284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # MBHCX5
CASE # 51698
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # P4496

A. Number of Samples and Date of Receipt

04 Soil and 03 Water samples were delivered to the laboratory intact on 10/23/2024.

B. Parameters

Test requested for Metals CLP Full = Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Mercury, Cyanide.

C. Cooler Temp

Indicator Bottle**: Presence/**Absence

Cooler: 2.2^{o}C, 1.9^{o}C

D. Detail Documentation (related to Sample Handling Shipping, Analytical Problem, Temp of Cooler etc):

Issue 1 : A "P" or "M" prefix was listed at the beginning of a CLP sample ID.

Issue 2: Regarding SDG MBHCX5, Laboratory QC is scheduled for ICP-AES 11+ Metals, Hg and CN analyses, but the attached COC does not list a designated sample for QC. The laboratory has selected sample MBHZC8 to use for Laboratory QC and confirms that the sample is not a blank, rinsate, or PE sample.

E. Corrective Action taken for above:

Resolution 1 : To maintain COC integrity, ASB requests no changes to the Sample IDs. The laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples.

Resolution 2: Per SFAM01.1 Exhibit A, Section 5.5.4.1., the laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples.

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F. Analytical Techniques:

All analyses were based on CLP Methodology by method SFAM01.1.

Inter Element correction factors (IECs) are determined annually and correction factor are applied during ICP-AES analysis.

G. Calculation:

Calculation for ICP-AES Soil Sample:

Conversion of Results from mg/L or ppm to mg/kg (Dry Weight Basis):

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)
Vf = Final digestion volume (mL)
W = Initial aliquot amount (g) (Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

Example Calculation For Sample MBHDO5 For Antimony:

If C = 0.0083602ppm
Vf = 100 ml
W = 1.36g
S = 0.80 (80.0/100)
DF = 1

$$\text{Concentration (mg/kg)} = 0.0083602 \times \frac{100}{1.36 \times 0.80} \times 1$$

$$= 0.768400 \text{ mg/kg}$$

$$= 0.77 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for ICP-AES Water Sample:

$$\text{Concentration or Result (µg/L)} = C \times \frac{Vf}{Vi} \times DF \times 1000$$

Where,

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

Vf = Final digestion volume (mL)
Vi = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

Example Calculation For Sample MBHCX5 For Arsenic:

If C = 0.0103045 ppm
Vf = 50 ml
Vi = 50 ml
DF = 1

$$\text{Concentration or Result (µg/L)} = 0.0103045 \times \frac{50}{50} \times 1 \times 1000$$

$$= 10.3045 \text{ µg/L}$$

$$= 10 \text{ µg/L (Reported Result with Signification)}$$

Calculation for Hg Soil Sample:

Conversion of Results from µg /L or ppb to mg/kg :

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF / 1000$$

Where,

C = Instrument response in µg/L from the calibration curve.
Vf = Final prepared (absorbing solution) volume (mL)
W = Initial aliquot amount (g) (Fraction of Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

Example Calculation For Sample MBHDO6:

If C =0.2518 ppb
Vf = 100 mL
W = 0.50g
S = 0.675(67.5/100)
DF = 1

$$\text{Concentration (mg/kg)} = 0.2518 \times \frac{100}{0.50 \times 0.675} \times 1 / 1000$$

$$= 0.074607 \text{ mg/kg}$$

$$= 0.075 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for Hg Water Sample:

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Concentration or Result (µg/L) = C x DF
Where,
C = Instrument response in µg/L from the calibration curve.
DF = Dilution Factor

Example Calculation For Sample MBHCY6:

If C = 0.1236 ppb
DF = 1
Concentration or Result (µg/L) = 0.1236 x 1
= 0.1236 µg/L
= 0.12 µg/L (Reported Result with Signification)

Calculation for CN Soil Sample:

Conversion of Results from µg /L or ppb to mg/kg:

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF / 1000$$

Where,

C = Instrument response in µg/L CN from the calibration curve.
Vf = Final prepared (absorbing solution) volume (mL)
W = Initial aliquot amount (g) (Fraction of Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

Example Calculation for MBHZC8 :

If C = 3.8196 ppb
Vf = 50 ml
W = 1.01 g
S = 0.833(83.3/100)
DF = 1

$$\text{Concentration (mg/kg)} = 3.8196 \times \frac{50}{1.01 \times 0.833} \times 1 / 1000$$

= 0.22699 mg/kg

= 0.23 mg/kg (Reported Result with Signification)

Calculation for CN Water Sample:

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Concentration or Result (µg/L) = $C \times \frac{Vf}{Vi} \times DF$

Where,

C = Instrument response in µg/L CN from the calibration curve.
Vf = Final prepared (absorbing solution) volume (mL)
Vi = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

Example Calculation For Cyanide:

If C = 4.1106 ppb
Vf = 50 ml
Vi = 50 ml
DF = 1

Concentration or Result (µg/L) = $4.1106 \times \frac{50}{50} \times 1$

= 4.1106 µg/L

= 4.1 µg/L(Reported Result with Signification)

H. QA/ QC

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. Spike sample did meet requirements except for Antimony, Lead, Nickel, Selenium, Silver, Thallium. Duplicate sample did meet requirements except for Barium, Chromium, Lead, Magnesium, Nickel, Zinc. Serial Dilution did meet requirements except for Chromium, Iron, Manganese.

Chemical or physical interference effect was suspected and the data for all affected analytes in the sample received and associated with this serial dilution were flagged.

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. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature_____ Name: Nimisha Pandya

Date _____ Title: Document Control Officer