284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # A6301
CASE # 51952
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # Q1223

A. Number of Samples and Date of Receipt

14 Soil and 01 Water samples were delivered to the laboratory intact on 01/30/2025.

B. Parameters

Test requested for Metals CLP12= Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium & Mercury.

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

Test requested for Metals CLP MS FULL = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

C. Cooler Temp

Indicator Bottle**: Presence/**Absence

Cooler: 2.3^{o}C, 2.4^{o}C

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

Issue 1: The laboratory received sediment samples on 1/30/2025. The laboratory began SVOA analysis upon receipt and found that Samples A6301, A6302, A6305, A6307, A6322, A6323, and A6324 contain less than 30% solids. Because PRs are scheduled, the laboratory proceeded

with analysis using 30g of sample volume. Please note that the samples do not have any standing water, and the sample matrix is very light textured soil. Please confirm that the laboratory should proceed with reporting the results for these samples.

Issue 2: The laboratory is missing instructions for all PT samples for this Case.

Issue 3: The laboratory would like to confirm if the PT samples for this Case require PRs.

E. Corrective Action taken for above:

Resolution 1: Per Region 1, the laboratory should proceed with reporting the results for these samples. Please note the issue in the SDG narrative and proceed with analysis of the samples.

Resolution 2: Per Region 1, the PT instructions are attached. Please note the issue in the SDG narrative and proceed with analysis of the samples.

Resolution 3: Per Region 1, the PT samples do not require preliminary results (PRs). Please note that two sediment samples have been rescheduled without PRs. Please note the issue in the SDG Narrative and proceed with analysis of the samples.

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)

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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 A6301 For Aluminum:

If C = 105.7095 ppm
Vf = 100 ml
W = 4.86 g
S = 0.264(26.4/100)
DF = 1

$$\text{Concentration (mg/kg)} = 105.7095 \times \frac{100}{4.86 \times 0.264} \times 1$$

= 8238.9870 mg/kg

= 8200 mg/kg (Reported Result with Signification)

Calculation for ICP-MS 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 value in ppb (The average of all replicate integrations)
Vf = Final digestion 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 A6301 For Antimony:

If C = 0.82 ppb
Vf = 500 ml
W = 4.33 g
S = 0.264(26.4/100)

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DF = 1

$$\text{Concentration (mg/kg)} = 0.82 \times \frac{500}{4.33 \times 0.264} \times 1 / 1000$$

$$= 0.35866 \text{ mg/kg}$$

$$= 0.36 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for ICP-MS Water Sample:

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

Where,

C = Instrument value in ppb (The average of all replicate integrations)
Vf = Final digestion volume (mL)
Vi = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

Example Calculation For Sample A6310 For Manganese:

If C = 1.75 ppb
Vf = 50 ml
Vi = 50 ml
DF = 1

$$\text{Concentration or Result (µg/L)} = 1.75 \times \frac{50}{50} \times 1$$

$$= 1.75 \text{ µg/L}$$

$$= 1.8 \text{ µg/L (Reported Result with Signification)}$$

Calculation for Hg Soil Sample:

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

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

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 A6301:

If C = 1.1621 ppb
Vf = 100 mL
W = 2.03 g
S = 0.264(26.4/100)
DF = 1

$$\text{Concentration (mg/kg)} = 1.1621 \times \frac{100}{2.03 \times 0.264} \times 1 / 1000$$

$$= 0.21684 \text{ mg/kg}$$

$$= 0.22 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for Hg Water Sample:

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

Where,

C = Instrument response in µg/L from the calibration curve.
DF = Dilution Factor

Example Calculation For Mercury:

If C = 0.1811 ppb
DF = 1

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Concentration or Result (µg/L) = 0.1811 x 1

= 0.1811 µg/L

= 0.18 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, Selenium and Zinc. Duplicate sample did meet requirements. Serial Dilution did meet requirements.

Some samples have % solids results less than 30%. Please see below table for detail. Laboratory has processed these samples according to the SFAM01.1 SOW, Exhibit D, sections 10.1.1.8.
EPA Sample ID %Solid

EPA Sample ID	% Solid
A6301	26.4
A6302	23.8
A6305	24.3
A6305D	24.3
A6305S	24.3
A6307	24.7
A6322	12.9
A6323	28.3
A6324	25.5

Some samples have % solids results less than 50% but more than 30%. Please see below table for detail. Laboratory has processed these samples according to the SFAM01.1 SOW, Exhibit D, sections 10.1.1.8.

EPA Sample ID	% Solid
A6308	44.2
A6321	47.9

Collision cell is being used to remove potential interferences. The analytes Na, Mg, Al, K, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As are being analyzed with collision cell and analytes Be, B, Ca, Ti, Se,

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Sr, Zr, Mo, Ag, Cd, Sn, Sb, Ba, Tl, Pb, U are being analyzed with Non-Collision Cell. Helium gas is used for the Collision Cell analysis.

Internal Standard Association for ICP-MS analysis.

Target Analyte	Associated Internal Standard
Aluminum	45Sc
Antimony	159Tb
Arsenic	89Y
Barium	159Tb
Beryllium	6Li
Cadmium	159Tb
Calcium	45Sc
Chromium	45Sc
Cobalt	45Sc
Copper	45Sc
Iron	45Sc
Lead	209Bi
Magnesium	45Sc
Manganese	45Sc
Nickel	45Sc
Potassium	45Sc
Selenium	89Y
Silver	159Tb
Sodium	45Sc

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Thallium	209Bi
Vanadium	45Sc
Zinc	45Sc

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