SDG NARRATIVE

LAB NAME: Alliance Technical Group, LLC
CASE: 51900
SDG: E2975
CONTRACT: 68HERH20D0011
LAB CODE: ACE
LAB ORDER ID: Q1202
MODIFICATION REF. NUMBER: 3064.0

Sample ID	EPA Sample ID	Test
Q1202-01	E2975	
Q1202-02MS	E2975MS	
Q1202-03MSD	E2975MSD	
Q1202-04	E2978	
Q1202-05	E2979	
Q1202-07	E2977	
Q1202-08	E2980	
Q1202-09	E29A0	
Q1202-10	E29A1	
Q1202-11	E29A2	
Q1202-12	E29A3	
Q1202-13	E29A4	
Q1202-14	E29A5	
Q1202-15	E29A7	
Q1202-16	E29A8	
Q1202-17	E29B0	
Q1202-17DL	E29B0DL	SVOC,SVOASIM
Q1202-17RE	E29B0RE	SVOASIM
Q1202-18	E29B1	
Q1202-18DL	E29B1DL	SVOASIM
Q1202-19	E29B3	
Q1202-19DL	E29B3DL	SVOC,SVOASIM
Q1202-19DL2	E29B3DL2	SVOC
Q1202-20	E29B4	
Q1202-20DL	E29B4DL	SVOC,SVOASIM

07 Water samples were delivered to the laboratory intact on 01/28/2025.
08 Water samples were delivered to the laboratory intact on 01/31/2025.
04 Water samples were delivered to the laboratory intact on 02/01/2025.

Test requested on the Chain of Custody was Semivolatile Organic, Semivolatile Organic SIM, Pesticide and Aroclor by Method SFAM01.1.

The temperature of the samples was measured using an I R Gun. The samples temperature was 3.1, 2.9, 2.6 degree Celsius for the samples received on 01/28/2025, 3.2, 2.1, 3.6, 2.3 degree Celsius for the samples received on 01/31/2025, 1.8, 2.1 degree Celsius for the samples received on 02/01/2025.

Shipping Discrepancies and/or QC issues:

Issue 1: One amber for sample E29A3 was received but SVOA, SVOA SIM, 1,4-Dioxane SIM, PEST and ARO analyses are all required. The laboratory would like direction on how to proceed with the limited volume.

Resolution 1: Per Region 5, the laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples for SVOA and SVOA SIM (including 1,4-Dioxane SIM).

Issue 2: “Lab has received water samples for SVOA full scan and SIM-PAH analysis. Lab has analyzed undiluted SIM-PAH analysis for the samples E29B1, E29B3 & E29B4. Samples found positive with high concentrations of target analytes and required dilution to bring target analytes within calibration range. Due to matrix interference, samples have one of the internal standard recoveries outside the QC limits as you can see attached forms for your reference. In this case, Lab will report undiluted SIM-PAH analysis with internal standard failure and further dilution for final electronic deliverables.

Resolution 2: “USACE is ok with the lab’s proposed path forward – reporting the undiluted with surrogate failures as well as the diluted results.”

Semivolatiles:

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 sample for water sample was extracted by Method SFAM01.1 on 01/30/2025, 01/31/2025 and 02/01/2025, 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,
E29B0DL [4,6-Dinitro-2-methylphenol-d2 - 0%],

E29B3DL [Bis-(2-Chloroethyl)ether-d8 - 125%],
E29B3DL2 [1,4-Dioxane-d8 - 0%, 4,6-Dinitro-2-methylphenol-d2 - 0%, 4-Nitrophenol-d4 - 0%]
E29B4 [2-Nitrophenol-d4 - 136%, Nitrobenzene-d5 - 130%]. As per method four surrogates are allowed to fail. Therefore no further corrective action was taken. The DMC recovery requirements do not apply to samples that have been diluted.

The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {E2975MS} recovery met the requirements for all compounds.
The MSD {E2975MSD} recovery met the requirements for all compounds.
The MSD {E2975MSD} RPD met the requirements for all compounds.
The Blank Spike for {PB166438BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166441BS} recoveries met the requirements for all compounds.
The Blank Spike for (PB166444BS} recoveries met the requirements for all compounds.
The Blank Spike for (PB166453BS} recoveries met the requirements for all compounds.
The Blank Spike for (PB166497BS} 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 E29B0, E29B3, E29B3DL and E29B4 were diluted due to high concentrations.

Samples A29A0 and E29B0 have 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 = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

Example calculation of E29B0 for Phenol:

Ax = 309059

Ais = 551773
Is = 20
DF = 1
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.817
GPC = 1

Concentration ug/L = $\frac{(309059)\ (20)\ (1000)\ (1)\ (1)}{(551773)\ (1.817)\ (1000)\ (1)}$

= 6.2 ug/L

RRF Calculation of standard 20 ppb for **Naphthalene** with P instrument for method 01/29/2025.

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

= 2498726/2130098 X 20/20

= 1.173 (Reported RRF)

Semivolatiles SIM:

The samples were analyzed on instrument BNA_N 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 samples for Water were extracted by Method SFAM01.1 on 01/30/2025, 01/31/2025 and 02/01/2025. The analysis of SVOCMS Group2 was based on method SFAM01.1_SIM. using MA 3064.0 See the MA instructions at the end of the Case Narrative.

The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for,
E29B3 [2-Methylnaphthalene-d10 - 18%]. Lab has analyzed undiluted SIM-PAH analysis for the sample E29B3 Based on the full scan SVOA analysis, samples are having matrix interference therefore, samples analyzed for SIM-PAH also having matrix interference and samples also required dilution to bring target analytes within calibration range. Due to matrix interference, sample having surrogate recoveries are outside the QC limits respectively therefore lab reported

undiluted SIM-PAH analysis with surrogate recoveries outside the QC limits and further dilution analysis for final Hard Copy, Please see EPA communication after SDG Narrative.

The Internal Standards Areas met the acceptable requirements except for. E29B1, E29B3 & E29B4 Lab has analyzed undiluted SIM-PAH analysis for the samples E29B1, E29B3 & E29B4 Based on the full scan SVOA analysis, samples are having matrix interference therefore, samples analyzed for SIM-PAH also having matrix interference and samples also required dilution to bring target analytes within calibration range. Due to matrix interference, samples having surrogate recoveries are outside the QC limits respectively therefore lab reported undiluted SIM-PAH analysis with Internal standard recoveries outside the QC limits and further dilution analysis for final Hard Copy, Please see EPA communication after SDG Narrative. For E29B0DL It is confirmed with original , no corrective action required.

The Retention Times were acceptable for all samples.
The MS {E2975MS} recovery met the requirements for all compounds.
The MSD {E2975MSD} recovery met the requirements for all compounds.
The MSD {E2975MSD} RPD met the requirements for all compounds.
The Blank Spike for {PB166439BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166442BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166451BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166454BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB166498BS} 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 the requirements.
The Continues Calibration met the requirements.

Samples E29B0RE, E29B1, E29B3, E29B3DL and E29B4 were diluted due to high concentrations.

The Sample E29A2, E29A8, E29B0DL, E2980 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 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

Example calculation of **E2975** for **Anthracene**:

Ax = 2315
Ais = 6451
Is = 0.4
DF = 1
Vo = 990
Vi = 1
Vt = 1000
RRF = 1.089
GPC = 1

$$\text{Concentration ug/L} = \frac{(2315)\,(0.4)\,(1000)\,(1)\,(1)}{(6451)\,(1.089)\,(990)\,(1)}$$

$$= 0.13 \text{ ug/L}$$

RRF Calculation of standard 0.4 ppb **Naphthalene** with instrument N for method 01/21/2025.

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

Area of Internal Standard Conc. of Compound

= 5142/4615 X 0.4/0.4

= 1.114 (Reported RRF)

Pesticides:

The analyses for Pesticides were performed on instrument ECD_D. The front column is ZB-Multi-Residue-1 which is 30 meters, 0.32 mm ID, 0.50 um df. The rear column ZB-Multi-Residue-2 which is 30 meters, 0.32 mm ID, 0.25 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 02/01/2025 and analyzed on 02/03 and 02/04/2025. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria except for
E29B1 [Decachlorobiphenyl(1) - 26% , Decachlorobiphenyl(2) - 24%],
E29B4 [Decachlorobiphenyl(1) - 20% , Decachlorobiphenyl(2) - 19%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Pesticide Analysis)

E2975MS met the requirements.
E2975MSD 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 E2975, E2980, E29B0, E29B1, E29B3 and E29B4 failed to meet the %D for the results between the two columns Criteria.

Sample E2975 havs the concentration of target compound – Endrin Aldehyde,
Endosulfan Sulfate,
Samples E2980 have the concentration of target compound – Heptachlor,
Sample E29B3 has the concentration of target compound – Endrin Aldehyde,
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.

Calculation for the Concentration in Water Samples

$$\text{Concentration ug/L} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vo)\,(Vi)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL

GPC = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout
Vin = Volume of extract loaded onto GPC column.

Vout = Volume of extract collected after GPC cleanup.

Example of Methoxychlor calculation
Calibration Factor Calculation Methoxychlor in the first column

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

$$= \frac{82513626}{50\text{ng}}$$

$$= 1650270$$

Mean Calibration Factor = average of 5 point calibration factor

$$= 1584350$$

Sample **E2975**
Ax = 2195617
CF = 1584350
Ws = 990
Vi = 1
Vt = 10000
DF = 1
GPC = 1

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

$$= \frac{(2195617)\,(10000)\,(1.0)\,(1.0)}{(1584350)(1.0)(990)}$$

$$= 0.014$$

Reported Results (ug/L) = 0.014

Aroclors:

The analyses were performed on instrument GCECD_R. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.

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 ALCS are referenced as IBLK(1)/IBLK(2) ,MS(1)/MS(2), MSD(1)/MSD(2) and ALCS01(1)/ALCS01(2) respectively.

Aroclor sample was extracted by Method SFAM01.1 on 02/01/2025 and analyzed on 02/03/2025, 02/04/2025 All the samples were subjected to a Sulfuric acid cleanup. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria except for,
E29B4 [Decachlorobiphenyl(1)- 28%,Decachlorobiphenyl(2)- 24%],
The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Aroclor Analysis).

E2975MS met the requirements.
E2975MSD met the requirements.
The RPD met the requirements.
The Laboratory Control Sample met requirements.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuing Calibrations met the requirements.
The Retention Times were acceptable for all samples.

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

Calculation for Concentration in Water Samples:

$$\text{Concentration ug/L} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vo)\,(Vi)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).

Vo = Volume of water extracted in mL.
Vi = Volume of extract injected in uL.
Vt = Volume of the concentrated extract in uL
GPC = Vin = GPC factor (If no GPC is performed, GPC=1)
Vout
Vin = Volume of extract loaded onto GPC column.
Vout = Volume of extract collected after GPC cleanup.
DF = Dilution Factor.

Example of AR1260 calculation for Peak 1

Calibration factor Peak 1 100ppb ISTD= peak area
Column1 Mass injected ng

= 4732373
0.100

= 47323730 calibration factor for Peak 1 100ppb

Average of 5 peaks = 41448588

No target **Aroclors** were detected in the samples.

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.