane	0.50U			0.50U			0.50U			0.50U		
1,1-Dichloroethane	0.50U	J	B	0.50U	J	B	0.50U	J	BE	0.50U	J	B
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50U			0.50U			0.50U			0.50U		
Acetone	5.0U			5.0U			5.0U			5.0U		
Carbon Disulfide	1.4U	J	B	1.4U	J	B	0.50U	J	B	0.50U	J	D
Methyl acetate	0.50U			0.50U			0.50U			0.50U		
Methylene chloride	0.50U	J	B	0.50U	J	B	0.50U	J	B	0.50U	J	B
trans-1,2-Dichloroethene	0.50U			0.50U			0.50U			0.50U		
Methyl tert-butyl ether	0.50U			0.50U			0.50U			0.50U		
1,1-Dichloroethane	0.50U			0.50U			0.50U			0.50U		
cis-1,2-Dichloroethene	0.50U			0.50U			1.8		D	1.4		
2-Butanone	5.0U			5.0U			5.0U			0.20L	J	A
Bromochloromethane	0.50U			0.50U			0.50U			0.50U		
Chloroform	0.50U	J	B	0.50U	J	B	0.55			0.56		B
1,1,1-Trichloroethane	0.50U			0.50U			0.50U			0.50U		
Cyclohexane	0.50U			0.50U			0.50U			0.50U		
Carbon tetrachloride	0.50U			0.50U			0.50U			0.50U		
Benzene	0.50U			0.50U			0.50U		E	0.50U		
1,2-Dichloroethane	0.50U			0.50U			0.50U			0.50U		
Trichloroethene	0.50U			0.50U			14	F	E	2.8	J	A

ANALYTICAL RESULTS
Table 1A

Case No. : 36912 SDG No. : Y3QN3
 Site : Alhambra
 Lab : Shealy Environmental Services, Inc.
 Reviewer : Dennis Mayugba, ESAT/LDC
 Date : 03/31/08

Analysis Type : Trace Level Water Samples
 for Trace Volatiles

QUALIFIED DATA
 Concentration in ug/L

Station Location : Sample ID : Collection Date : Dilution Factor :	1			2			3			4			5			6						
	Result	Val	Com																			
Trace Volatiles	5.0U	J	C	5.0U	J	C																
tertiary butyl alcohol																						

Val - Validity. Refer to Data Qualifiers in Table 1B.
 Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
 CRQL - Contract Required Quantitation Limit
 N/A - Not Applicable
 NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
 FB - Field Blank, EB - Equipment Blank,
 TB - Trip Blank, BG - Background Sample

Case No. : 36912 SDG No. : Y3QN3

ANALYTICAL RESULTS
Table 1A

Site : Alhambra
Lab : Shealy Environmental Services, Inc.
Reviewer : Dennis Mayugba, ESAT/LDC
Date : 03/31/08

QUALIFIED DATA
Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Trace Volatiles	Station Location : Sample ID : Collection Date : Dilution Factor :	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Dichlorofluoromethane	7 Y3QN9 11/14/2007 1.0	0.50U	J	B	8 Y3QP0 11/15/2007 1.0	0.50U	J	AD	9 Y3QP1 11/15/2007 1.0	0.50U	J	B	10 Y3QP2 11/15/2007 1.0	0.50U	J	B
Chloromethane		0.50U				0.15L				0.50U				0.50U		
Vinyl chloride		0.50U				0.50U				0.50U				0.50U		
Bromomethane		0.50U				0.50U				0.50U				0.50U		
Chloroethane		0.50U				0.50U				0.50U				0.50U		
Trichlorofluoromethane		0.50U				0.50U				0.50U				0.50U		
1,1-Dichloroethane		0.50U	J	B		0.50U	J	B		0.50U	J	B		0.50U	J	B
1,1,2-Trichloro-1,2,2-trifluoroethane		0.50U				0.50U				0.50U				0.50U		
Acetone		5.0U				59U	J	B		5.0U	J	B		5.0U	J	B
Carbon Disulfide		0.50U	J	B		0.50U	J	B		1.1	J	D		0.21L	J	AD
Methyl acetate		0.50U				0.50U				0.50U				0.50U		
Methylene chloride		0.50U	J	B		0.50U	J	B		0.50U	J	B		0.50U	J	B
trans-1,2-Dichloroethane		0.50U				0.50U				0.50U				0.50U		
Methyl tert-butyl ether		0.50U				0.067L	J	A		0.50U				0.50U		
1,1-Dichloroethane		0.50U				0.50U				0.50U				0.50U		
cis-1,2-Dichloroethane		1.7	J	D		0.50U				0.50U				0.50U		
2-Butanone		5.0U				2.5L	J	A		5.0U				5.0U		
Bromochloromethane		0.50U				0.50U				0.50U				0.50U		
Chloroform		0.68				0.50U	J	B		0.50U	J	B		0.50U	J	B
1,1,1-Trichloroethane		0.50U				0.50U				0.50U				0.50U		
Cyclohexane		0.50U				0.50U				0.50U				0.50U		
Carbon tetrachloride		0.50U				0.50U				0.50U				0.50U		
Benzene		0.50U				0.50U				0.50U	J	B		0.50U	J	B
1,2-Dichloroethane		0.50U				0.50U				0.50U				0.50U		
Trichloroethene		3.5				0.50U				0.50U				0.50U		

ANALYTICAL RESULTS
Table 1A

SDG No. : Y3QN3

Case No. : 36912

Site : Alhambra

Lab : Shealy Environmental Services, Inc.

Reviewer : Dennis Mayugba, ESAT/LDC

Date : 03/31/08

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Trace Level Water Samples
for Trace Volatiles

Trace Volatiles	7			8			9			10			11			12							
	Station Location : Sample ID : Collection Date : Dilution Factor :	Result	Com	Val	Result	Com	Val	Result	Com	Val	Result	Com	Val	Result	Com	Val	Result	Com					
Methylcyclohexane	Y3QN9 11/14/2007 1.0	0.50U			Y3QP0 11/15/2007 1.0	0.50U			Y3QP1 11/15/2007 1.0	0.50U			Y3QP2 11/15/2007 1.0	0.50U			Y3QP3 11/15/2007 1.0	0.50U		Y3QP4 11/15/2007 1.0	0.50U		
1,2-Dichloropropane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Bromodichloromethane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
cis-1,3-Dichloropropene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
4-Methyl-2-pentanone		5.0U				5.0U				5.0U				5.0U				5.0U			5.0U		
Toluene		0.50U	B	J		0.50U	B	J		0.50U				0.50U				0.50U			0.50U		B
trans-1,3-Dichloropropene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,1,2-Trichloroethane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Tetrachloroethene		0.50U				0.50U				0.50U				0.73				0.51			6.9		
2-Hexanone		5.0U				5.0U				5.0U				5.0U				5.0U			5.0U		
Dibromochloromethane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,2-Dibromoethane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Chlorobenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Ethylbenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
o-Xylene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
m,p-Xylene		0.50U				0.50U		J		0.50U				0.50U				0.50U			0.50U		
Styrene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Bromoform		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
Isopropylbenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,1,2,2-Tetrachloroethane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,3-Dichlorobenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,4-Dichlorobenzene		0.063L		J		0.50U				0.50U				0.50U				0.50U			0.50U		
1,2-Dichlorobenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,2-Dibromo-3-chloropropane		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,2,4-Trichlorobenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		
1,2,3-Trichlorobenzene		0.50U				0.50U				0.50U				0.50U				0.50U			0.50U		

Case No. : 36912 SDG No. : Y3QN3

Site : Alhambra

Lab : Sheeely Environmental Services, Inc.

Reviewer : Dennis Mayugba, ESAT/LDC

Date : 03/31/08

ANALYTICAL RESULTS
Table 1A

QUALIFIED DATA
Concentration in ug/L

Analysis Type : Trace Level Water Samples
for Trace Volatiles

Station Location :	7	8	9	10	11	12
Sample ID :	Y3QN9	Y3QP0	Y3QP1	Y3QP2	Y3QP3	Y3QP4
Collection Date :	11/14/2007	11/15/2007	11/15/2007	11/15/2007	11/15/2007	11/15/2007
Dilution Factor :	1.0	1.0	1.0	1.0	1.0	1.0
Trace Volatiles	Result	Result	Result	Result	Result	Result
	5.0U	12U	5.0U	5.0U	5.0U	5.0U
	Val	Val	Val	Val	Val	Val
	J	J	J	J	J	J
	Com	Com	Com	Com	Com	Com
	C	BC	C	C	C	C
	Result	Result	Result	Result	Result	Result
	5.0U	12U	5.0U	5.0U	5.0U	5.0U
	Val	Val	Val	Val	Val	Val
	J	J	J	J	J	J
	Com	Com	Com	Com	Com	Com
	C	BC	C	C	C	C
	Result	Result	Result	Result	Result	Result
	5.0U	12U	5.0U	5.0U	5.0U	5.0U
	Val	Val	Val	Val	Val	Val
	J	J	J	J	J	J
	Com	Com	Com	Com	Com	Com
	C	BC	C	C	C	C

Val - Validity. Refer to Data Qualifiers in Table 1B.
 Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
 CRQL - Contract Required Quantitation Limit
 N/A - Not Applicable
 NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
 FB - Field Blank, EB - Equipment Blank,
 TB - Trip Blank, BG - Background Sample

ANALYTICAL RESULTS
Table 1A

Case No. : 36912 SDG No. : Y3QN3

Site : Alhambra
Lab : Shealy Environmental Services, Inc.
Reviewer : Dennis Mayugba, ESAT/LDC
Date : 03/31/08

Trace Level Water Samples
for Trace Volatiles

QUALIFIED DATA
Concentration in ug/L

Trace Volatiles	13		14		15		16		18		19	
	Result	Com	Val	Com	Result	Com	Val	Com	Result	Com	Val	Com
Dichlorodifluoromethane	0.50U				0.50U				0.28L	A	0.50U	
Chloromethane	0.50U				0.50U				0.50U		0.50U	
Vinyl chloride	0.50U		J	AD	0.052L				0.50U		0.50U	
Bromomethane	0.50U				0.50U				0.50U		0.50U	
Chloroethane	0.50U				0.50U				0.50U		0.50U	
Trichlorofluoromethane	0.50U				0.50U				0.50U		0.50U	
1,1-Dichloroethene	0.50U	B	J	B	0.50U		J	B	2.4		0.50U	J
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50U				0.50U				0.21L	A	0.50U	
Acetone	5.0U				58				5.0U		63	
Carbon Disulfide	0.10L	AD	J	AD	0.50U				0.50U		0.50U	
Methyl acetate	0.50U				0.50U				0.50U		0.50U	
Methylene chloride	0.50U	B	J	B	0.50U		J	B	0.50U		0.50U	J
trans-1,2-Dichloroethene	0.50U				0.50U				0.20L		0.50U	
Methyl tert-butyl ether	0.50U				0.50U				0.21L	A	0.50U	
1,1-Dichloroethane	0.50U				0.50U				0.25L	A	0.50U	
cis-1,2-Dichloroethene	0.50U				0.50U				4.0	D	0.50U	
2-Butanone	5.0U				5.0U				5.0U		5.0U	
Bromochloromethane	0.50U				0.50U				0.50U		0.50U	
Chloroform	0.50U	B	J	B	0.50U		J	B	1.0		0.50U	J
1,1,1-Trichloroethane	0.50U				0.50U				0.50U		0.50U	
Cyclohexane	0.50U				0.50U				0.50U		0.50U	
Carbon tetrachloride	0.50U				0.50U				1.2		0.50U	
Benzene	0.50U				0.50U				0.50U		0.50U	
1,2-Dichloroethane	0.50U				0.50U				0.61		0.50U	
Trichloroethene	1.4				0.50U				170	F	0.50U	

Case No. : 36912 SDG No. : Y3QNS
 Site : Alhambra
 Lab : Shealy Environmental Services, Inc.
 Reviewer : Dennis Mayugba, ESAT/LDC
 Date : 03/31/08

ANALYTICAL RESULTS
 Table 1A
 QUALIFIED DATA
 Concentration in ug/L

Analysis Type :
 Trace Level Water Samples
 for Trace Volatiles

Trace Volatiles	Method Blank			Method Blank			Storage Blank			Storage Blank			CRQL	Val	Com	Result	Val	Com
	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com						
Dichlorodifluoromethane	0.50U			0.50U			0.50U			0.50U			0.50					
Chloromethane	0.50U			0.34L	J	A	0.50U			0.50U			0.50					
Vinyl chloride	0.50U			0.50U			0.50U			0.50U			0.50					
Bromomethane	0.50U			0.50U			0.50U			0.50U			0.50					
Chloroethane	0.50U			0.50U			0.50U			0.50U			0.50					
Trichlorofluoromethane	0.50U			0.50U			0.50U			0.50U			0.50					
1,1-Dichloroethene	0.058L	J	A	0.063L	J	A	0.50U			0.50U			0.50					
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50U			0.50U			0.50U			0.50U			0.50					
Acetone	5.0U			0.94U			5.0U			5.0U			5.0					
Carbon Disulfide	0.50U			0.50U			0.50U			0.50U			0.50					
Methyl acetate	0.50U			0.50U			0.50U			0.50U			0.50					
Methylene chloride	0.34L	J	A	0.33L	J	A	0.50U			0.50U			0.50					
trans-1,2-Dichloroethane	0.50U			0.50U			0.50U			0.50U			0.50					
Methyl tert-butyl ether	0.50U			0.50U			0.50U			0.50U			0.50					
1,1-Dichloroethane	0.50U			0.50U			0.50U			0.50U			0.50					
cis-1,2-Dichloroethene	0.50U			0.50U			0.50U			0.50U			0.50					
2-Butanone	5.0U			5.0U			5.0U			5.0U			5.0					
Bromochloromethane	0.50U			0.50U			0.50U			0.50U			0.50					
Chloroform	0.099L	J	A	0.10L	J	A	0.50U			0.50U			0.50					
1,1,1-Trichloroethane	0.50U			0.50U			0.50U			0.50U			0.50					
Cyclohexane	0.50U			0.50U			0.50U			0.50U			0.50					
Carbon tetrachloride	0.50U			0.50U			0.50U			0.50U			0.50					
Benzene	0.50U			0.50U			0.051L	J	A	0.50U			0.50					
1,2-Dichloroethane	0.50U			0.50U			0.50U			0.50U			0.50					
1,4-Dioxane	20U			20U			20U			20U			20					
Trichloroethene	0.50U			0.50U			0.50U			0.50U			0.50					

ANALYTICAL RESULTS
Table 1A

Case No. : 36912 SDG No. : Y3QN3

Site : Alhambra

Lab : Shealy Environmental Services, Inc.

Reviewer : Dennis Mayugba, ESAT/LDC

Date : 03/31/08

Analysis Type : Trace Level Water Samples
for Trace Volatiles

QUALIFIED DATA
Concentration in ug/L

Station Location : Sample ID : Collection Date : Dilution Factor :	Method Blank VBLK19		Method Blank VBLK20		Storage Blank VHBLK33		Storage Blank VHBLK33RE		CRQL	
	Result	Com	Result	Com	Result	Com	Result	Com	Result	Com
Trace Volatiles										
Methylcyclohexane	0.50U		0.50U		0.50U		0.50U		0.50	
1,2-Dichloropropane	0.50U		0.50U		0.50U		0.50U		0.50	
Bromodichloromethane	0.50U		0.50U		0.50U		0.50U		0.50	
cis-1,3-Dichloropropene	0.50U		0.50U		0.50U		0.50U		0.50	
4-Methyl-2-pentanone	5.0U		5.0U		5.0U		5.0U		5.0	
Toluene	0.50U		0.50U		0.085L	J	0.50U		0.50	
trans-1,3-Dichloropropene	0.50U		0.50U		0.50U		0.50U		0.50	
1,1,2-Trichloroethane	0.50U		0.50U		0.50U		0.50U		0.50	
Tetrachloroethene	0.50U		0.50U		0.50U		0.50U		0.50	
2-Hexanone	5.0U		5.0U		5.0U		5.0U		5.0	
Dibromochloromethane	0.50U		0.50U		0.50U		0.50U		0.50	
1,2-Dibromoethane	0.50U		0.50U		0.50U		0.50U		0.50	
Chlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	
Ethylbenzene	0.50U		0.50U		0.50U		0.50U		0.50	
o-Xylene	0.50U		0.50U		0.50U		0.50U		0.50	
m,p-Xylene	0.50U		0.50U		0.50U		0.50U		0.50	
Styrene	0.50U		0.50U		0.50U		0.50U		0.50	
Bromoform	0.50U		0.50U		0.50U		0.50U		0.50	
Isopropylbenzene	0.50U		0.50U		0.50U		0.50U		0.50	
1,1,2,2-Tetrachloroethane	0.50U		0.50U		0.50U		0.50U		0.50	
1,3-Dichlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	
1,4-Dichlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	
1,2-Dichlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	
1,2-Dibromo-3-chloropropane	0.50U		0.50U		0.50U		0.50U		0.50	
1,2,4-Trichlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	
1,2,3-Trichlorobenzene	0.50U		0.50U		0.50U		0.50U		0.50	

Case No. : 36912 SDG No. : Y3QIN3
 Site : Alhambra
 Lab : Shealy Environmental Services, Inc.
 Reviewer : Dennis Mayugba, ESAT/LLDC
 Date : 03/31/08

ANALYTICAL RESULTS
Table 1A
QUALIFIED DATA
 Concentration in ug/L

Analysis Type : Trace Level Water Samples
 for Trace Volatiles

Station Location : Sample ID : Collection Date : Dilution Factor :	Method Blank VBLK19	Method Blank VBLK20	Storage Blank VHBLK33	Storage Blank VHBLK33RE	CRQL													
	1.0	1.0	1.0	1.0														
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
tertiary butyl alcohol	5.0U	J	C	5.0U	J	C	5.0U	J	C	5.0U	J	C	5.0					

Val - Validity. Refer to Data Qualifiers in Table 1B.
 Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.
 CRQL - Contract Required Quantitation Limit
 N/A - Not Applicable
 NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs
 FB - Field Blank, EB - Equipment Blank,
 TB - Trip Blank, BG - Background Sample

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," July 2007.

- U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.



Rose Fong/R9/USEPA/US
03/21/2008 05:39 PM

To Santiago Lee/R9/USEPA/US@EPA
cc
bcc

Subject Clarification of field QC samples for Alhambra Case 36912
November sampling

----- Forwarded by Rose Fong/R9/USEPA/US on 03/21/2008 05:36 PM -----



<Vikas.Mathur@CH2M.com>
03/21/2008 05:32 PM

To <Kimberly.Waite@CH2M.com>
cc Rose Fong/R9/USEPA/US@EPA,
<benjamin.lechler@ch2m.com>,
<Sarah.Lopez@CH2M.com>, <michael.palm@ch2m.com>,
Lisa Hanusiak/R9/USEPA/US@EPA
Subject RE: Questions on field QC samples for Alhambra Case
36912 November sampling

Kim:

I spoke with our field team lead Mike Palm, and he agrees that it appears that the sample IDs for the equipment blank sample and duplicate sample were switched. The blank was actually the duplicate sample. This would explain why the blank sample had results similar to the primary sample (because it actually was a duplicate sample).

To clarify, the correct sample IDs for Nov. 14, 2007 are:
Y3QN7 - Primary sample for MW1-3 Zone 5
Y3QN9 - Duplicate sample for MW1-3 Zone 5
Y3QN8 - Equipment blank sample

In the future, Mike has assured me that samples will be labeled immediately after collection, to avoid any potential for mislabeling.

Thanks,
Vik

Vikas (Vik) Mathur
Associate Geologist
ph (714) 429-2000 x.6110
fax (714) 424-2210

----- Forwarded by Rose Fong/R9/USEPA/US on 03/12/2008 11:37 AM -----

Rose
Fong/R9/USEPA/US
02/11/2008 09:57
AM

To
<Benjamin.Lechler@CH2M.com>
cc
Lisa Hanusiak/R9/USEPA/US@EPA
Subject
Re: Area 3 QA/QC Summary November
2007 (Document link: Rose Fong)

BJ,

The data validation of CLP Case 36912 is in progress and there are several questions about the field QC samples. Please see below, and verify the designations of the samples. Thanks.

The Field QA/QC Summary Form indicated that Y3QN9 is an equipment blank. However, several analytes were detected in Y3QN9, including > cis-1,2-dichloroethene and trichloroethene at concentrations of 1.7 ug/L and 3.5 ug/L, respectively.

>
> In addition, the Field QA/QC Summary Form identified Y3QN7 and Y3QN8 as field duplicates. Analytical results, however, are very > different. cis-1,2-Dichloroethene (1.4 ug/L) and trichloroethene (2.8 ug/L) were detected in Y3QN7 but not detected in Y3QN8 (0.50U); > carbon disulfide was not detected in Y3QN7 (0.50U) but detected in Y3QN8 (1.1 ug/L).

>
> Please verify whether Y3QN9 is an equipment blank and whether Y3QN7 and Y3QN8 are field duplicates.

<Benjamin.Lechler@CH2M.com> wrote on 11/21/2007 10:28:42 AM:

> Hi Rose,

>
> Here is the QA/QC Summary Form for samples sent to Shealy > Environmental (CLP), EMAX (Army Corps), and Region 9 lab for the Area > 3 sampling conducted between November 14 - November 19, 2006. > The CLP case # is 36912 and the Region 9 project number is R08S11.

>
> Please contact me with any questions or concerns.

>
> Thanks,

>
> BJ

>
> Benjamin J. Lechler, P.G.
> Associate Hydrogeologist
> CH2M HILL/SCO
> (direct) 714-435-6283
> (cell) 714-697-4203
> (fax) 714-424-2233 [attachment "SGVArea3_QAQCSummary_Nov07.pdf"
> deleted by Rose Fong/R9/USEPA/US]

TVOA Fraction

The peak eluting at ~4.3min on MSD8 in all analyses is pentafluorobenzene. This is an internal standard compound that is not being used for quantitation. This compound is not being identified as a TIC.

SMO was informed of the following discrepancies and the Region issued resolutions:

1. The TR/COC listed the analysis as VOA; however per scheduling, the analysis should be TVOA. Per the Region, the lab processed these samples by TVOA method.
2. The lab received two samples that had labels that did not match the TR/COC. Sample Y3QP7 was listed on the TR with a collection time of 1215; however there was no sample labeled Y3QP7. There was a sample collected at 1215 which was labeled Y3QP6. On the TR, there was sample Y3PP6 collected at 1155; however the collection time of 1155 matched the sample labeled Y3QP5 and there was another sample collected at 1135 labeled as Y3QP5. Per the Region, the correct collection times are: Y3QP4 (1100), Y3QP5 (1135), Y3QP6 (1155) and Y3QP7 (1215).

Manual integration was performed on vinyl chloride-d3 for Y3QN5 and Y3QN5DL due to incorrect auto integration.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.


Dr. Robert Zhu
Technical Director

12/3/07

1J - FORM I VOA-TIC
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Y3QP5

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36912

Mod. Ref No.: 1391.1 SDG No.: Y3QN3

Matrix: (SOIL/SED/WATER) Water

Lab Sample ID: IK16006-006

Sample wt/vol: 25.0 (g/mL) mL

Lab File ID: 81120B17

Level: (TRACE or LOW/MED) TRACE

Date Received: 11/16/2007

% Moisture: not dec. _____

Date Analyzed: 11/20/2007

GC Column: DB-624 ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	3.795	0.77	J
02	104-76-7	1 Hexanel, 2-ethyl	11.775	0.82	NJ
03					
04		SL, 3/28/08			
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹EPA-designated Registry Number.

2A - FORM II VOA-1
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36912

Mod. Ref No.: 1391.1 SDG No.: Y3QN3

Level: (TRACE or LOW) TRACE

EPA SAMPLE NO.	VDMC1 (VCL) #	VDMC2 (CLA) #	VDMC3 (DCE) #	VDMC4 (BUT) #	VDMC5 (CLF) #	VDMC6 (DCA) #	VDMC7 (BEN) #
01 VBLK19	110	89	72	133	90	102	91
02 Y3QN3	174 *	155 *	104	107	111	112	116
03 Y3QN4	169 *	154 *	101	100	113	107	115
04 Y3QN5	154 *	154 *	99	108	113	111	114
05 VBLK20	119	82	73	115	89	103	92
06 Y3QN5DL	156 *	156 *	103	112	115	114	117
07 Y3QN6MS	166 *	157 *	139 *	115	114	114	117
08 Y3QN6MSD	158 *	136 *	127 *	106	108	109	111
09 Y3QN6	172 *	158 *	106 *	112	118	116	120
10 Y3QN7	167 *	164 *	104	109	116	117	117
11 Y3QN8	184 *	171 *	109 *	102	119	116	120
12 Y3QN9	177 *	171 *	105 *	120	124 *	123	124
13 VHBLK33RE	154 *	149 *	96	108	110	109	109
14 VHBLK33	158 *	153 *	100	111	112	112	113
15 Y3QP8	172 *	157 *	108 *	114	119	118	121
16 Y3QQ0	172 *	163 *	120 *	113	118	119	122
17 Y3QQ0DL	165 *	151 *	101	105	109	109	110
18 Y3QQ1	168 *	157 *	106 *	119	116	118	118
19 Y3QP0	175 *	162 *	107 *	115	118	117	118
20 Y3QP1	171 *	154 *	100	110	113	113	117
21 Y3QP2	174 *	164 *	105 *	110	118	115	120
22 Y3QP3	171 *	162 *	103	106	115	114	118
23 Y3QP4	166 *	151 *	100	109	110	110	113
24 Y3QP5	166 *	153 *	98	104	111	111	114
25 Y3QP6	169 *	154 *	103	113	119	119	122
26 Y3QP7	155 *	139 *	94	100	104	103	106
27							
28							
29							
30							

QC LIMITS

VDMC1 (VCL) = Vinyl chloride-d₃ (65-131)
VDMC2 (CLA) = Chloroethane-d₅ (71-131)
VDMC3 (DCE) = 1,1-Dichloroethene-d₂ (55-104)
VDMC4 (BUT) = 2-Butanone-d₅ (49-155)
VDMC5 (CLF) = Chloroform-d (78-121)
VDMC6 (DCA) = 1,2-Dichloroethane-d₄ (78-129)
VDMC7 (BEN) = Benzene-d₆ (77-124)

Column to be used to flag recovery values
* Values outside of contract required QC limits

2B - FORM II VOA-2
WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: Shealy Environmental Services, Inc.

Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 36912

Mod. Ref No.: 1391.1 SDG No.: Y3QN3

Level: (TRACE or LOW) TRACE

	EPA SAMPLE NO.	VDMC8 (DPA) #	VDMC9 (TOL) #	VDMC10 (TDP) #	VDMC11 (HEX) #	VDMC12 (DXE) #	VDMC13 (TCA) #	VDMC14 (DCZ) #	TOT
01	VBLK19	87	88	96	125		96	98	0
02	Y3QN3	103	113	105	109		99	113	2
03	Y3QN4	103	113	94	107		99	113	3
04	Y3QN5	104	109	99	110		103	113	2
05	VBLK20	88	89	93	114		98	98	0
06	Y3QN5DL	106	114	102	112		105	115	2
07	Y3QN6MS	105	113	101	114		102	112	3
08	Y3QN6MSD	99	108	94	107		100	109	3
09	Y3QN6	108	116	103	112		106	117	3
10	Y3QN7	106	113	101	111		102	115	2
11	Y3QN8	109	117	94	111		103	117	3
12	Y3QN9	111	118	103	119		111	121	4
13	VHBLK33RE	98	105	90	105		99	107	2
14	VHBLK33	101	109	93	108		102	110	2
15	Y3QP8	108	119	103	112		105	118	3
16	Y3QQ0	111	120	105	116		107	120	3
17	Y3QQ0DL	100	108	91	104		97	108	2
18	Y3QQ1	106	115	100	116		110	116	3
19	Y3QP0	106	113	99	112		104	113	3
20	Y3QP1	105	112	86	109		101	113	2
21	Y3QP2	106	113	90	112		108	114	4
22	Y3QP3	106	114	91	108		104	112	3
23	Y3QP4	102	109	88	108		99	109	2
24	Y3QP5	103	108	91	107		97	111	2
25	Y3QP6	108	117	105	113		102	120	2
26	Y3QP7	95	102	90	99		91	105	2
27					*				
28									
29									
30									

QC LIMITS

VDMC8 (DPA) = 1,2-Dichloropropane-d ₆	(79-124)
VDMC9 (TOL) = Toluene-d ₈	(77-121)
VDMC10 (TDP) = trans-1,3-Dichloropropene-d ₄	(73-121)
VDMC11 (HEX) = 2-Hexanone-d ₅	(28-135)
VDMC12 (DXE) = 1,4-Dioxane-d ₈	(50-150)
VDMC13 (TCA) = 1,1,2,2-Tetrachloroethane-d ₂	(73-125)
VDMC14 (DCZ) = 1,2-Dichlorobenzene-d ₄	(80-131)

Column to be used to flag recovery values

* Values outside of contract required QC limits

Report 1,4-Dioxane-d₈ for Low-Medium VOA analysis only