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MCB CAMP LEJUENE
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VALIDATED DATA PACKAGE, S1426, MCB CAMP LEJUENE NC
4/12/2015
ENVIRONMENTAL DATA SERVICES

**DATA VALIDATION SUMMARY REPORT
MCB CAMP LEJEUNE, NORTH CAROLINA**

Client: CH2M HILL, Inc., Virginia Beach, Virginia
SDG: SI1426
Laboratory: Katahdin Analytical Services, Scarborough, Maine
Site: MCB Camp Lejeune, SWMU 299, CTO-WE2A
Date: April 12, 2015

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	SWMU299-GW02-15A	SI1426-1	Water
1MS	SWMU299-GW02-15AMS	SI1426-1MS	Water
1MSD	SWMU299-GW02-15AMSD	SI1426-1MSD	Water
2	SWMU299-GW02D-15A	SI1426-2	Water
3	SWMU299-EB-030515	SI1426-3	Water
4	SWMU299-TB-030515	SI1426-4	Water

A full data validation was performed on the analytical data for two water samples, one aqueous equipment blank sample, and one aqueous trip blank sample collected on March 5, 2015 by CH2M HILL at MCB Camp Lejeune in North Carolina. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis
VOCs (Benzene)

Method References
USEPA SW-846 Method 8260B

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA "Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," June 2008;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Holding times and sample preservation
- Gas Chromatography/Mass Spectroscopy (GC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field blank contamination
- Surrogate Spike recoveries

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample (LCS) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Tentatively Identified Compounds (TICs)
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Overall Usability Issues:

There were no rejections of data. Overall the data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Volatile Organic Compounds (Benzene only)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.
- The trip blank sample was not listed on the COC, however, the client instructed the laboratory to analyze the sample.

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and/or correlation coefficients and mean RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Qualifier	Affected Samples
SWMU299-EB-030515	None - ND	-	-	-
SWMU299-TB-030515	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable %R and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- All criteria were met.

Tentatively Identified Compounds (TICs)

- TICs were not reported.

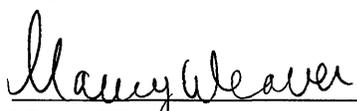
Field Duplicate Sample Precision

- Field duplicate results are summarized below.

VOCs				
Compound	SWMU299-GW02-15A ug/L	SWMU299-GW02D-15A ug/L	RPD	Qualifier
Benzene	2.7	2.7	0%	None

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed:


Nancy Weaver
Senior Chemist

Dated: 4/13/15

Data Qualifiers

- 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.
- 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.
- 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).
- 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 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.
- NJ = The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Report of Analytical Results

Client: CH2MHill	Sample Date: 05-MAR-15	Analysis Date: 12-MAR-15
Lab ID: SI1426-1	Received Date: 09-MAR-15	Analyst: EME
Client ID: SWMU299-GW02-15A	Extract Date: 12-MAR-15	Analysis Method: SW846 8260B
Project: MCB Camp Lejeune CTO-WE2A SWM	Extracted By: EME	Matrix: AQ
SDG: SI1426	Extraction Method: SW846 5030	% Solids: NA
Lab File ID: C1765.D	Lab Prep Batch: WG159541	Report Date: 13-MAR-15

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Benzene		2.7	ug/L	1	1	1.0	0.26	0.50
P-Bromofluorobenzene		90.3	%					
Toluene-d8		94.2	%					
1,2-Dichloroethane-d4		92.2	%					
Dibromofluoromethane		94.8	%					

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Report of Analytical Results

Client: CH2MHill	Sample Date: 05-MAR-15	Analysis Date: 12-MAR-15
Lab ID: SI1426-2	Received Date: 09-MAR-15	Analyst: EME
Client ID: SWMU299-GW02D-15A	Extract Date: 12-MAR-15	Analysis Method: SW846 8260B
Project: MCB Camp Lejeune CTO-WE2A SWM	Extracted By: EME	Matrix: AQ
SDG: SI1426	Extraction Method: SW846 5030	% Solids: NA
Lab File ID: C1766.D	Lab Prep Batch: WG159541	Report Date: 13-MAR-15

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Benzene		2.7	ug/L	1	1	1.0	0.26	0.50
P-Bromofluorobenzene		90.0	%					
Toluene-d8		93.7	%					
1,2-Dichloroethane-d4		93.9	%					
Dibromofluoromethane		95.5	%					

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Report of Analytical Results

Client: CH2MHill **Sample Date:** 05-MAR-15 **Analysis Date:** 12-MAR-15
Lab ID: SI1426-3 **Received Date:** 09-MAR-15 **Analyst:** EME
Client ID: SWMU299-EB-030515 **Extract Date:** 12-MAR-15 **Analysis Method:** SW846 8260B
Project: MCB Camp Lejeune CTO-WE2A SWM **Extracted By:** EME **Matrix:** AQ
SDG: SI1426 **Extraction Method:** SW846 5030 **% Solids:** NA
Lab File ID: C1767.D **Lab Prep Batch:** WG159541 **Report Date:** 13-MAR-15

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Bromofluorobenzene		92.3	%					
Toluene-d8		95.9	%					
1,2-Dichloroethane-d4		97.4	%					
Dibromofluoromethane		96.7	%					

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Report of Analytical Results

Client: CH2MHill	Sample Date: 05-MAR-15	Analysis Date: 12-MAR-15
Lab ID: SI1426-4	Received Date: 09-MAR-15	Analyst: EME
Client ID: SWMU299-TB-030515	Extract Date: 12-MAR-15	Analysis Method: SW846 8260B
Project: MCB Camp Lejeune CTO-WE2A SWM	Extracted By: EME	Matrix: AQ
SDG: SI1426	Extraction Method: SW846 5030	% Solids: NA
Lab File ID: C1768.D	Lab Prep Batch: WG159541	Report Date: 13-MAR-15

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Bromofluorobenzene		91.1	%					
Toluene-d8		93.0	%					
1,2-Dichloroethane-d4		97.5	%					
Dibromofluoromethane		98.8	%					

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