



SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC

CASE: 51736

SDG: A4EA6

CONTRACT: 68HERH20D0011

LAB CODE: ACE

LAB ORDER ID: P4585

MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4585-01	A4EA6		
P4585-02	A4EA7		
P4585-02DL	A4EA7DL	SVOA	
P4585-03	A4EC3		1.0
P4585-04	A4ED8		
P4585-05	A4ED9		
P4585-06	A4EE0		
P4585-07MS	A4EE0MS		
P4585-08MSD	A4EE0MSD		

07 Soil samples were delivered to the laboratory intact on 10/26/2024.

01 Water sample was delivered to the laboratory intact on 10/26/2024.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 3.1 degree Celsius for the samples received on 10/26/2024.

Low Volatiles:

The analysis performed on instrument MSVOA_U were done using GC column RXI-624SIL MS 30m 0.18mm 1.4 um. Cat#13868.

The analysis performed on instrument MSVOA_W were done using GC column RXI-624SIL MS 30m 0.18mm 1.4 um. Cat#13868.

The analysis of VOC-SFAM was based on method SFAM01.1_LOW.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria.

The Internal Standards Areas met the acceptable requirements.

Instrument Performance Check met requirements.

The Retention Times were met for all samples.

The Tuning criteria met requirements.

The MS {A4EE0MS} recovery met the requirements for all compounds.

The MSD {A4EE0MSD} recovery met the requirements for all compounds.

The RPD {A4EE0MSD} RPD met the requirements for all compounds.

The Initial Calibration met the requirements.

The Continuing Calibration (VSTD025547) file ID VW030874.D met the requirements except for 1,2-Dichloroethane-d4 (25.9%). 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 did not indicate the presence of lab contamination.

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

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

Low/Med Level Soil/Sediment Calculation

$$\text{Concentration in ug/Kg dry Weight basis) = } \frac{(A_x)(I_s)(D_f)}{(A_{is})(RRF)(W_s)(D)}$$

Where,

A_x = Area for the compound to be measured

A_{is} = Area for the specific internal standard

I_s = Amount of internal standard added in Nano grams (ng)

RRF = Relative response factor of the calibration standard.



Df = Dilution factor

Ws= Weight of sample

D= $\frac{100 - \% \text{moisture}}{100}$

Example Calculation for sample: **A4EA6** for **Methylene chloride**:

Ax= 436687

Is= 250

RRF= 0.378

DF=1

Ais= 363890

Ws= 5.00

D= 1

Concentration in ug/KG = $\frac{(436687) (250) (1)}{(363890) (0.378) (5.00) (1)}$

= 158.73 ug//Kg

Final Reported Results = 160 ug/Kg

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VW100924** for **2.5** ppb

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

RRF= $\frac{11869}{356470} \times \frac{25}{2.5}$

RRF= 0.333

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_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 for water sample was extracted by Method SFAM01.1 on 10/29/2024 and for soil sample was extracted by Method SFAM01.1 on 11/05/2024, The analysis of SVO-SFAM was based on method SFAM01.1_SVOC.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for,
A4ED9 [1,4-Dioxane-d8 - 11%, 4,6-Dinitro-2-methylphenol-d2 - 8%],
A4EE0 [1,4-Dioxane-d8 - 11%, 4,6-Dinitro-2-methylphenol-d2 - 8%, Benzo(a)pyrene-d12 - 9%, Fluorene-d10 - 17%],
A4EE0MS [1,4-Dioxane-d8 - 13%, 2-Chlorophenol-d4 - 13%, 4,6-Dinitro-2-methylphenol-d2 - 9%, Acenaphthylene-d8 - 12%, Benzo(a)pyrene-d12 - 7%, Fluorene-d10 - 12%] and
A4EE0MSD [1,4-Dioxane-d8 - 7%, 2-Chlorophenol-d4 - 12%, 4,6-Dinitro-2-methylphenol-d2 - 9%, Acenaphthylene-d8 - 12%, Benzo(a)pyrene-d12 - 7%, Fluorene-d10 - 12%]. As per method four surrogates are allowed to fail. AS per SOW no corrective action required for Surrogate fail in MS/MSD, Therefore No corrective action taken for surrogate fail in A4EE0MS/MSD.
Therefore no further corrective action was taken.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {A4EE0MS} recovery met the requirements for all compounds.
The MSD {A4EE0MSD} recovery met the requirements for all compounds.
The RPD {A4EE0MSD} RPD met the requirements for all compounds
The Blank Spike for {PB164682BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164726BS} 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.

Sample A4EA7 was diluted due to high concentration.

Samples A4ED9 has the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

PB164682BL analyzed twice in different instrument, first time in BNA_G and Second time in BNA_M. However our sample associated with this BL run in BNA_G, so BNA_M instrument raw data reported as Screening Data in the package.

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

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

Concentration of SOIL Sample:

Concentration ug/Kg,

$$(\text{dry weight basis}) = \frac{(A_x) (I_s) (V_t) (D_f) (GPC)}{(A_{is}) (RRF) (V_i) (W_t) (D)}$$

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_i = Volume of extract injected in microliters (uL)

V_t = Volume of concentrated extract in microliters (uL)

W_t = Weight of the original sample extracted in g

D_f = Dilution factor

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

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

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

$D = 100 - \% \text{moisture}$

$$\frac{\text{-----}}{100}$$

Example calculation of A4EA7 for Phenol:

$A_x = 133417$

$A_{is} = 71912$

$I_s = 20$

$V_i = 1$

$V_t = 500$

$W_t = 30.0$

$D_f = 1$

RRF = 1.967

GPC = 2

$D = 1$

Concentration



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$$\begin{aligned} \text{(dry weight basis) ug/Kg} &= \frac{(133417) (20) (500) (1) (2)}{(71912) (1.967) (1) (30.0) (1)} \\ &= 630 \text{ ug/Kg} \end{aligned}$$

RRF Calculation of standard 20 ppb for Naphthalene with G instrument for method 11/06/2024.

$$\begin{aligned} \text{RRF} &= \frac{\text{Area of compound}}{\text{Area of Internal Standard}} \times \frac{\text{Conc. of Internal Standard}}{\text{Conc. of Compound}} \\ &= 267121/252685 \times 20/20 \\ &= 1.057 \text{ (Reported RRF)} \end{aligned}$$

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.