

**SDG NARRATIVE****LAB NAME: Alliance Technical Group, LLC****CASE: 51782****SDG: GCPC3****CONTRACT: 68HERH20D0011****LAB CODE: ACE****LAB ORDER ID: P4802****MODIFICATION REF. NUMBER: NA**

Sample ID	EPA Sample ID	pH
P4802-01	GCPC3	
P4802-02	GCPC4	
P4802-03	GCPC5	
P4802-04	GCPC6	
P4802-05	GCPC7	
P4802-06	GCPC8	
P4802-07	GCPC9	
P4802-08	GCPD0	
P4802-09	GCPD1	
P4802-10	GCPD2	
P4802-11	GCPD3	
P4802-12	GCPD4	
P4802-13	GCPD5	
P4802-14MS	GCPD5MS	
P4802-15MSD	GCPD5MSD	
P4802-16	GCPD6	
P4802-17	GCPD7	

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

Test requested on the Chain of Custody was 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 2.1, 2.3, 2.5, 1.5, 2.3 degree Celsius for the samples received on 11/09/2024.

Semivolatiles:

The samples were analyzed on instrument BNA_G 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.

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 11/11/2024 and 11/12/2024, 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 MS {GCPD5MS} recovery met the requirements for all compounds.

The MSD {GCPD5MSD} recovery met the requirements for all compounds.

The RPD {GCPD5MSD} RPD met the requirements for all compounds

The Blank Spike for {PB164901BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164922BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164924BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164929BS} 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:

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

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)

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

Example calculation of GCPC6 for 1,4-Dioxane:

$$A_x = 3700$$

$$A_{is} = 106843$$

$$I_s = 20$$

$DF = 1$
 $V_o = 1000$
 $V_i = 1$
 $V_t = 1000$
 $RRF = 0.545$
 $GPC = 1$

$$\begin{aligned}
 \text{Concentration ug/L} &= \frac{(3700) (20) (1000) (1) (1)}{(106843) (0.545) (1000) (1)} \\
 &= 1.3 \text{ ug/L}
 \end{aligned}$$

RRF Calculation of standard 20 ppb for **1,4-Dioxane** with G instrument for method 11/06/2024.

$$\begin{aligned}
 RRF &= \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}} \\
 &= 13189/53454 \times 20/8 \\
 &= 0.617 \text{ (Reported RRF)}
 \end{aligned}$$

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 11/11/2024 and 11/12/2024. 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 MS {GCPD5MS} recovery met the requirements for all compounds.

The MSD {GCPD5MSD} recovery met the requirements for all compounds.

The RPD {GCPD5MSD} RPD met the requirements for all compounds

The Blank Spike for {PB164902BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164923BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164925BS} recoveries met the requirements for all compounds.

The Blank Spike for {PB164930BS} 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 GCPC3 for 1,4-Dioxane:

$$A_x = 1369$$

$$A_{is} = 3881$$

$$I_s = 0.4$$

$$DF = 1$$

$$V_o = 1000$$

$$V_i = 1$$

$$V_t = 1000$$

$$RRF = 0.555$$

$$GPC = 1$$

$$\begin{aligned} \text{Concentration ug/L} &= \frac{(1369) (0.4) (1000) (1) (1)}{(3881) (0.555) (1000) (1)} \\ &= 0.25 \text{ ug/L} \end{aligned}$$

RRF Calculation of standard 0.4 ppb for **1,4-dioxane** with M instrument for method 11/06/2024.

$$\begin{aligned} RRF &= \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}} \\ &= 2152/3648 \times 0.4/0.4 \end{aligned}$$



= 0.590 (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.