



284 Sheffield Street, Mountainside, NJ 7092, Phone: 908 789 8900, Fax: 908 789 8922

## **CASE NARRATIVE**

**WSP USA Inc.**

**Project Name: Sharkey Landfill Site FYR Reuse Morris County NJ**

**Project # N/A**

**Order ID # Q3688**

**Test Name: VOC-SFAM,SVOCMS Group1,SVOC-SIMGroup1, Mercury,Metals CLP12**

### **A. Number of Samples and Date of Receipt:**

7 Water samples were received on 11/19/2025.

7 Water samples were received on 11/20/2025.

6 Water samples were received on 11/21/2025.

3 Water samples were received on 11/24/2025.

### **B. Parameters**

According to the Chain of Custody document, the following analyses were requested: VOC-SFAM,SVOCMS Group1,SVOC-SIMGroup1, Mercury,Metals CLP12. This data package contains results for VOC-SFAM(SFAM\_VOC),SVOCMS Group1 (SFAM\_SVOC) ,SVOC-SIMGroup1(SFAM\_SVOASIM), Mercury,Metals CLP12.

### **VOC –Low Medium:**

### **C. Analytical Techniques:**

The analysis performed on instrument MSVOA\_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of VOC-SFAM was based on method SFAM\_VOC.

### **D. QA/ QC Samples:**

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 MS {Q3688-02MS} with File ID: VU063768.D recoveries met the requirements for all compounds.

The MSD {Q3688-03MSD} with File ID: VU063769.D recoveries met the acceptable requirements.

The RPD met criteria.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.

The Continuous Calibration met the requirements.



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The Tuning criteria met requirements.

#### **E. Low/Med Water Level Calculation**

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

Where,

A<sub>x</sub> = Area of the characteristic ion (EICP) for the compound to be measured.

A<sub>is</sub> = 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<sub>o</sub> = Total volume of water purged, in mL.

DF = Dilution Factor.

#### **Semivolatile:**

#### **C. Analytical Techniques:**

The samples were analyzed on instrument BNA\_G using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA. The analysis of SVOCMS Group1 was based on method SFAM\_SVOC and extraction was done based on method 3510.

#### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Surrogate recoveries were met for all analysis except for,

M-31S [4-Methylphenol-d8 - 11%],

M-32I [4-Methylphenol-d8 - 23%] and

SLCS723 [1,4-Dioxane-d8 - 128%, ]. Failed surrogate is not associated with reporting list so no further corrective action was taken.

The Internal Standards Areas were met for all analysis.

The Retention Times were met for all analysis.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The RPD were met for all analysis.

The Blank Spike met requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.



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The Continuous Calibration File ID BG064869.D met the requirements except for 1,4-Dioxane-d8. Failed surrogate in Continuous Calibration is not associated with reporting list, Therefore no further corrective action was taken.

The Tuning criteria met requirements.

#### **E. Concentration of Water Sample:**

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

Where,

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured.

A<sub>is</sub> = Area of the characteristic ion for the internal standard.

I<sub>s</sub> = Amount of internal standard injected in ng.

V<sub>o</sub> = Volume of water extracted in mL.

V<sub>i</sub> = Volume of extract injected in uL.

V<sub>t</sub> = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC =  $\frac{V_{in}}{V_{out}}$  = GPC factor (If no GPC is performed, GPC=1)

V<sub>out</sub> = Volume of extract collected after GPC cleanup.

#### **Semivolatile SIM :**

#### **C. Analytical Techniques:**

The samples were analyzed on instrument BNA\_N using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA. The analysis of SVOC-SIMGroup1 was based on method SFAM\_SVOASIM and extraction was done based on method 3510.

#### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Surrogate recoveries were met for all analysis.

The Internal Standards Areas were met for all analysis except for, SLCS742, Failed internal standard is not associated with reporting list. Therefore no further corrective action was taken.

The Retention Times were met for all analysis.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The RPD were met for all analysis.



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The Blank Spike met requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.

The Continuous Calibration met the requirements.

The Tuning criteria met requirements.

Sample M-28S was diluted due to high concentration.

The Sample M-29 and M-32I have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

### **E. Concentration of Water Sample:**

Concentration ug/L =  $\frac{(A_x) (I_s) (V_t) (DF) (GPC)}{(A_{is}) (\overline{RRF}) (V_o) (V_i)}$

Where,

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured.

A<sub>is</sub> = Area of the characteristic ion for the internal standard.

I<sub>s</sub> = Amount of internal standard injected in ng.

V<sub>o</sub> = Volume of water extracted in mL.

V<sub>i</sub> = Volume of extract injected in uL.

V<sub>t</sub> = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC =  $\frac{V_{in}}{V_{out}}$  = GPC factor (If no GPC is performed, GPC=1)

V<sub>out</sub> = Volume of extract collected after GPC cleanup.

### **Mercury, Metals CLP12 :**

#### **C. Analytical Techniques:**

Mercury, Metals CLP12 : The analysis of Metals CLP12 was based on method SFAM\_AES, digestion based on method 3010 (waters). The analysis of Mercury was based on method SFAM\_HG and digestion was based on method 7470A (waters).

#### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Blank Spike Duplicate met requirements for all compounds.

The Duplicate analysis met criteria for all compounds.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The Serial Dilution met criteria for all compounds.



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## **E. Calculation:**

### **Calculation for ICP-AES Water Sample:**

$$\text{Concentration or Result } (\mu\text{g/L}) = C \times \frac{V_f}{V_i} \times \text{DF} \times 1000$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)

V<sub>f</sub> = Final digestion volume (mL)

V<sub>i</sub> = Initial aliquot amount (mL) (Sample amount taken in prep)

DF = Dilution Factor

### **Example Calculation For Sample M-31S For Chromium:**

If C = 0.0006719 ppm

V<sub>f</sub> = 50 ml

V<sub>i</sub> = 50 ml

DF = 1

$$\begin{aligned} \text{Concentration or Result } (\mu\text{g/L}) &= 0.0006719 \times \frac{50}{50} \times 1 \times 1000 \\ &= 0.6719 \mu\text{g/L} \\ &= 0.67 \mu\text{g/L (Reported Result with Signification)} \end{aligned}$$

### **Calculation for Hg Water Sample:**

$$\text{Concentration or Result } (\mu\text{g/L}) = C \times \text{DF}$$

Where,

C = Instrument response in  $\mu\text{g/L}$  from the calibration curve.

DF = Dilution Factor

### **Example Calculation :**

If, C = 0.0278 ppb

DF = 1

$$\begin{aligned} \text{Concentration or Result } (\mu\text{g/L}) &= 0.0278 \times 1 \\ &= 0.0278 \mu\text{g/L} \\ &= 0.028 \mu\text{g/L (Reported Result with Signification)} \end{aligned}$$



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**F. Manual Integration Comments:**

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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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\_\_\_\_\_