SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51736
SDG: A4EE7
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4582
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	pH
P4582-01	A4EE7	
P4582-02	A4EE8	
P4582-03MS	A4EE8MS	
P4582-04MSD	A4EE8MSD	
P4582-05	A4EF0	
P4582-06	A4FF3	5.0
P4582-09	A4EC0	
P4582-10	A4EC5	1.0
P4582-11	A4FE1	5.0

05 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.
01 Soil sample was delivered to the laboratory intact on 10/30/2024.
02 Water samples were delivered to the laboratory intact on 10/30/2024.

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 1.9 degree Celsius for the samples received on 10/26/2024, 2.4 degree Celsius for the samples received on 10/30/2024.

Shipping Discrepancies and/or QC issues:

Issue 01: “Lab has received trip blank samples without any preservation therefore, Lab would like to confirm that these trip blanks have pH more than 2 due to samples were not preserved.”

Resolution 01: “Confirmed. Please have the lab proceed with analysis of these trip blanks.”

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 except for A4EE8MSD [1,1,2,2-Tetrachloroethane-d2 - 154%, 1,2-Dichloropropane-d6 - 120%, 2-Butanone-d5 - 177%, 2-Hexanone-d5 - 197%]. A4EE8MSD which is not required the corrective action for failing Surrogate recoveries in MS/MSD.

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 {A4EE8MS} recovery met the requirements for all compounds.
The MSD {A4EE8MSD} recovery met the requirements for all compounds.
The RPD {A4EE8MSD} RPD met the requirements for all compounds.

The Initial Calibration met the requirements.

The Continuing Calibration (VSTD025545) file ID VW030849.D met the requirements except for 1,1,2,2-Tetrachloroethane-d2 (26.3%). 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 End Continuing Calibration (VSTD025546) file ID VW030872.D met the requirements except for 2-Hexanone-d5 (55.0%). 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 (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 f**or the manual integration information at the end of the case narrative.

Calculation:

Low/Med Level Soil/Sediment Calculation

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

Where,
Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in Nano grams (ng)
RRF = Relative response factor of the calibration standard.
Df = Dilution factor
Ws= Weight of sample

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

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 for sample: **A4EC5** for **Acetone**:

Ax= 26993
Is= 250
RRF= 0.213
DF=1
Ais= 253918
Vo.= 5

$$\text{Concentration in ug/KG} = \frac{(26993)\,(250)\,(1)}{(253918)\,(0.213)\,(5)}$$

= 24.95 ug/L

Final Reported Results = 25 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VU102824** for **5.0** ppb

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

RRF= 7934 / 250437 X 25 / 2.5

RRF= 0.317

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 11/01/2024 and for soil sample was extracted by Method SFAM01.1 on 11/03/2024, 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,
A4EF0 [4,6-Dinitro-2-methylphenol-d2 - 9%],
A4EC0 [1,4-Dioxane-d8 - 13%, 4,6-Dinitro-2-methylphenol-d2 - 7%, Fluorene-d10 - 18%].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 {A4EE8MS} recovery met the requirements for all compounds.
The MSD {A4EE8MSD} recovery met the requirements for all compounds.
The RPD {A4EE8MSD} RPD met the requirements for all compounds
The Blank Spike for {PB164612BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB164616BS} 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.

Samples A4EC5 has the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

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.

Concentration of SOIL Sample:

Concentration ug/Kg,

$$\text{(dry weight basis)} = \frac{(Ax)\,(Is)\,(Vt)\,(DF)\,(GPC)}{(Ais)\,(RRF)\,(Vi)\,(Wt)\,(D)}$$

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.
Vi = Volume of extract injected in microliters (uL)
Vt = Volume of concentrated extract in microliters (uL)
Wt = Weight of the original sample extracted in g
Df = Dilution factor
RRF = Mean Relative Response Factor determined from the initial calibration standard.
GPC = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

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

Example calculation of A4EC0 for Phenol:

Ax = 13600
Ais = 119528
Is = 20
Vi = 1
Vt = 500
Wt = 30.1
Df = 1
RRF = 1.967
GPC = 2
D= 0.827

Concentration
(dry weight basis) ug/Kg = $\frac{(13600)\,(20)\,(500)\,(1)\,(2)}{(119528)\,(1.967)\,(1)\,(30.1)\,(0.827)}$

= 46 ug/Kg

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

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

= 267121/252685 X 20/20

= 1.057 (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.