

SDG COVER PAGE

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
 Lab Code: ACE Case No.: 51779 MA No.: 3225.1,3226.1 SDG No.: MYCZ19
 SOW No. : SFAM01.1

EPA Sample No.	Lab Sample Id	Analysis Method			
		ICP-AES	ICP-MS	Mercury	Cyanide
MYCZ19	P5172-01	X	X		
MYCZ20	P5172-02	X	X		
MYCZ21	P5172-03	X	X		
MYCZ22	P5172-04	X	X		
MYCZ23	P5172-05	X	X		
MYCZ24	P5172-06	X	X		
MYCZ25	P5172-07	X	X		
MYCZ26	P5172-08	X	X		
MYCZ27	P5172-09	X	X		
MYCZ28	P5172-10	X	X		
MYCZ29	P5172-11	X	X		
MYCZ30	P5172-12	X	X		
MYCZ31	P5172-13	X	X		
MYCZ32	P5172-14	X	X		
MYCZ33	P5172-15	X	X		
MYCZ34	P5172-16	X	X		
MYCZ35	P5172-17	X	X		
MYCZ36	P5172-18	X	X		
MYCZ37	P5172-19	X	X		
MYCZ38	P5172-20	X	X		
MYCZ38D	P5172-21	X	X		
MYCZ38S	P5172-22	X	X		

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the SDG Narrative. All edits and manual integrations have been peer-reviewed. Release of the data contained in this hardcopy Complete SDG File and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____
 Date: _____ Title: _____

68HERH20D0011

SDG # MYCZ19

USEPA CLP COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 9-091724-124303-0115

DateShipped: 12/5/2024

Lab: Alliance Technical Group LLC

CarrierName: FedEx

Case #: 51779

Lab Contact: Max Bomer

AirbillNo: 7704 9478 3223

Cooler #: 51779-115

Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
2103A-D-0002-02	MYCZ19	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7091 (None) (1)	2103A-D-0002	09/16/2024 10:37	.
2103A-D-0002-01	MYCZ20	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7092 (None) (1)	2103A-D-0002	09/16/2024 10:37	.
2103A-D-0001-01	MYCZ21	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7093 (None) (1)	2103A-D-0001	09/16/2024 10:33	.
2103A-D-0004-01	MYCZ22	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7094 (None) (1)	2103A-D-0004	09/16/2024 10:30	.
2103A-C-0002-01	MYCZ23	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7095 (None) (1)	2103A-C-0002	09/16/2024 10:30	.
2103A-D-0003-01	MYCZ24	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7096 (None) (1)	2103A-D-0003	09/16/2024 10:46	.
90212-A-0009-01	MYCZ25	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7097 (None) (1)	90212-A-0009	09/16/2024 14:48	.
90212-A-0006-01	MYCZ26	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7098 (None) (1)	90212-A-0006	09/16/2024 14:46	.
90212-A-0001-01	MYCZ27	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7099 (None) (1)	90212-A-0001	09/16/2024 14:46	.
90212-A-0002-01	MYCZ28	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7100 (None) (1)	90212-A-0002	09/16/2024 14:44	.

Special Instructions: Percent solids required for every sample. Use MAS 3225 and 3226. Lab should select samples for Lab QC. ICP-AES 11+Metals:Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn ICP-MS 11+ Metals: Ag, As, Ba,Be, Cd, Co, Cr, Cu, Ni, Pb, Sb, Se, Ti, V, Zn

Analysis Key: ICP-AES 11 ICP-MS 11=CLP ICP-AES 11 Metals and ICP-MS 11 Metals

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
SHIP TO CAROLINA CYCERNO LAB		10/5/2024 13:00		12-6-24	Zip Case #1 8.3°C Autody Seal Intact No temp Break per ZLC

68HERH20D0011

SDG # MYCZ19

USEPA CLP COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 9-091724-124303-0115

Date Shipped: 12/5/2024

Lab: Alliance Technical Group LLC

Carrier Name: FedEx

Case #: 51779

Lab Contact: Max Bonner

Airbill No: 7704 9478 3223

Cooler #: 51779-115

Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
90212-A-0004-01	MYCZ29	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7101 (None) (1)	90212-A-0004	09/16/2024 14:43	.
90212-A-0007-01	MYCZ30	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7102 (None) (1)	90212-A-0007	09/16/2024 14:42	.
90212-A-0008-01	MYCZ31	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7103 (None) (1)	90212-A-0008	09/16/2024 14:42	.
90212-A-0003-01	MYCZ32	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7104 (None) (1)	90212-A-0003	09/16/2024 14:40	.
90212-A-0005-01	MYCZ33	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7105 (None) (1)	90212-A-0005	09/16/2024 14:40	.
90212-A-0010-02	MYCZ34	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7106 (None) (1)	90212-A-0010	09/16/2024 14:38	.
90212-A-0010-01	MYCZ35	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7107 (None) (1)	90212-A-0010	09/16/2024 14:38	.
90212-A-0011-03	MYCZ36	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7108 (None) (1)	90212-A-0011	09/16/2024 14:37	.
2434-B-0002-01	MYCZ37	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7133 (None) (1)	2434-B-0002	09/16/2024 15:35	.
2434-A-0004-01	MYCZ38	Soil/ REAC	Grab	ICP-AES 11 ICP-MS 11(21)	9-7134 (None) (1)	2434-A-0004	09/16/2024 15:36	22

Special Instructions: Percent solids required for every sample. Use MAs 3225 and 3226. Lab should select samples for Lab QC. ICP-AES 11+Metals: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb, Sb, Se, Ti, V, Zn ICP-MS 11+ Metals: Ag, As, Ba, Be, Cd, Co, Cr, Cu, Ni, Pb, Sb, Se, Ti, V, Zn

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES 11 ICP-MS 11=CLP ICP-AES 11 Metals and ICP-MS 11 Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Shipped via UPS	Carolina Cuyame	12/05/2024 13:00	OK	12-6-24	ICP-AES 8.3 ^{us}
					Custody Seal Intact
					No trip back, no RLE

FORM DC-1
SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page <u>1</u> of <u>1</u>
Received By (Print Name) <u>Deanna Rios</u>		Log-in Date 12/6/2024
Received By (Signature) <u>[Signature]</u>		
Case Number 51779	SDG No. MYCZ19	MA No. 3225.1,3226.1

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	<u>n/a</u>
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	<u>770494783223</u> <u>1</u>
6. Shipping Container Temperature Indicator Bottle	Absent
7. Shipping Container Temperature	<u>8.3</u> Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	<u>12/06/2024</u>
12. Time Received	<u>10:10</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MYCZ19	N/A	9-7091	P5172-01	Intact
2	MYCZ20	N/A	9-7092	P5172-02	Intact
3	MYCZ21	N/A	9-7093	P5172-03	Intact
4	MYCZ22	N/A	9-7094	P5172-04	Intact
5	MYCZ23	N/A	9-7095	P5172-05	Intact
6	MYCZ24	N/A	9-7096	P5172-06	Intact
7	MYCZ25	N/A	9-7097	P5172-07	Intact
8	MYCZ26	N/A	9-7098	P5172-08	Intact
9	MYCZ27	N/A	9-7099	P5172-09	Intact
10	MYCZ28	N/A	9-7100	P5172-10	Intact
11	MYCZ29	N/A	9-7101	P5172-11	Intact
12	MYCZ30	N/A	9-7102	P5172-12	Intact
13	MYCZ31	N/A	9-7103	P5172-13	Intact
14	MYCZ32	N/A	9-7104	P5172-14	Intact
15	MYCZ33	N/A	9-7105	P5172-15	Intact
16	MYCZ34	N/A	9-7106	P5172-16	Intact
17	MYCZ35	N/A	9-7107	P5172-17	Intact
18	MYCZ36	N/A	9-7108	P5172-18	Intact
19	MYCZ37	N/A	9-7133	P5172-19	Intact
20	MYCZ38	N/A	9-7134	P5172-20	Intact
21	MYCZ38D	N/A	9-7134	P5172-21	Intact
22	MYCZ38S	N/A	9-7134	P5172-22	Intact
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By <u>[Signature]</u>	Logbook No. N/A
Date <u>12/6/24</u>	Logbook Page No. N/A

FORM DC-2
COMPLETE SDG FILE (CSF) INVENTORY SHEET

LAB NAME	Alliance Technical Group, LLC		
LAB CODE	ACE		
CONTRACT NO.	68HERH20D0011		
CASE NO.	51779	SDG NO.	MYCZ19
MA NO.	3225.1, 3226.1	SOW NO.	SFAM01.1

All documents delivered in the Complete SDG File must be original documents where possible.
(Reference - Exhibit B Section 2.4)

	PAGE NOS:		CHECK	
	FROM	TO	LAB	REGION
1. SDG Cover Page	1	1	✓	
2. Traffic Report/Chain of Custody Record(s)	2	3	✓	
3. Sample Log-In Sheet (DC-1)	4	4	✓	
4. CSF Inventory Sheet (DC-2)	5	7	✓	
5. SDG Narrative	8	17	✓	
6. Communication Logs	NA	NA	✓	
7. Percent Solids Log	18	20	✓	

Analysis Forms and Data (ICP-AES)

8. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	21	40	✓	
9. Instrument raw data by instrument in analysis order	41	535	✓	

Other Data

10. Standard and Reagent Preparation Logs	536	675	✓	
11. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	676	677	✓	
12. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	678	703	✓	
13. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
14. Extraction Logs for TCLP and SPLP	NA	NA	✓	
15. Raw GPC Data	NA	NA	✓	
16. Raw Florisil Data	NA	NA	✓	

Analysis Forms and Data (ICP-MS)

17. Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	704	723	✓	
18. Instrument raw data by instrument in analysis order	724	3300	✓	

Other Data

19. Standard and Reagent Preparation Logs	3301	3446	✓	
20. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	3447	3448	✓	
21. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	3449	3478	✓	
22. Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	

	<u>PAGE NOS:</u>		<u>CHECK</u>	
	<u>FROM</u>	<u>TO</u>	<u>LAB</u>	<u>REGION</u>
23 . Extraction Logs for TCLP and SPLP	NA	NA	✓	
24 . Raw GPC Data	NA	NA	✓	
25 . Raw Florisil Data	NA	NA	✓	

Analysis Forms and Data (Mercury)

26 . Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✓	
27 . Instrument raw data by instrument in analysis order	NA	NA	✓	

Other Data

28 . Standard and Reagent Preparation Logs	NA	NA	✓	
29 . Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✓	
30 . Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✓	
31 . Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
32 . Extraction Logs for TCLP and SPLP	NA	NA	✓	
33 . Raw GPC Data	NA	NA	✓	
34 . Raw Florisil Data	NA	NA	✓	

Analysis Forms and Data (Cyanide)

35 . Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✓	
36 . Instrument raw data by instrument in analysis order	NA	NA	✓	

Other Data

37 . Standard and Reagent Preparation Logs	NA	NA	✓	
38 . Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✓	
39 . Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✓	
40 . Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✓	
41 . Extraction Logs for TCLP and SPLP	NA	NA	✓	
42 . Raw GPC Data	NA	NA	✓	
43 . Raw Florisil Data	NA	NA	✓	

Additional

44. EPA Shipping/Receiving Documents

Airbill (No. of Shipments 1)

Sample Tags

Sample Log-In Sheet (Lab)

45. Misc. Shipping/Receiving Records (list all individual records)

46. Internal Lab Sample Transfer Records and Tracking Sheets
(describe or list)47. Other Records and related Communication Logs
(describe or list)

48. Comments:

Completed by:
(CLP Lab)Audited by:
(EPA)

Nimisha Pandya, Document Control Officer

PAGE NOs:		CHECK	
FROM	TO	LAB	REGION
3479	3479	✓	
NA	NA	✓	
3480	3482	✓	
NA	NA	✓	
3483	3486	✓	
NA	NA	✓	



**284 Sheffield Street
Mountainside, NJ 07092**

SDG NARRATIVE

USEPA

SDG # MYCZ19

CASE # 51779

CONTRACT # 68HERH20D0011

SOW# SFAM01.1

LAB NAME: Alliance Technical Group, LLC

LAB CODE: ACE

LAB ORDER ID # P5172

MODIFIED ANALYSIS #3225.1, 3226.1

A. Number of Samples and Date of Receipt

20 Soil samples was delivered to the laboratory intact on 12/06/2024

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.

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

C. Cooler Temp

Indicator Bottle: Presence/**Absence**

Cooler: 8.3°C

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

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

E. Corrective Action taken for above:

Resolution: 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.

F. Analytical Techniques:

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



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Mountainside, NJ 07092**

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):

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

Where,

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

V_f = 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 MYCZ19 For Antimony:

If C = 0.0347240 ppm

V_f = 100 ml

W = 1.21 g

S = 0.982(98.2/100)

DF = 2

$$\begin{aligned} \text{Concentration (mg/kg)} &= 0.0347240 \times \frac{100}{1.21 \times 0.982} \times 2 \\ &= 5.84470 \text{ mg/kg} \\ &= 5.8 \text{ mg/kg (Reported Result with Signification)} \end{aligned}$$

Calculation for ICP-MS Soil Sample:

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

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

Where,

C = Instrument value in ppb (The average of all replicate integrations)

V_f = Final digestion volume (mL)



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Mountainside, NJ 07092**

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 MYCZ19 For Antimony:

If C = 0.46 ppb

Vf = 500 ml

W = 1.21 g

S = 0.982(98.2/100)

DF = 1

$$\text{Concentration (mg/kg)} = 0.46 \times \frac{500}{1.21 \times 0.982} \times 1 / 1000$$

$$= 0.19356 \text{ mg/kg}$$

$$= 0.19 \text{ mg/kg (Reported Result with Signification)}$$

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. AES Spike sample did meet requirements except for Copper, Silver, Zinc. MS Spike sample (MYCZ38SRE) did meet requirements except for Cobalt, Lead, Nickel, Silver, Vanadium. MS Spike sample (MYCZ38S) did meet requirements except for Arsenic, Cadmium. Duplicate sample did meet requirements except for Copper, Nickel. Serial Dilution did meet requirements except for Cobalt, Copper, Lead, Nickel.

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, 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
Antimony	159Tb
Arsenic	89Y
Barium	159Tb
Beryllium	6Li
Cadmium	159Tb
Chromium	45Sc



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Mountainside, NJ 07092**

Cobalt	45Sc
Copper	45Sc
Lead	209Bi
Nickel	45Sc
Selenium	89Y
Silver	159Tb
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

Date: 09/11/2024	MA: 3225.1	Title: ICP-MS with Modified Preparation Method and Analysis of Soils with Additional Laboratory QC
Method Source: SFAM01.1	Method: ICP-MS	
Matrix: Soil/Sediment		
Summary of Modification		
<p>The purpose of this modified analysis is to prepare samples by EPA Draft Method 3050C (see below) with additional modified LCS and Matrix Spikes and analyze for the scheduled target analytes by ICP-MS. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in the SOW listed in your current EPA agreement remain unchanged and in full force and effect.</p>		
I. Analyte Modifications		Not applicable <input checked="" type="checkbox"/>
II. Calibration and QC Requirements		Not applicable <input type="checkbox"/>
<p>The Laboratory shall:</p> <ul style="list-style-type: none"> • Use the Method Detection Limits (MDLs) determined for routine soil analyses (i.e., Method 200.8) to report the results for these analyses. The Laboratory is NOT required to perform an MDL study for Draft Method 3050C. • Prepare and analyze an additional Laboratory Control Sample (LCS) spiked at the CRQL. Percent Recovery limits do NOT apply to this LCS and no corrective actions are required. • Prepare a Matrix Spike spiked at three times the levels specified in the SOW. • Prepare and analyze an additional Matrix Spike sample spiked at five times the levels specified for this Modified Analysis (i.e., 15x the levels specified in the SOW). • Post-Digestion Spike requirements apply to the 5x Matrix Spike only. • Post-Digestion Spike corrective actions apply to Sb. 		
III. Preparation and Method Modifications		Not applicable <input type="checkbox"/>
<p>The Laboratory shall:</p> <ul style="list-style-type: none"> • Prepare and analyze the sample by EPA Draft Method 3050C as follows: <ul style="list-style-type: none"> ○ Mix sample thoroughly and transfer 1.00 – 1.50 g to a digestion vessel. ○ Add 10 mL 1:1 HNO₃ and 5 mL 1:1 HCl, heat the sample at 95°C (±3°C) and reflux 10-15 minutes. ○ Add 5 mL concentrated HNO₃ and reflux for 30 minutes at 95°C (±3°C), repeat until digestion complete. ○ Concentrate sample to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C). ○ Cool sample, add 2mL water and 3 mL 30% H₂O₂. Heat at 95°C (±3°C) and add additional 1 mL aliquots of 30% H₂O₂ until effervescence is minimal. ○ Reduce volume to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C). ○ Dilute to 100 mL with water, centrifuge or filter as necessary prior to analysis. • The same sample extracts can be used for ICP-AES analysis. Separate Matrix Spikes and LCS will need to be prepared for both ICP-AES and ICP-MS analyses. • Analyze the samples starting at an initial 5x dilution. Subsequently, dilute samples as necessary to bring the analyte concentrations within the calibration range of the instrument per the SOW. • Method Blanks, both LCSs, and all instrument QC are to be analyzed undiluted. 		

IV. Special Reporting Requirements**Not applicable**☐

The Laboratory shall:

- Ensure the SDG Narrative is updated as stated in the SOW, including any technical and administrative problems encountered and the resolution or corrective actions taken. These problems may include interference problems encountered during analysis, dilutions, re-analyses and/or re-preparations performed, and problems with the analysis of samples. Also include a discussion of any SOW Modified Analyses, including a copy of the approved modification form with the SDG Narrative.
- Initial analysis data are reported with a dilution factor of 1.0 and a final volume of 500 mL, per the SOW.
- Report the additional LCS as "LCSD" in the raw data and in the EDD with QCType "Laboratory_Control_Sample_Duplicate".
- Report the additional Matrix Spike with an "SRE" suffix in the raw data and EDD.
- Report any Post-Digestion Spike of the additional 5x Matrix Spike with an "ARE" suffix.

Date: 09/11/2024	MA: 3226.1	Title: ICP-AES with Modified Preparation Method and Analysis of Soils with Additional Laboratory QC
Method Source: SFAM01.1	Method: ICP-AES	
Matrix: Soil/Sediment		
Summary of Modification		
<p>The purpose of this modified analysis is to prepare samples by EPA Draft Method 3050C (see below) with additional modified LCS and Matrix Spikes and analyze for the scheduled target analytes by ICP-AES. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in the SOW listed in your current EPA agreement remain unchanged and in full force and effect.</p>		
I. Analyte Modifications		Not applicable <input checked="" type="checkbox"/>
II. Calibration and QC Requirements		Not applicable <input type="checkbox"/>
<p>The Laboratory shall:</p> <ul style="list-style-type: none"> • Use the Method Detection Limits determined for routine soil analyses (i.e., Method 3050B) to report the results for these analyses. The Laboratory is NOT required to perform an MDL study for Draft Method 3050C. • Prepare and analyze an additional Laboratory Control Sample (LCS) spiked at the CRQL. Percent Recovery limits do NOT apply to this LCS and no corrective actions are required. • Prepare a Matrix Spike spiked at two times the levels specified in the SOW. • Post-Digestion Spike requirements apply to the 2x Matrix Spike. • Post-Digestion Spike corrective actions apply to Sb. 		
III. Preparation and Method Modifications		Not applicable <input type="checkbox"/>
<p>The Laboratory shall:</p> <ul style="list-style-type: none"> • Prepare and analyze the sample by EPA Draft Method 3050C as follows: <ul style="list-style-type: none"> ○ Mix sample thoroughly and transfer 1.00 – 1.50 g to a digestion vessel. ○ Add 10 mL 1:1 HNO₃ and 5 mL 1:1 HCl, heat the sample at 95°C (±3°C) and reflux 10 -15 minutes. ○ Add 5 mL concentrated HNO₃ and reflux for 30 minutes at 95°C (±3°C), repeat until digestion complete. ○ Concentrate sample to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C). ○ Cool sample, add 2mL water and 3 mL 30% H₂O₂. Heat at 95°C (±3°C) and add additional 1 mL aliquots of 30% H₂O₂ until effervescence is minimal. ○ Reduce volume to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C). ○ Dilute to 100 mL with water, centrifuge or filter as necessary prior to analysis. • The same sample extracts can also be used for ICP-MS analysis. Separate Matrix Spikes and LCS will need to be prepared for both ICP-AES and ICP-MS analyses. • Analyze the samples starting at an initial 2x dilution. Subsequently, dilute samples as necessary to bring the analyte concentrations within the calibration range of the instrument per the SOW. • Verify that the dilution was adequate to reduce interferences to within the method calibration range. This can optionally be verified by visual verification of the spectrogram or by analysis of a serial dilution. There are other acceptable means to provide assurance, e.g. some software may automatically provide guidance to the analyst. • Method Blanks, both LCS, and all instrument QC are to be analyzed undiluted. 		

IV. Special Reporting Requirements	Not applicable <input type="checkbox"/>
<p>The Laboratory shall:</p> <ul style="list-style-type: none">• Ensure the SDG Narrative is updated as stated in the SOW, including any technical and administrative problems encountered and the resolution or corrective actions taken. These problems may include interference problems encountered during analysis, dilutions, re-analyses and/or re-preparations performed, and problems with the analysis of samples. Also include a discussion of any SOW Modified Analyses, including a copy of the approved modification form with the SDG Narrative.• Initial analysis data are reported with a dilution factor of 2.0 and a final volume of 100 mL, per the SOW.• Report the additional LCS as "LCSD" in the raw data and in the EDD with QCType "Laboratory_Control_Sample_Duplicate".• Ensure that up-to-date Interelement Correction Factors (IECs) are provided with the data package.	

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
As 189.042 {479}	<input checked="" type="checkbox"/>	1	Fe	-0.000064	0.000000	No
Ti 190.856 {477}	<input checked="" type="checkbox"/>	5	Mo	-0.002450	0.000000	No
			Co	0.002248	0.000000	No
			Ti	-0.000500	0.000000	No
			Mn	0.000370	0.000000	No
			V	-0.012340	0.000000	No
Pb 220.353 {453}	<input checked="" type="checkbox"/>	6	Mo	-0.001480	0.000000	No
			Al	-0.000075	0.000000	No
			Cu	0.001400	0.000000	No
			Fe	0.000030	0.000000	No
			Mn	0.000340	0.000000	No
			Ni	0.000630	0.000000	No
Se 196.090 {472}	<input checked="" type="checkbox"/>	3	Fe	-0.000308	0.000000	No
			Mn	0.000470	0.000000	No
			Co	-0.000630	0.000000	No
Sb 206.833 {463}	<input checked="" type="checkbox"/>	4	Cr	0.010700	0.000000	No
			V	-0.001168	0.000000	No
			Mo	-0.002850	0.000000	No
			Ni	-0.000440	0.000000	No
Al 396.152 { 85}	<input checked="" type="checkbox"/>	1	Mo	0.037230	0.000000	No
Ba 493.409 { 68}	<input type="checkbox"/>	None				
Be 234.861 {144}	<input checked="" type="checkbox"/>	3	Mo	-0.000320	0.000000	No
			Fe	0.000010	0.000000	No
			Mn	-0.000047	0.000000	No
Cd 214.438 {457}	<input checked="" type="checkbox"/>	1	Fe	0.000040	0.000000	No
Ca 373.690 { 90}	<input type="checkbox"/>	None				
Cr 267.716 {126}	<input checked="" type="checkbox"/>	1	Mn	0.000160	0.000000	No
Co 228.616 {448}	<input checked="" type="checkbox"/>	2	Ti	0.001840	0.000000	No
			Mo	-0.001230	0.000000	No
Cu 324.754 {104}	<input checked="" type="checkbox"/>	4	Co	-0.000796	0.000000	No
			Fe	-0.000100	0.000000	No
			Mn	0.000345	0.000000	No
			Ni	0.000895	0.000000	No
Fe 259.837 {130}	<input type="checkbox"/>	None				
Mn 257.610 {131}	<input checked="" type="checkbox"/>	1	Ni	0.000897	0.000000	No
Mg 279.079 {121}	<input type="checkbox"/>	None				
Ni 231.604 {446}	<input type="checkbox"/>	None				
Ag 328.068 {103}	<input checked="" type="checkbox"/>	3	Fe	-0.000100	0.000000	No
			Mn	0.000146	0.000000	No
			V	-0.000889	0.000000	No
Na 818.326 { 41}	<input type="checkbox"/>	None				
V 292.402 {115}	<input checked="" type="checkbox"/>	2	Mo	-0.008480	0.000000	No
			Cr	-0.002220	0.000000	No
Zn 206.200 {464}	<input type="checkbox"/>	None				
Zn 213.856 {158}	<input checked="" type="checkbox"/>	1	Ni	0.007280	0.000000	No
K 769.896 { 44}	<input type="checkbox"/>	None				
P 177.495 {490}	<input checked="" type="checkbox"/>	2	Ni	0.001640	0.000000	No
			Cu	-0.012530	0.000000	No
B 249.678 {135}	<input checked="" type="checkbox"/>	3	Co	0.002880	0.000000	No
			V	-0.002000	0.000000	No
			Fe	-0.001360	0.000000	No
Mo 202.030 {467}	<input type="checkbox"/>	None				
S 182.034 {485}	<input checked="" type="checkbox"/>	2	Mo	-0.008000	0.000000	No
			Mn	0.002700	0.000000	No

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-In-fit?
Si 251.611 {134}	<input checked="" type="checkbox"/>	2	Mo	0.010520	0.000000	No
			Ti	0.005650	0.000000	No
Sn 189.989 {478}	<input type="checkbox"/>	None				
Ti 336.121 {100}	<input checked="" type="checkbox"/>	1	Ni	-0.001000	0.000000	No
Li 670.784 { 50}	<input type="checkbox"/>	None				
Y 224.306 {450}*	<input type="checkbox"/>	None				
Y 360.073 { 94}*	<input type="checkbox"/>	None				
Y 371.030 { 91}*	<input type="checkbox"/>	None				
Y 224.306 {150}*	<input type="checkbox"/>	None				
In 230.606 {446}*	<input type="checkbox"/>	None				
Sr 407.771 { 83}	<input type="checkbox"/>	None				



PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/10/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 12:20
In Date: 12/09/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 07:21
Out Date: 12/10/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133825

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g) (B)	Dish+Dry Sample Wt(g) (C)	% Solid	Comments
P5172-01	MYCZ19	1	1.12	8.72	9.84	9.68	98.2	
P5172-02	MYCZ20	2	1.15	8.48	9.63	9.47	98.1	
P5172-03	MYCZ21	3	1.13	8.80	9.93	9.77	98.2	
P5172-04	MYCZ22	4	1.15	8.54	9.69	9.51	97.9	
P5172-05	MYCZ23	5	1.15	8.59	9.74	9.57	98.0	
P5172-06	MYCZ24	6	1.16	8.41	9.57	9.44	98.5	
P5172-07	MYCZ25	7	1.18	8.77	9.95	9.61	96.1	
P5172-08	MYCZ26	8	1.17	8.61	9.78	9.6	97.9	
P5172-09	MYCZ27	9	1.14	8.55	9.69	9.44	97.1	
P5172-10	MYCZ28	10	1.17	8.57	9.74	9.42	96.3	
P5172-11	MYCZ29	11	1.15	8.43	9.58	9.41	98.0	
P5172-12	MYCZ30	12	1.15	8.53	9.68	9.53	98.2	
P5172-13	MYCZ31	13	1.17	8.81	9.98	9.71	96.9	
P5172-14	MYCZ32	14	1.16	8.80	9.96	9.72	97.3	
P5172-15	MYCZ33	15	1.18	8.43	9.61	9.45	98.1	
P5172-16	MYCZ34	16	1.17	8.41	9.58	9.42	98.1	
P5172-17	MYCZ35	17	1.15	8.59	9.74	9.61	98.5	
P5172-18	MYCZ36	18	1.16	8.69	9.85	9.68	98.0	
P5172-19	MYCZ37	19	1.17	8.59	9.76	9.6	98.1	
P5172-20	MYCZ38	20	1.14	8.54	9.68	9.53	98.2	
P5172-21	MYCZ38D	21	1.14	8.54	9.68	9.53	98.2	
P5172-22	MYCZ38S	22	1.14	8.54	9.68	9.53	98.2	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

WB 193825

WorkList Name : %1-p5172

WorkList ID : 186122

Department : Wet-Chemistry

Date : 12-09-2024 09:28:20

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5172-01	MYCZ19	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-02	MYCZ20	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-03	MYCZ21	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-04	MYCZ22	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-05	MYCZ23	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-06	MYCZ24	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-07	MYCZ25	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-08	MYCZ26	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-09	MYCZ27	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-10	MYCZ28	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-11	MYCZ29	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-12	MYCZ30	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-13	MYCZ31	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-14	MYCZ32	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-15	MYCZ33	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-16	MYCZ34	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-17	MYCZ35	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-18	MYCZ36	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-19	MYCZ37	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-20	MYCZ38	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO
P5172-21	MYCZ38D	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO

Date/Time 12/09/24 11:40

Raw Sample Received by: H. C. (Sun)

Raw Sample Relinquished by: H. C. (Sun)

Date/Time 12/09/24

Raw Sample Received by: H. C. (Sun)

Raw Sample Relinquished by: H. C. (Sun)

WORKLIST(Hardcopy Internal Chain)

VB 133823

WorkList Name : %1-p5172

WorkList ID : 186122

Department : Wet-Chemistry

Date : 12-09-2024 09:28:20

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5172-22	MYCZ38S	Solid	Percent Solids	Cool 4 deg C	USEP01	C11	09/16/2024	Chemtech -SO

Date/Time 12/09/24 11:40
Raw Sample Received by: 28 w...
Raw Sample Relinquished by: J.C. (sm)

Date/Time 12/09/24 12:25
Raw Sample Received by: J.C. (sm)
Raw Sample Relinquished by: J.C. (sm)