SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51716
SDG: C0PI0
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: P4634
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
P4634-01	C0PI0		
P4634-02	C0PI2		
P4634-03	C0PI6		
P4634-04	C0PI8		
P4634-05	C0PI9		
P4634-06	CC0P1		
P4634-07	CC0P3		
P4634-08	CC0P5		
P4634-09	CC0P7		
P4634-10	CC0P9		
P4634-11	CC0Q1		
P4634-12	CC0Q6		
P4634-13	CC0Q8		
P4634-14	CC0R3		
P4634-15	CC0R4		
P4634-15DL	CC0R4DL	SVOA	
P4634-15RX	CC0R4RX	PEST	
P4634-16	CC0R5		
P4634-17	CC0R7		
P4634-18MS	CC0R7MS		
P4634-19MSD	CC0R7MSD		

19 Soil samples were delivered to the laboratory intact on 10/29/2024.

Test requested on the Chain of Custody was Semi volatile Organic, Semi volatile Organic-SIM and Pesticide by Method SFAM01.1.

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.1 degree Celsius for the samples received on 10/29/2024.

Shipping Discrepancies and/or QC issues:

Issue 01: The COC does not list a CLP Case number; would the Region please confirm if the correct Case number for the samples listed is 51716.

Resolution 01: Per Region 3, a revised COC listing the correct Case number for the samples is attached. Please note the issue in the SDG Narrative and proceed with the analysis of the samples.

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 11/01/2024, 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,
CC0Q8 [1,4-Dioxane-d8 - 13%, Fluorene-d10 - 19%] and
CC0R4DL [4,6-Dinitro-2-methylphenol-d2 - 0%].The DMC recovery requirements do not apply to samples that have been diluted. 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 Blank Spike for {PB164608BS} 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 CC0R4 was diluted due to high concentration.

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 C0PI2 for Acetophenone:

Ax = 54073
Ais = 88549
Is = 20
Vi = 1
Vt = 500
Wt = 30.1
Df = 1
RRF = 2.463
GPC = 2
D= 0.947

Concentration

$$\text{(dry weight basis) ug/Kg} = \frac{(54073)(20)(500)(1)(2)}{(88549)(2.463)(1)(30.1)(0947)}$$

= 170 ug/Kg

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

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

= 267121/252685 X 20/20

= 1.057 (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 Soil sample was extracted by Method SFAM01.1 on 11/01/2024. The analysis of SVOC-SIM-SFAM 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 {PB164609BS} 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.

Samples CC0P9 has the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

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

Concentration of SOIL Sample:

Concentration ug/Kg,

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

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 C0PI2 for Naphthalene:

Ax = 969
Ais = 16666
Is = 0.4
Vi = 1
Vt = 500
Wt = 30.1
Df = 1
RRF = 1.002
GPC = 2
D= 0.947

Concentration

(dry weight basis) ug/Kg = $\frac{(969)\ (0.4)\ (500)\ (1)\ (2)}{(16666)\ (1.002)\ (1)\ (30.1)\ (0.947)}$

= 0.81 ug/Kg

RRF Calculation of standard 0.4 ppb for **Naphthalene** with M instrument for method 11/06/2024.

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

= 11768/11347 X 0.4/0.4

= 1.037 (Reported RRF)

Pesticides:

The analyses for Pesticides were performed on instrument ECD_D. The front column is ZB-Multi-Residue-2 which is 30 meters, 0.32 mm ID, 0.2 um df. The rear column ZB-Multi-Residue-1 which is 30 meters, 0.32 mm ID, 0.50 um df.

The sample was analyzed on a single injection dual column system. To distinguish the second column analysis from the first column a -2 suffix was added to the file id on the form 1. These refer to forms were both columns are reported. Form 1s for the IBLK and PLCS are referenced as IBLK(1)/IBLK(2), MS(1)/MS(2), MSD(1)/MSD(2) and PLCS01(1) / PLCS01(2) respectively.

Pesticide sample was extracted by method SFAM01.1 on 11/01 and 11/06/2024 and analyzed on 11/05 and 11/07/2024. The sample was extracted and analyzed within contractual holding time.

The soil sample was subjected to Florisil and GPC Cleanup.

The Surrogate recoveries met the acceptable criteria except for
C0PI0 [Decachlorobiphenyl(1)- 26%, Decachlorobiphenyl(2)- 29%],
C0PI6 [Decachlorobiphenyl(1)- 29%],
C0PI8 [Decachlorobiphenyl(1)- 28%],
C0PI9 [Decachlorobiphenyl(1)- 29%],
CC0P7 [Decachlorobiphenyl(1)- 22%, Decachlorobiphenyl(2)- 21%],
CC0P9 [Decachlorobiphenyl(1)- 18%, Decachlorobiphenyl(2)- 24%],
CC0Q1 [Decachlorobiphenyl(1)- 29%],
CC0Q8 [Decachlorobiphenyl(1)- 23%],
CC0R4 [Tetrachloro-m-xylene(1)-655%, Decachlorobiphenyl(1)- 21%, Decachlorobiphenyl(2)- 20%],
CC0R4RX[Tetrachloro-m-xylene(1)-1237%,Decachlorobiphenyl(1)-10%,
Decachlorobiphenyl(2)- 12%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Pesticide Analysis).

CC0R7MS met the requirements.
CC0R7MSD met the requirements.
The RPD met the requirements

The Blank analysis did not indicate the presence of lab contamination.
Blank and Laboratory Control Sample met the requirements.
Retention Times met the requirements.
Florisil check met the requirements.
Resolution Check met the requirements.
The Retention Times were acceptable for all samples.
The Initial Calibration met the requirements.
The Individual Mix A met the requirements.
The Individual Mix B met the requirements.
The PEM met the requirement.

Samples C0PI2, C0PI8, CC0P3, CC0P5, CC0P7, CC0P9, CC0Q1, CC0Q8, CC0R3, CC0R4 and CC0R4RX failed to meet the %D for the results between the two columns Criteria.

Samples C0PI8 have the concentration of target compounds - Endosulfan I, cis-chlordane and 4,4'-DDT,
sample CC0R3 have the concentration of target compounds – Endrin,
below Method detection limits therefore it is not reported as hit in Form1.

Sample CC0R4 having surrogate fail from PB164610. Therefore sample was Re-extracted and reanalyzed from PB164727.

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

Calculation for the Concentration in Soil Samples

$$\text{Concentration ug/Kg (Dry weight basis)} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vi)\,(Ws)\,(D)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vt = Volume of the concentrated extract in uL
Vi = Volume of extract injected (uL). (If a single injection is made onto two columns, use ½ the volume in the syringe as the volume injected onto each column).
Ws = Weight of sample extracted (g).
D = % dry weight or $\frac{100 - \%\text{Moisture}}{100}$
GPC = $\frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)

DF = Dilution Factor.

Example of 4,4'-DDT calculation
Calibration Factor Calculation 4,4'-DDT in the first column

$$\text{Calibration factor (CF)} = \frac{\text{peak area}}{\text{Mass injected in ng}}$$

$$= \frac{15258496}{10\text{ng}}$$

$$= 1525850$$

Mean Calibration Factor = average of 5 point calibration factor

$$= 1667240$$

Sample **CC0P5**
Ax = 23918408
CF = 1667240

Ws =30.0
Vi = 1.0
Vt = 5000
DF = 1.0
GPC = 2.0
D = 0.889

Concentration ug/Kg (Dry weight basis) = $\frac{(Ax)\ (Vt)\ (DF)\ (GPC)}{(CF)\ (Vi)\ (Ws)\ (D)}$

$= \frac{(23918408)\ (5000)\ (1.0)\ (2.0)}{(1667240)(1.0)(30.0)(0.889)}$

= 5.37

Reported Results = 5.4 ug/kg

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.