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Date: September 18, 2019

To: Rob Ede
Hahn and Associates Inc.

From: Jeanne Peterson
Project Manager, AQA

Subject: Data Validation
Gasco Mult 802 Decommissioning
Apex Laboratories, LLC Work Order A9F0692

SUMMARY

Level II (i.e., EPA Stage 2A) data validation was performed on the data for three water samples prepared and analyzed using approved procedures for method SW846 8260C (VOCs). Data were reported for all requested analytes.

The analytical data were evaluated in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (October 1999) and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (February 1994) (NFG, collectively), and the applicable methods.

In general, the data are valid as reported. No data were rejected. Other qualifiers were applied to the data as specified in the Data Qualifiers section below.

See attached data validation spreadsheets for supporting documentation on the data review and validation.

SAMPLES

The samples included in this validation are listed below.

Sample ID	APEX Sample ID	Analysis	Matrix
2708-190620-MULT802-TB	A9F0692-01	VOCs	Water
2708-190620-MULT802-107	A9F0692-02	VOCs	Water
2708-190620-MULT802-108	A9F0692-03	VOCs	Water

DATA QUALIFIERS (see following sections for detailed explanations)

Sample ID	Method	Analyte	Qualifier	Qualifier Code	Reason for Qualification
2708-190620-MULT802-TB	8260C	Bromomethane	UJ	10	Low laboratory control sample recovery
2708-190620-MULT802-107	8260C	Bromomethane	UJ	10	Low laboratory control sample recovery
2708-190620-MULT802-108	8260C	Bromomethane	UJ	10	Low laboratory control sample recovery

DISCUSSION

Sample Shipping/Receiving

All COC, analysis request, and sample receipt documentation was complete and correct with the following exceptions.

The sample receipt section of the COCs was not completed; the information was documented on the Cooler Receipt Form.

The sample matrix was not indicated on the COC.

The collection time for sample 2708-190620-MULT802-TB was **02**:00 on the COC but was logged in as **14**:00.

One of two unpreserved 1-L amber bottles for sample 2708-190620-MULT802-107 was received empty with no collection time on the container.

Holding Times and Preservation

The samples were properly preserved and analyzed within the prescribed holding times with the following exceptions.

Method 8260C

The pH of the samples at the time of analysis was not included in the Level II data package. There were no preservation problems noted by the laboratory; therefore, it was assumed that the samples were properly preserved and no data were qualified.

Blanks

Acetone was detected in the trip blank. The associated sample results were non-detects and, therefore, were not qualified.

No target analytes were detected in the method blank. Field blanks were not collected with the samples in this work order.

Surrogates

All surrogate recoveries were within laboratory QC acceptance criteria.

Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD analyses met laboratory QC acceptance criteria.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD analyses met laboratory QC acceptance criteria with the following exception.

The MS recovery was > the upper acceptance limit for chloroethane. The MS analysis was performed on a non-project sample; therefore, no sample results were qualified based on professional judgment.

Laboratory Duplicate

The laboratory duplicate analysis (sample/duplicate) was within laboratory QC acceptance criteria. It should be noted that the laboratory duplicate analysis was performed on a non-project sample.

Field Duplicate

A field duplicate was not collected with the samples in this data package.

Reporting Limits

All reporting limits (RLs) were properly reported. Sample 2708-190620-MULT802-107 was diluted 100X for VOCs and sample 2708-190620-MULT802-108 was diluted 10X for VOCs. Reporting limits were adjusted accordingly.

Other QC

No other specific issues that affect data quality were identified.

Hahn Data Validation Summary Worksheet

SDG#: A9E0692	Laboratory: Apex	Validator: Jeanne Peterson	Validation Date: 08/28/2019
Site: Mult 802 Decommissioning	COC#: 1		Validation Level: ☒ II ☐ III
Matrix: Water	# of Samples: 1	Tracking docs present: See sample receipt and log-in documentation	
COCs present: Yes	COCs signed: Yes	COCs dated: Yes	Sample Container Integrity: OK

Analyses:
☒ VOCs ☐ SVOCs ☐ PAHs ☐ GRO ☐ DRO ☐ Pests ☐ PCBs ☐ Metals ☐ Gen Chem ☐ Cyanide
☐ Other: VPH/EPH

Requested Analyses Not Reported

Client Sample ID	Lab Sample ID	Analysis	Comments
None			

Hold Time/Preservation Outliers

Client Sample ID	Lab Sample ID	Analysis	Pres.	Collection Date	Preparation Date	Analysis Date	Analysis <2X HT	Analysis ≥2X HT
None								

Comments: Samples collected 06/20/2019;
Temp and containers not completed on COC; documented on Cooler Receipt Form.
Sample collection time 02:00 on COC for TB but logged in as 14:00.
1 of 2 unpreserved 1-L amber bottles for sample 2708-190620-MULT802-107 received empty with no collection time on container.

Hahn Level III GCMS Worksheet

SDG: A9E0692	Method: 8260C	Matrix: Water	Lab Sample ID: A9E0692-01, -02, -03
Seq/Batch #s: --/9061200			

Tuning: ☐ Pass ☐ Fail TICs Required? ☐ Yes ☒ No *(lab limits)* *(lab limits)*

Analyte (outliers)	**Calibration**				**Method Blank**	**5X (10X) Method Blank**	**LCS %R**	**MS %R**	**MSD %R**	**MS/ MSD RPD**	**LAB DUP RPD**	**TB**		
	RF ≥0.05	**RSD/r²** ≤30% ≥0.990	**ICV[1] %D** ±25%	**CCV %D** ±25%										
Chloroethane					✓	NA	✓	144	NA	NA	✓	✓		
Acetone					✓	NA	✓	✓	NA	NA	✓	27.1		

Surrogate Recovery Outliers *(method/lab limits)*

Sample ID	DBFM	1,4-DCB	Tol-d8	4-BFB	**Sample ID**	DBFM	1,4-DCB	Tol-d8	4-BFB
None									

IS Outliers *(-50% to +100% of CCV)*

Sample ID	**Area**	**RT**	**Area**	**RT**	**Area**	**RT**	**Area**	**RT**	**Area**	**RT**	**Area**	**RT**
NA												

Comments: HTs OK.
MB, LCS, -01, -02, -03, unknown Dup1, unknown MS
Sample -02 diluted 100X, sample -03 diluted 10X