SDG NARRATIVE

LAB NAME: CHEMTECH CONSULTING GROUP
CASE: 50217
SDG: E10017
CONTRACT: 68HERH20D0011
LAB CODE: CHM
CHEMTECH PROJECT: N4859
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	Test	pH
N4859-01	E10017		1.0
N4859-02	E10018		1.0
N4859-03	E10019		1.0
N4859-04	E10020		1.0
N4859-05	E10022		1.0
N4859-06	E10046		1.0
N4859-07	E10021		1.0
N4859-08	E10045		1.0
N4859-09	E10049		1.0
N4859-10	E10050		1.0
N4859-11	E10051		1.0
N4859-13	E10009		1.0
N4859-13DL	E10009DL	SVOC	
N4859-14	E10023		1.0
N4859-15	E10047		1.0
N4859-16	E10048		1.0
N4859-17	E10053		1.0
N4859-18	E10024		1.0
N4859-19	E10042		1.0
N4859-20MS	E10042MS		1.0
N4859-21MSD	E10042MSD		1.0
N4859-22	E10043		1.0
N4859-23	E10054		1.0

11 Water sample was delivered to the laboratory intact on 09/28/2022.
11 Water sample was delivered to the laboratory intact on 09/29/2022.

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 1.8, 1.3 degree Celsius for the samples received on 09/28/2022, 3.1, 2.9 degree Celsius for the

samples received on 09/29/2022.

Issue 1: Per the handwritten edits to the COC (attached), sample E10051 does not have a container for SVOA. The laboratory received a SVOA container for sample E10051, but not for sample E10050.

Resolution 1: Per Region 5, issues with containers for samples E10045 and E10050 meant they were not able to send any SVOA bottles for those samples. Please note the issue the SDG Narrative and proceed with the analysis of the samples.

Low Volatiles:

The analysis performed on instrument MSVOA_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UI The Trap was supplied by OI Analytical, OI #10 Trap, OI Eclipse 4660 Concentrator.
The analysis of VOC-SFAM was based on method SFAM01.1_Low.

Holding Times were met requirement.

The Surrogate recoveries met the acceptable criteria except for
E10020 [1,2-Dichloropropane-d6 - 126%],
E10022 [1,2-Dichlorobenzene-d4 - 121%, 1,2-Dichloropropane-d6 - 124%],
E10021 [1,2-Dichlorobenzene-d4 - 121%, 1,2-Dichloropropane-d6 - 122%],
E10049 [1,2-Dichloropropane-d6 - 134%, Benzene-d6 - 128%],
E10050 [Toluene-d8 - 76%],
E10051 [1,2-Dichlorobenzene-d4 - 127%],
E10023 [1,2-Dichlorobenzene-d4 - 131%, 1,2-Dichloropropane-d6 - 129%, Benzene-d6 - 125%],
E10053 [Chloroethane-d5 - 70%],
E10024 [1,2-Dichlorobenzene-d4 - 125%, 1,2-Dichloropropane-d6 - 124%],
E10042 [Chloroethane-d5 - 69%],
E10042MS [Chloroethane-d5 - 66%],
E10043 [Chloroethane-d5 - 70%],
E10054 [1 and1-Dichloroethene-d2 - 57%],
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 MS {E10042MS} recovery met the requirements for all compounds.
The MSD {E10042MSD} recovery met the requirements for all compounds.
The RPD {E10042MSD} met the requirements for all compounds.

The Initial Calibration met the requirements.

The Continuing Calibration (VSTD050102) file ID VU051026.D met the requirements except for 1,2-Dichloropropane (23.8%) and 4-Methyl-2-pentanone (33.9%). 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 Continuing Calibration (VSTD050105) file ID VU051078.D met the requirements except for Benzene-d6 (20.9%) and Toluene-d8 (20.1%). 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 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 **E10009** for **Benzene:**

Ax= 1228558
Is = 250
RRF=1.524
DF= 1
Ais= 386459
Vo. = 5

$$\text{Concentration in ug/L} = \frac{(1228558)\,(250)\,(1)}{(386459)(1.524)(5)}$$

Reported Result = 100 ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VU092922** for **5.0** ppb

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

RRF= $\frac{17559}{346379} \times \frac{50}{5.0}$

RRF= 0.507

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 09/29/2022 and 09/30/2022,. 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
E10019 [4-Nitrophenol-d4 - 8%,],
E10020 [4-Nitrophenol-d4 - 8%,],
E10049 [4-Nitrophenol-d4 - 9%] and
E10051 [4-Nitrophenol-d4 - 9%,]. 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 {PB147991BS} recoveries met the requirements for all compounds.
The Blank Spike for {PB147997BS} recoveries met the requirements for all compounds.
The Blank Spike for { PB148041BS} recoveries met the requirements for all compounds.

The MS { E10042MS} recovery met the requirements for all compounds.

The MSD {E10042MSD} with File ID: BP011938.D recoveries met the acceptable requirements except for 2,4-Dinitrotoluene[105%] .. As per sow Exhibit-D Section 12.2.5.4, The percent recovery and RPD limits for the spiking analyses listed in Exhibit D – SVOA, Table 12 are advisory, therefore no further corrective action is required

The RPD {E10042MSD} met the requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Tuning criteria met requirements.
The Continuous Calibration met the requirements .

The Initial Calibration verification (SICV623) File ID BP011850.D met the requirements except for Phenol (-21.1) As per method up to four target analyze in ICV are allowed to exceed the %D values, therefore no corrective action was taken.

The Sample E10009, have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

Sample E10009 was diluted due to high concentration.

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

Example calculation of E10009 for Naphthalene:

Ax = 1093509
Ais = 1109468
Is = 20
Vo = 1000
Vi = 1
Vt = 1000
RRF = 1.074
GPC = 1

$$\text{Concentration ug/L} = \frac{(1093509)\,(20)\,(1000)\,(1)\,(1)}{(1109468)\,(1.074)\,(1000)\,(1)}$$

Reported Result = 18 ug/L

RRF Calculation of standard 20 ppb for **Naphthalene** with P instrument for method 09/30/2022.

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

= 1308500/1099376 X 20/20

= 1.190 (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.