

SDG NARRATIVE**LAB NAME: CHEMTECH CONSULTING GROUP****CASE: 49703****SDG: C0AT5****CONTRACT: 68HERH20D0011****LAB CODE: CHM****CHEMTECH PROJECT: M4027****MODIFICATION REF. NUMBER: NA**

Sample ID	EPA Sample ID	Test	pH
M4027-01	C0AT5		1.0
M4027-02	C0AT6		1.0
M4027-03	C0AT7		1.0
M4027-03DL	C0AT7DL	VOC	1.0
M4027-04	C0AT8		1.0

4 Water samples were delivered to the laboratory intact on 10/01/2021.

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

Sample Tags were not received with the samples.

The temperature of the samples was measured using an I R Gun. The samples temperature was 1.6 degree Celsius for the samples received on 10/01/2021.

Shipping Discrepancies and/or QC issues:

Issue 1: Sample tags were not received with samples at the laboratory. Sample tag numbers may or may not be listed on the TR/COC.

Resolutions 1: The laboratory will note the samples with the missing tags in the SDG Narrative and proceed with the analysis of the samples. The resolution will be applied to all samples received for this Case.

Discrepancies with tags, jars, and/or COC

Issue 2: The received COC has sample C0AT8 listed for VOA analysis; however, the sample container has a label for TVOA analysis. This Case is scheduled for both water VOA and TVOA analyses. The laboratory would like to confirm how they should proceed with the analysis of this sample.

Resolution 2: Per Region 3, the laboratory will perform TVOA analysis on sample C0AT8. Please note the issue in the SDG Narrative and proceed with the analysis of the samples.

Insufficient volume

Issue 3: Only one vial was received for sample C0AT8 for the analysis; however, if re-analysis or dilution will be required then there will not be sufficient sample volume left to perform the re-analysis or dilution.

Resolution 3: Per Region 3, the laboratory will 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 Trap was supplied by OI Analytical, OI #10 Trap, OI Eclipse 4660 Concentrator.

The analysis of VOC-TRACE-SFAM was based on method SFAM01.1_Trace.

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for C0AT5 [1,1-Dichloroethene-d2 - 59% and Toluene-d8 - 68%]. As per method, up to three surrogates are allowed to fail. No corrective action was taken.

The Retention Times met requirements.

The Internal Standards Areas met the acceptable requirements.

Instrument Performance Check met requirements.

The Tuning criteria met requirements.

The Initial Calibration met requirements.

The Continuing Calibration met requirements.

The Blank analysis indicated presence of Chloroform [0.35ug/L] FileID:VV022692.D (VBLK219) {VV1008WBL01} due to possible lab contamination. As per method, less than the respective CRQL is allowed to fail for Chloroform, therefore no further corrective action was taken.

The storage blank analysis indicated presence of Methylene chloride [0.75ug/L] FileID: VV022701.D {VHBLK002} due to lab contamination. As per method, less than the respective CRQL is allowed to fail for Chloroform. Therefore no further corrective action was taken.

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

Calculation:

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

Is = 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 **C0AT5** for **Chloromethane**:

Ax = 2381

Is = 125

RRF=0.366

DF = 1

Ais = 130171

Vo. = 25

$$\text{Concentration in ug/L} = \frac{(2381) (125) (1)}{(130171) (0.366) (25)}$$

Reported Result = 0.25ug/L

Relative Response Factor = **Dichlorodifluoromethane**: RUN **VV100721** for **0.5** ppb

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

$$\text{RRF} = \frac{5315}{131296} \times \frac{5.0}{0.5}$$

RRF= 0.405

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 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 C0AT7 [1,1-Dichloroethene-d2 - 57%].

Instrument Performance Check met requirements.

The Retention Times were met for all samples.

The Internal Standards Areas met the acceptable requirements.

The Tuning criteria met requirements.

The Initial Calibration met the requirements.

The Continuing Calibration (VSTD050094) file ID VU045198.D met the requirements except for Chloromethane (-30.6%). As per method, up to two target analyte in CCV are allowed to exceed the %D values. Therefore no further corrective action was taken.

The Blank analysis indicated presence of Toluene [0.58ug/L] FileID:VU045217.D (VBLK022) {VU1007WBL02} due to possible lab contamination.

The Blank analysis indicated presence of Bromomethane [0.65ug/L], Toluene [0.61ug/L] FileID: VU045240.D (VBLK024) {VU1008WBL01} due to possible lab contamination.

The Blank analysis indicated presence of Toluene [0.67ug/L] FileID:VU045268.D (VBLK025) {VU1009WBL01} due to possible lab contamination. As per method, less than the respective CRQL is allowed to fail for Toluene, Bromomethane, Therefore no further corrective action was taken

The storage blank analysis indicated presence of Toluene [0.65ug/L] FileID: VU045269.D {VHBLK001} due to lab contamination. As per method, less than the respective CRQL is allowed to fail for Toluene. Therefore no further corrective action was taken.

Sample C0AT7 was diluted due to high concentration.

The Continuing Calibration file id (VSTD050096) VU045236.D was analyzed following the analysis of C0AT7 which had concentration above calibration levels for cis-1,2-Dichloroethene, Trichloroethene, Tetrachloroethene. A sample was reanalyzed at a diluted. The associate calibration is passing for this compound; therefore no instrument blank was required.

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

Calculation:

Low/Med Water Level Calculation

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = 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.

V_o = Total volume of water purged, in mL.

DF = Dilution Factor

Example Calculation for sample **C0AT7** for **Vinyl chloride**

A_x= 35409

I_s= 250

RRF=0.597

DF= 1

A_{is}= 297634

V_o. = 5

$$\text{Concentration in ug/L} = \frac{(35409) (250) (1)}{(297634) (0.597)(5)}$$

Reported Result = 10ug/L

Relative Response Factor = **Dichlorodifluoromethane: RUN VU092321** for **5.0** ppb

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

$$\text{RRF} = \frac{12653}{248013} \times \frac{50}{5.0}$$

$$\text{RRF} = 0.510$$

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.