



SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC

CASE: 51953

SDG: C0AF2

CONTRACT: 68HERH20D0011

LAB CODE: ACE

LAB ORDER ID: Q1126

MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
Q1126-01	C0AF2		1.0
Q1126-02	C0AF3		1.0
Q1126-02DL	C0AF3DL	TVOA	1.0
Q1126-03	C0AF4		1.0
Q1126-03DL	C0AF4DL	TVOA	1.0
Q1126-04	C0AH7		1.0

04 Water samples were delivered to the laboratory intact on 01/17/2025.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.6, 2.8, degree Celsius for the samples received on 01/17/2025.

Trace Volatiles:

The analysis performed on instrument MSVOA_U 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.

Holding Times were met requirement.

The Surrogate recoveries met the acceptable criteria Except for,

C0AF2 [Chloroethane-d5 - 56%, Toluene-d8 - 50%],

C0AF3DL [Chloroethane-d5 - 62%, Toluene-d8 - 69%],

C0AF4DL [2-Butanone-d5 - 131%],

C0AH7 [2-Butanone-d5 - 131%, Chloroethane-d5 - 62% and Toluene-d8 - 68%],

As per method, up to three surrogates are allowed to fail. No corrective action was taken.

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 criteria met requirements.

The Blank analysis did not indicate the presence of lab contamination.

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

Samples C0AF3, C0AF4 were diluted due to high concentrations.

The sample C0AF4 was analyzed following the analysis of C0AF3. Both samples had common hit of compound with concentration above calibration levels for 1,1,1-Trichloroethane. It was reanalyzed at a diluted. As per method, no instrument blank was required and not analyzed.

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

Calculation:

Low/Med Water Level Calculation

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = 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.

V_o = Total volume of water purged, in mL.

DF = Dilution Factor

Example calculation of **C0AF3** for **1,1-Dichloroethene**:

$$A_x = 22235$$

$$I_s = 125$$

$$RRF = 0.310$$

$$DF = 1$$

$$A_{is} = 87619$$

$$V_o = 25$$

$$\text{Concentration in ug/L} = \frac{(22235) (125) (1)}{(87619)(0.310)(25)}$$



Reported Result = 4.09 ug/L

Final Reported Result = 4.1 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VU010225** for **0.5** ppb

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

$$\text{RRF} = \frac{4870}{100728} \times \frac{5.0}{0.5}$$

$$\text{RRF} = 0.483$$

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 01/20/2025, 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 { PB166142BS } 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:

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

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.

V_t = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC = $\frac{V_{in}}{V_{out}}$ = GPC factor (If no GPC is performed, GPC=1)

V_{out} = Volume of extract collected after GPC cleanup.

Example calculation of C0AF3 for 1,4-Dioxane:

A_x = 34991

A_{is} = 723342

I_s = 20

DF = 1

V_o = 1000

V_i = 1

V_t = 1000

RRF = 0.574

GPC = 1

$$\text{Concentration ug/L} = \frac{(34991) (20) (1000) (1) (1)}{(723342) (0.574) (1000) (1)}$$

$$= 1.7 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **1,4-Dioxane** with P instrument for method 01/14/2025.

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

$$= 125580/513940 \times 20/8$$

$$= 0.611 \text{ (Reported RRF)}$$

Semivolatiles SIM:

The samples were analyzed on instrument BNA_M 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 01/20/2025. The analysis of SVOCMS Group3 was based on method SFAM01.1_SVOC.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria.

The Internal Standards Areas met the acceptable requirements.

The Retention Times were acceptable for all samples.

The Blank Spike for {PB166143BS} recoveries met the requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Tuning criteria met requirements.
The Initial Calibration met requirements.
The Continuous Calibration met requirements.

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

Concentration of Water Sample:

$$\text{Concentration ug/L} = \frac{(A_x) (I_s) (V_t) (DF) (GPC)}{(A_{is}) (\overline{RRF}) (V_o) (V_i)}$$

Where,

A_x = Area of the characteristic ion for the compound to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

I_s = Amount of internal standard injected in ng.

V_o = Volume of water extracted in mL.

V_i = Volume of extract injected in uL.

V_t = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC = $\frac{V_{in}}{V_{out}}$ = GPC factor (If no GPC is performed, GPC=1)

Example calculation of C0AF3 for 1,4-Dioxane:

$$A_x = 16272$$

$$A_{is} = 6018$$

$$I_s = 0.4$$

$$DF = 1$$

$$V_o = 1000$$

$$V_i = 1$$

$$V_t = 1000$$

$$RRF = 0.524$$

$$GPC = 1$$

$$\text{Concentration ug/L} = \frac{(16272) (0.4) (1000) (1) (1)}{(6018) (0.524) (1000) (1)}$$

$$= 2.1 \text{ ug/L}$$

RRF Calculation of standard 0.4 ppb for **1,4-Dioxane** with M instrument for method 01/17/2025.

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



= 3289/5918 X 0.4/0.4

= 0.556 (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.