SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51837
SDG: BH439
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4930
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4930-01	BG439		1.0
P4930-01DL	BG439DL	Trace-VOA	1.0
P4930-02	BG440		1.0
P4930-02DL	BG440DL	Trace-VOA	1.0
P4930-02RE	BG440RE	Trace-VOA	1.0
P4930-03	BG441		1.0
P4930-03DL	BG441DL	Trace-VOA	1.0
P4930-04	BG442		1.0
P4930-05	BG443		1.0
P4930-06	BG444		1.0
P4930-06DL	BG444DL	Trace-VOA	1.0
P4930-07	BG445		1.0
P4930-07DL	BG445DL	Trace-VOA	1.0
P4930-08	BG446		1.0
P4930-09	BG447		1.0

09 Water samples were delivered to the laboratory intact on 11/19/2024.

Test requested on the Chain of Custody was Trace Volatile Organic, Semivolatile Organic by Method SFAM01.1.

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.2 degree Celsius for the samples received on 11/19/2024.

Shipping Discrepancies and/or QC issues:

LAB: “Thanks for the resolution. However, resolution is complete for the sample BG440 as how should lab proceed with the reporting of this sample? Should lab report all the analysis?”

QSS INPUT: All 3 analyses should be included in the EDD data deliverable. The best analytical

results for the analytes are to be reported as the final result under the ReportedResult nodes. The final results for the analytes not impacted by the dilution and CCV failures should be from the initial analysis.

REGION: “Please advise per QSS input below. Thanks.”

Trace Volatiles:

The analysis performed on instrument MSVOA_V were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI.
The analysis of VOC-SFAM was based on method SFAM01.1_Trace.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for,
BG439 [1,1-Dichloroethene-d2 - 59%, 1,2-Dichlorobenzene-d4 - 73%, Benzene-d6 - 62%, Toluene-d8 - 49%],
BG439DL [Toluene-d8 - 66%],
BG440 [Toluene-d8 - 68%],
BG440DL [Toluene-d8 - 64%],
BG440RE [Toluene-d8 - 65%],
BG441 [Toluene-d8 - 65%],
BG441DL [1,1,2,2-Tetrachloroethane-d2 - 124%, 2-Butanone-d5 - 147%, Toluene-d8 - 64%],
BG442 [Toluene-d8 - 61%],
BG443 [Toluene-d8 - 67%],
BG444 [Toluene-d8 - 64%],
BG444DL [Toluene-d8 - 67%],
BG445 [1,1,2,2-Tetrachloroethane-d2 - 129%, 1,2-Dichlorobenzene-d4 - 120%, 1,2-Dichloroethane-d4 - 135%, 2-Butanone-d5 - 153%, 2-Hexanone-d5 - 135%],
BG445DL [Toluene-d8 - 65%],
BG446 [Toluene-d8 - 66%],
BG447 [Toluene-d8 - 65%],
VIBLK207 [Toluene-d8 - 65%],
VIBLK208 [Toluene-d8 - 64%],
As per method, up to three surrogates are allowed to fail. No corrective action was taken except for Lab has analyzed samples of this SDG in an overnight analytical sequence and associated CCV was outside the QC limits for one of the analytes. As a corrective action, Lab has re-analyzed the affected samples for TVOA analysis. In re-analysis, samples BG439 & BG445 have more than three surrogates are outside the QC limits and samples also required dilution to bring target analytes within calibration range,therefore Lab Reported re-analysis with surrogate failure and further dilution in final Hard Copy, Please see EPA communication after SDG Narrative.

The Internal Standards Areas met the acceptable requirements.
Instrument Performance Check met requirements.
The Retention Times met requirements.

The Tuning criteria met requirements.

The initial Calibration criteria met requirements.

The Continuing Calibration (VSTD005311) file ID VV038257.D met the requirements except for cis-1,3-Dichloropropene (-21.4%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Continuing Calibration (VSTD005312) file ID VV038281.D met the requirements except for Bromomethane (52.4%).. Under this Continuous Calibration only sample was analyzed. As a Corrective Action This Sample was Reanalyzed,and both the run are Reported, . Please see EPA communication after SDG Narrative.

The End Continuing Calibration (VSTD005313) file ID VV038295.D met the requirements except for Bromomethane (56%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Continuing Calibration (VSTD005320) file ID VV038357.D met the requirements except for Vinyl Chloride-d3 (-36.8%) and 1,1-Dichloroethene-d2 (-28.4%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Continuing Calibration (VSTD005322) file ID VV038378.D met the requirements except for Vinyl Chloride-d3 (-35.4%) and 1,1-Dichloroethene-d2 (-26.1%). As per method, up to two target analyte in opening and closing CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Blank analysis indicated presence of Tetrachloroethene [0.33ug/L] FileID:VV038282.D (VBLK261) {VV1122WBL02} due to possible lab contamination. As per method, less than the respective CRQL is allowed to fail for Tetrachloroethene. Therefore no further corrective action was taken.

The storage blank analysis did not indicate the presence of lab contamination.

Samples BG439, BG440, BG441, BG444 and BG445 were diluted due to high concentrations.

Sample BG440 was required dilution detected high and associated CCV was outside the QC limits as mentioned above. Lab also analyzed the dilution as per initial analysis. As a corrective action of CCV failure, Lab reanalyzed the sample and previous sample had high concentration of the target analytes and instrument blank was not analyzed in between to confirm the concentration. Lab does not have any sample volume left to perform the corrective action therefore Lab reported all the three runs in final hard copy, Please see EPA communication after SDG Narrative.

See **Manual Integration report** for the manual integration information at the end of the case narrative.

Calculation:

Low/Med Water Level Calculation

$$\text{Concentration in ug/L} = \frac{(Ax)\,(Is)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where,
Ax = Area of the characteristic ion (EICP) for the compound to be measured.
Ais = Area of the characteristic ion (EICP) for the internal standard.
Amount of internal standard added in ng.
RRF = Mean Relative Response Factor from the initial calibration standard.
Vo = Total volume of water purged, in mL.
DF = Dilution Factor

Example calculation of **BG439** for **1,1-Dichloroethene**:

Ax= 99098
Is = 125
RRF= 0.357
DF= 1
Ais= 239599
Vo. = 25

$$\text{Concentration in ug/L} = \frac{(99098)\,(125)\,(1)}{(239599)(0.357)(25)}$$

Reported Result = 5.79 ug/L

Final Reported Result = 5.8 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VV111924** for **5.0** ppb

$$RRF = \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}}$$

$$RRF = \frac{127957}{278011} \times \frac{5.0}{5.0}$$

RRF= 0.460

Semivolatiles:

The samples were analyzed on instrument BNA_P using GC Column ZB-GR Semi Volatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA.

Semis volatile Organic sample for water sample was extracted by Method SFAM01.1 on 11/21/2024, The analysis of SVOCMS Group4 was based on method SFAM01.1_SVOC.

The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable except criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The Blank Spike for {PB165168BS} recoveries met the requirements for all compounds.
The Blank analysis did not indicate the presence of lab contamination.
The Tuning criteria met the requirements.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.

Concentration of Water Sample:

$$\text{Concentration ug/L} = \frac{(Ax)\,(Is)\,(Vt)\,(DF)\,(GPC)}{(Ais)\,(\overline{RRF})\,(Vo)\,(Vi)}$$

Where,
Ax = Area of the characteristic ion for the compound to be measured.
Ais = Area of the characteristic ion for the internal standard.
Is = Amount of internal standard injected in ng.
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL
RRF = Mean Relative Response Factor determined from the initial calibration standard.
GPC = $\frac{Vin}{}$ = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of BG439 for 1,4-Dioxane:

Ax = 4886
Ais = 80257
Is = 20
DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 0.481
GPC = 1

Concentration ug/L = $\frac{(4886)\ (20)\ (1000)\ (1)\ (1)}{(80257)\ (0.481)\ (1000)\ (1)}$

= 2.5 ug/L

RRF Calculation of standard 20 ppb for **1,4-Dioxane** with P instrument for method 11/09/2024.

RRF= Area of compound / Area of Internal Standard X Conc. of Internal Standard / Conc. of Compound

= 10486/53999 X 20/8

= 0.485 (Reported RRF)

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature _____ Name: Nimisha Pandya.

Date: _____ Title: Document Control Officer.