SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51955
SDG: YE8F5
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: Q1108
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	pH
Q1108-01	YE8F5	
Q1108-02	YE8F7	
Q1108-03MS	YE8F7MS	
Q1108-04MSD	YE8F7MSD	
Q1108-05	YE8G0	
Q1108-06	YE8G1	
Q1108-07	YE8G2	
Q1108-08	YE8F6	
Q1108-09	YE8F8	
Q1108-10	YE8F9	
Q1108-12	YE8H7	1.0
Q1108-13	YE8H8	1.0
Q1108-14	YE8E3	
Q1108-15	YE8E4	
Q1108-16	YE8E5	
Q1108-17	YE8E6	
Q1108-19	YE8H9	
Q1108-20	YE8J0	
Q1108-21	YE8J1	

10 Soil samples were delivered to the laboratory intact on 01/16/2025.
07 Soil samples were delivered to the laboratory intact on 01/18/2025.
02 Water samples were delivered to the laboratory intact on 01/18/2025.

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

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.4, 1.8 degree Celsius for the samples received on 01/16/2025, 1.2, 1.5, 2.1 degree Celsius for the samples received on 01/18/2025.

Shipping Discrepancies and/or QC issues:

Issue 1: The COC indicates that water sample YE8H8 should be analyzed by VOA, but water samples are not scheduled for VOA analysis. Please advise on how the laboratory may proceed.

Resolution 1: Per Region 9, proceed with analyzing sample YE8H8 by TVOA as scheduled. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

Trace Volatiles:

The analysis performed on instrument MSVOA_V were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI.
The analysis of VOC-SFAM was based on method SFAM01.1_Trace.
Holding Times were met requirement.

The Surrogate recoveries met the acceptable criteria Except for,
YE8H7 [2-Butanone-d5 - 132%, Toluene-d8 - 68%],
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 met requirements.
The Tuning criteria met requirements.

The initial Calibration criteria met requirements.

The Continuing Calibration (VSTD005330) file ID VV038474.D met the requirements except for 4-Methyl-2-pentanone (34.1%). 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 (VSTD005332) file ID VV038496.D met the requirements except for Toluene (20.3%) and Tetrachloroethene (21.2%). 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 analysis 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

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

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 of **YE8H7** for **Acetone**:

Ax=9442
Is = 125
RRF= 0.067
DF= 1
Ais= 131720
Vo. = 25

$$\text{Concentration in ug/L} = \frac{(9442)\,(125)\,(1)}{(131720)(0.067)(25)}$$

Reported Result = 5.35 ug/L

Final Reported Result = 5.3 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VV011725** for **0.5** ppb

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

$$RRF = \frac{11771}{194122} \times \frac{5.0}{0.5}$$

RRF= 0.606

Low Volatiles:

The analysis performed on instrument MSVOA_W were done using GC column RXI-624SIL MS 30m 0.25mm 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 {YE8F7MS} recovery met the requirements for all compounds.
The MSD {YE8F7MSD} recovery met the requirements for all compounds.
The RPD {YE8F7MSD} RPD met the requirements for all compounds.

The initial Calibration met the requirements.
The Continuing Calibration met the requirements.

The Blank analysis analysis did not indicated the presence of lab Contamination.
The Storage blank analysis did not indicated 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

Concentration in ug/Kg dry Weight basis) = $\frac{(A_x)(I_s)(D_f)}{(Ais)(RRF)(Ws)(D)}$ ____

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

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

No positive target compounds were detected in the samples.

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VW011025** for **2.5** ppb

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

RRF= 23796 / 679147 X 25 / 2.5

RRF= 0.350

Semivolatiles:

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.

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 for water sample was extracted by Method SFAM01.1 on 01/20/2025. for soil sample was extracted by Method SFAM01.1 on 01/20/2025, 01/22/2025, The analysis of SVOC-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,
YE8G0 [4,6-Dinitro-2-methylphenol-d2 - 5%, Benzo(a)pyrene-d12 - 4%] and
YE8F6 [4,6-Dinitro-2-methylphenol-d2 - 7%].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 {YE8F7MS} recovery met the requirements for all compounds.
The MSD {YE8F7MSD} recovery met the requirements for all compounds.
The RPD {YE8F7MSD} RPD met the requirements for all compounds
The Blank Spike for {PB166142BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166145BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166176BS} 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 (SSTD020770) with File ID BP023651.D met the requirement except for 2-Nitrophenol-d4 (31.5%), As per method up to four target analytes and DMCs with maximum %D requirements of less than 40.0% may fail to meet the maximum %D criteria listed

in Exhibit D – SVOA, Table 5, but these compounds must still meet the maximum %D requirement of 40.0%. No further corrective action was taken.

The Continuous Calibration (SSTD020771) with File ID BP023662.D met the requirement except for 2-Nitrophenol-d4 (33.3%), As per method up to four target analytes and DMCs with maximum %D requirements of less than 40.0% may fail to meet the maximum %D criteria listed in Exhibit D – SVOA, Table 5, but these compounds must still meet the maximum %D requirement of 40.0%. No further corrective action was taken.

The Continuous Calibration (SSTD020772) with File ID BP023675.D met the requirement except for 2-Nitrophenol-d4 (31.6%), As per method up to four target analytes and DMCs with maximum %D requirements of less than 40.0% may fail to meet the maximum %D criteria listed in Exhibit D – SVOA, Table 5, but these compounds must still meet the maximum %D requirement of 40.0%. No further corrective action was taken.

Samples YE8F7 havs the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

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.

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

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 = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of YE8H7 for Benzaldehyde:

Ax = 30941
Ais = 586393
Is = 20
DF = 1
Vo = 980
Vi = 1
Vt = 1000
RRF = 0.930
GPC = 1

$$\text{Concentration ug/L} = \frac{(30941)\,(20)\,(1000)\,(1)\,(1)}{(586393)\,(0.930)\,(980)\,(1)}$$

$$= 1.2 \text{ ug/L}$$

RRF Calculation of standard 20 ppb for **Naphthalene** with P instrument for method 01/14/2025.

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

= 2687055/2194626X 20/20

= 1.224 (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.