

**SDG NARRATIVE****LAB NAME: Alliance Technical Group, LLC****CASE: 51736****SDG: A4EE1****CONTRACT: 68HERH20D0011****LAB CODE: ACE****LAB ORDER ID: P4586****MODIFICATION REF. NUMBER: NA**

Sample ID	EPA Sample ID	pH
P4586-01	A4EE1	
P4586-02	A4EE9	
P4586-03MS	A4EE9MS	
P4586-04MSD	A4EE9MSD	

04 Soil samples were 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_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 except for A4EE9MSD [1,1,2,2-Tetrachloroethane-d2 - 142%, 2-Butanone-d5 - 146%, 2-Hexanone-d5 - 174%].

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 were met for all samples.

The Tuning criteria met requirements.

The MS {A4EE9MS} recovery met the requirements for all compounds.

The MSD {A4EE9MSD} recovery met the requirements for all compounds.

The RPD {A4EE9MSD} 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 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.

D_f = Dilution factor

W_s = Weight of sample

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

Example Calculation for sample: **A4EE9** for **Trichlorofluoromethane**:

$$A_x = 1788$$

$$I_s = 250$$

$$RRF = 0.408$$

$$DF = 1$$

$$A_{is} = 361682$$

$$W_s = 5.34$$

$$D = 0.834$$

$$\text{Concentration in ug/KG} = \frac{(1788)(250)(1)}{(361682)(0.408)(5.34)(0.834)}$$

$$= 0.680 \text{ ug//Kg}$$

Final Reported Results = 0.68 ug/Kg

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

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

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

$$\text{RRF} = 0.333$$

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.

Semis volatile Organic 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,
A4EE1 [1,4-Dioxane-d8 - 12%],
A4EE9 [1,4-Dioxane-d8 - 10%],
A4EE9MS [1,4-Dioxane-d8 - 13%, Benzo(a)pyrene-d12 - 8%, Fluorene-d10 - 16%] and
A4EE9MSD [Benzo(a)pyrene-d12 - 7%, Fluorene-d10 - 15%]. As per method four surrogates are allowed to fail. 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 {A4EE9MS} recovery met the requirements for all compounds.

The MSD {A4EE9MSD} recovery met the requirements for all compounds.

The RPD {A4EE9MSD} RPD met the requirements for all compounds

The Blank Spike for {PB164682BS} 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 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.

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

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

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

Example calculation of A4EE9 for Acetophenone:

$$A_x = 54310$$

$$A_{is} = 88475$$

$$I_s = 20$$

$$V_i = 1$$

$$V_t = 500$$

$$W_t = 30.1$$

$$D_f = 1$$

$$RRF = 2.463$$

$$GPC = 2$$

$$D = 0.834$$

Concentration

$$(\text{dry weight basis}) \text{ ug/Kg} = \frac{(54310) (20) (500) (1) (2)}{(88475) (2.463) (1) (30.1) (0.834)}$$

$$= 200 \text{ ug/Kg}$$



5 of 5

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

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

$$= 267121/252685 \times 20/20$$

$$= 1.057 \text{ (Reported RRF)}$$

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.