

SDG COVER PAGE

Lab Name: Alliance Technical Group, LLC Contract: 68HERH20D0011
 Lab Code: ACE Case No.: 51817 MA No.: 3225.1,3226.1 SDG No.: MYE470
 SOW No. : SFAM01.1

EPA Sample No.	Lab Sample Id	Analysis Method			
		ICP-AES	ICP-MS	Mercury	Cyanide
MYE470	P4479-01	X	X		
MYE471	P4479-02	X	X		
MYE472	P4479-03	X	X		
MYE473	P4479-04	X	X		
MYE474	P4479-05	X	X		
MYE475	P4479-06	X	X		
MYE476	P4479-07	X	X		
MYE477	P4479-08	X	X		
MYE478	P4479-09	X	X		
MYE479	P4479-10	X	X		
MYE480	P4479-11	X	X		
MYE481	P4479-12	X	X		
MYE481D	P4479-13	X	X		
MYE481S	P4479-14	X	X		
MYE482	P4479-15	X	X		
MYE483	P4479-16	X	X		
MYE484	P4479-17	X	X		
MYE485	P4479-18	X	X		
MYE486	P4479-19	X	X		
MYE487	P4479-20	X	X		
MYE488	P4479-21	X	X		
MYE489	P4479-22	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 # MYE470

USEPA CLP COC (LAB COPY)

Date Shipped: 10/21/2024

Carrier Name: FedEx

Airbill No.: 7793 0484 2737

CHAIN OF CUSTODY RECORD

Case #: 51817

Cooler #: EPA Cooler 01

No: 9-101424-084123-0135

Lab: Alliance Technical Group LLC

Lab Contact: Mohammad Ahmed

Lab Phone: 908-728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
90028-H-00011-01	MYE460	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7908 (None) (1)	90028-H-00011	04/23/2024 17:06	
90028-H-00012-01	MYE461	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7909 (None) (1)	90028-H-00012	04/23/2024 17:21	
90028-I-00001-01	MYE462	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7910 (None) (1)	90028-I-00001	04/23/2024 16:16	
90028-I-00004-01	MYE463	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7911 (None) (1)	90028-I-00004	04/23/2024 16:02	
90028-I-00005-01	MYE464	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7912 (None) (1)	90028-I-00005	04/23/2024 16:50	
90028-I-00006-01	MYE465	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7913 (None) (1)	90028-I-00006	04/23/2024 16:37	
90028-I-00007-01	MYE466	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7914 (None) (1)	90028-I-00007	04/23/2024 16:25	
90028-I-00008-01	MYE467	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7915 (None) (1)	90028-I-00008	04/23/2024 16:28	
90028-I-00009-01	MYE468	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7916 (None) (1)	90028-I-00009	04/23/2024 16:22	
90028-K-00002-01	MYE469	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7917 (None) (1)	90028-K-00002	04/23/2024 14:30	
90028-K-00003-01	MYE470	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7918 (None) (1)	90028-K-00003	04/23/2024 14:36	
90028-K-00004-01	MYE471	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7919 (None) (1)	90028-K-00004	04/23/2024 14:42	
90028-K-00005-01	MYE472	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7920 (None) (1)	90028-K-00005	04/23/2024 14:35	
90028-K-00006-01	MYE473	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7921 (None) (1)	90028-K-00006	04/23/2024 14:44	
90028-K-00007-01	MYE474	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7922 (None) (1)	90028-K-00007	04/23/2024 14:34	
90028-K-00008-01	MYE475	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7923 (None) (1)	90028-K-00008	04/23/2024 14:33	
90028-K-00009-01	MYE476	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7924 (None) (1)	90028-K-00009	04/23/2024 14:38	

Special Instructions: 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

057949-50

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

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

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	<i>Long Walker</i> R9 ES AT	10/18/24 15:56	<i>[Signature]</i>	10-22-24 1003	1792 mL GARD #1
					CUSTODY SEAL intact
					NO Temp 314.

68HERH20D0011

SDG # MYE470

USEPA CLP COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 9-101424-084320-0136

DateShipped: 10/21/2024

Lab: Alliance Technical Group LLC

CarrierName: FedEx

Lab Contact: Mohammad Ahmed

AirbillNo: 7793 0484 1991

Case #: 51817
Cooler #: EPA Cooler 02
Lab Phone: 908-728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
90028-J-00010-01	MYE488	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7936 (None) (1)	90028-J-00010	04/23/2024 16:34	Y9
90028-J-00010-02	MYE489	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7937 (None) (1)	90028-J-00010	04/23/2024 16:36	20
90028-J-00011-01	MYE490	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7938 (None) (1)	90028-J-00011	04/23/2024 16:32	
90028-J-00012-01	MYE491	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7939 (None) (1)	90028-J-00012	04/23/2024 16:22	
90028-J-S0001-01	MYE492	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7940 (None) (1)	90028-J-S0001	04/23/2024 16:08	
90028-J-S0002-01	MYE493	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7941 (None) (1)	90028-J-S0002	04/23/2024 16:16	
90028-J-00001-03	MYE494	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7942 (None) (1)	90028-J-00001	04/23/2024 15:08	
90028-J-00002-01	MYE495	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7943 (None) (1)	90028-J-00002	04/23/2024 15:00	
90028-J-00003-01	MYE496	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7944 (None) (1)	90028-J-00003	04/23/2024 15:09	
90028-J-00005-01	MYE497	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7945 (None) (1)	90028-J-00005	04/23/2024 14:53	
90028-J-00006-01	MYE498	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7946 (None) (1)	90028-J-00006	04/23/2024 15:05	
90028-J-00007-01	MYE499	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7947 (None) (1)	90028-J-00007	04/23/2024 15:42	
90028-J-00008-01	MYE4A0	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7948 (None) (1)	90028-J-00008	04/23/2024 15:38	
90028-J-00009-01	MYE4A1	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7949 (None) (1)	90028-J-00009	04/23/2024 15:03	
90028-J-00010-01	MYE4A2	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7950 (None) (1)	90028-J-00010	04/23/2024 15:40	
90028-J-00011-01	MYE4A3	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7951 (None) (1)	90028-J-00011	04/23/2024 15:37	
90028-J-S0001-01	MYE4A4	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7952 (None) (1)	90028-J-S0001	04/23/2024 15:46	
90028-J-S0002-01	MYE4A5	Soil/ REAC	null	ICP-AES and ICP-MS(21)	9-7953 (None) (1)	90028-J-S0002	04/23/2024 15:36	
90028-K-00001-01	MYE4A6	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7954 (None) (1)	90028-K-00001	04/23/2024 14:46	

Sample(s) to be used for Lab QC: 90028-J-00001-03 Tag 9-7942 - Special Instructions: 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

057869-70

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

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
	<i>James Wilkerson</i> R9 ESAT	10/18/24 15:58	<i>[Signature]</i>	10-26-24 1003	18.3°C IN RV #1
					custody seal intact
					no Temp BLV.

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>George Meson</u>	Log-in Date 10/22/2024
Received By (Signature) <u>[Signature]</u>	
Case Number 51817	SDG No. MYE470 MA No. 3225.1,3226.1

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	<u>057949-50</u>
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	<u>779304842737</u> <u>1</u>
6. Shipping Container Temperature Indicator Bottle	Absent
7. Shipping Container Temperature	<u>17.9</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>10/22/2024</u>
12. Time Received	<u>10:03</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MYE470	N/A	9-7918	P4479-01	Intact
2	MYE471	N/A	9-7919	P4479-02	Intact
3	MYE472	N/A	9-7920	P4479-03	Intact
4	MYE473	N/A	9-7921	P4479-04	Intact
5	MYE474	N/A	9-7922	P4479-05	Intact
6	MYE475	N/A	9-7923	P4479-06	Intact
7	MYE476	N/A	9-7924	P4479-07	Intact
8	MYE477	N/A	9-7925	P4479-08	Intact
9	MYE478	N/A	9-7926	P4479-09	Intact
10	MYE479	N/A	9-7927	P4479-10	Intact
11	MYE480	N/A	9-7928	P4479-11	Intact
12	MYE481	N/A	9-7929	P4479-12	Intact
13	MYE481D	N/A	9-7929	P4479-13	Intact
14	MYE481S	N/A	9-7929	P4479-14	Intact
15	MYE482	N/A	9-7930	P4479-15	Intact
16	MYE483	N/A	9-7931	P4479-16	Intact
17	MYE484	N/A	9-7932	P4479-17	Intact
18	MYE485	N/A	9-7933	P4479-18	Intact
19	MYE486	N/A	9-7934	P4479-19	Intact
20	MYE487	N/A	9-7935	P4479-20	Intact
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
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>10/22/24</u>	Logbook Page No. N/A

FORM DC-1
SAMPLE LOG-IN SHEET

Lab Name : Alliance Technical Group, LLC		Page <u>2</u> of <u>2</u>
Received By (Print Name) <u>Gorge Magon</u>		Log-in Date 10/22/2024
Received By (Signature) <u>[Signature]</u>		
Case Number 51817	SDG No. MYE470	MA No. 3225.1,3226.1

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	<u>057869-90</u>
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	<u>779304841991</u> <u>2</u>
6. Shipping Container Temperature Indicator Bottle	Absent
7. Shipping Container Temperature	<u>18.3</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>10/22/2024</u>
12. Time Received	<u>10:03</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MYE488	N/A	9-7936	P4479-21	Intact
2	MYE489	N/A	9-7937	P4479-22	Intact
3	N/A	N/A	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A	N/A
6	N/A	N/A	N/A	N/A	N/A
7	N/A	N/A	N/A	N/A	N/A
8	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A
11	N/A	N/A	N/A	N/A	N/A
12	N/A	N/A	N/A	N/A	N/A
13	N/A	N/A	N/A	N/A	N/A
14	N/A	N/A	N/A	N/A	N/A
15	N/A	N/A	N/A	N/A	N/A
16	N/A	N/A	N/A	N/A	N/A
17	N/A	N/A	N/A	N/A	N/A
18	N/A	N/A	N/A	N/A	N/A
19	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A
21	N/A	N/A	N/A	N/A	N/A
22	N/A	N/A	N/A	N/A	N/A
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>10/22/24</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.	51817	SDG NO.	MYE470
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	4	✓	
3. Sample Log-In Sheet (DC-1)	5	6	✓	
4. CSF Inventory Sheet (DC-2)	7	9	✓	
5. SDG Narrative	10	19	✓	
6. Communication Logs	NA	NA	✓	
7. Percent Solids Log	20	22	✓	
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	23	42	✓	
9. Instrument raw data by instrument in analysis order	43	221	✓	
Other Data				
10. Standard and Reagent Preparation Logs	222	371	✓	
11. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	372	373	✓	
12. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	374	377	✓	
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	378	397	✓	
18. Instrument raw data by instrument in analysis order	398	1258	✓	
Other Data				
19. Standard and Reagent Preparation Logs	1259	1399	✓	
20. Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	1400	1401	✓	
21. Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	1402	1414	✓	
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 2)

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)

(Signature)

Nimisha Pandya, Document Control Officer

(Print Name & Title)

(Date)

Audited by:
(EPA)

(Signature)

(Print Name & Title)

(Date)

PAGE NOs:		CHECK	
FROM	TO	LAB	REGION
1415	1416	✓	
NA	NA	✓	
1417	1419	✓	
NA	NA	✓	
1420	1423	✓	
NA	NA	✓	



**284 Sheffield Street
Mountainside, NJ 07092**

SDG NARRATIVE

USEPA

SDG # MYE470

CASE # 51817

CONTRACT # 68HERH20D0011

SOW# SFAM01.1

LAB NAME: Alliance Technical Group, LLC

LAB CODE: ACE

LAB ORDER ID # P4479

MODIFIED ANALYSIS #3225.1, 3226.1

A. Number of Samples and Date of Receipt

20 Soil samples were delivered to the laboratory intact on 10/22/2024.

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: 17.9°C, 18.3°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.

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.

F. Analytical Techniques:

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



**284 Sheffield Street
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)

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 MYE470 For Antimony:

If C = 0.0098683 ppm

Vf = 100 ml

W = 1.32g

S = 0.96(96.0/100)

DF = 2

$$\text{Concentration (mg/kg)} = 0.0098683 \times \frac{100}{1.32 \times 0.96} \times 2$$

$$= 1.557496 \text{ mg/kg}$$

$$= 1.6 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for ICP-MS Soil Sample:

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

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

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



**284 Sheffield Street
Mountainside, NJ 07092**

Example Calculation For Sample MYE470 For Antimony :

If C = 2.14 ppb

Vf = 500 ml

W = 1.32 g

S = 0.96(96.0/100)

DF = 1

$$\text{Concentration (mg/kg)} = 2.14 \times \frac{500}{1.32 \times 0.96} \times 1 / 1000$$

$$= 0.84438 \text{ mg/kg}$$

$$= 0.84 \text{ mg/kg (Reported Result with Signification)}$$

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. Spike sample (MYE481SRE) did meet requirements except for Silver. Duplicate sample did meet requirements. Serial Dilution did meet requirements except for Vanadium.

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.

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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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: 09/04/2024	MA: 3225.0	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. ○ 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: 09/04/2024	MA: 3226.0	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. ○ 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: 10/24/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 12:30
In Date: 10/23/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 07:37
Out Date: 10/24/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133066

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
P4479-01	MYE470	1	1.15	8.53	9.68	9.34	96.0	
P4479-02	MYE471	2	1.15	8.52	9.67	9.29	95.5	
P4479-03	MYE472	3	1.15	8.50	9.65	9.18	94.5	
P4479-04	MYE473	4	1.17	8.53	9.7	9.37	96.1	
P4479-05	MYE474	5	1.17	8.62	9.79	9.39	95.4	
P4479-06	MYE475	6	1.16	8.47	9.63	9.08	93.5	
P4479-07	MYE476	7	1.17	8.56	9.73	9.33	95.3	
P4479-08	MYE477	8	1.17	8.48	9.65	9.33	96.2	
P4479-09	MYE478	9	1.16	8.40	9.56	9.24	96.2	
P4479-10	MYE479	10	1.17	8.53	9.7	9.33	95.7	
P4479-11	MYE480	11	1.18	8.57	9.75	9.44	96.4	
P4479-12	MYE481	12	1.17	8.49	9.66	9.26	95.3	
P4479-13	MYE481D	13	1.17	8.49	9.66	9.26	95.3	
P4479-14	MYE481S	14	1.17	8.49	9.66	9.26	95.3	
P4479-15	MYE482	15	1.15	8.65	9.8	9.65	98.3	
P4479-16	MYE483	16	1.15	8.66	9.81	9.57	97.2	
P4479-17	MYE484	17	1.14	8.65	9.79	9.43	95.8	
P4479-18	MYE485	18	1.16	8.61	9.77	9.55	97.4	
P4479-19	MYE486	19	1.16	8.60	9.76	9.16	93.0	
P4479-20	MYE487	20	1.17	8.73	9.9	9.53	95.8	
P4479-21	MYE488	21	1.16	8.62	9.78	9.36	95.1	
P4479-22	MYE489	22	1.17	8.73	9.9	9.5	95.4	

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

WORKLIST(Hardcopy Internal Chain)

133066

WorkList Name : %1-p4479 WorkList ID : 184691 Department : Wet-Chemistry Date : 10-23-2024 09:34:17

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4479-01	MYE470	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-02	MYE471	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-03	MYE472	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-04	MYE473	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-05	MYE474	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-06	MYE475	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-07	MYE476	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-08	MYE477	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-09	MYE478	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-10	MYE479	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-11	MYE480	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-12	MYE481	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-13	MYE481D	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-14	MYE481S	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-15	MYE482	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-16	MYE483	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-17	MYE484	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-18	MYE485	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-19	MYE486	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-20	MYE487	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4479-21	MYE488	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO

Date/Time 10/23/24 12:00
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

Date/Time 10/23/24 12:35
 Raw Sample Received by: [Signature]
 Raw Sample Relinquished by: [Signature]

WORKLIST(Hardcopy Internal Chain)

133066

WorkList Name : %1-p4479 WorkList ID : 184691 Department : Wet-Chemistry Date : 10-23-2024 09:34:17

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4479-22	MYE489	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO

Date/Time 10/23/24 12:10:00
Raw Sample Received by: JH WCI
Raw Sample Relinquished by: CL SR

Date/Time 10/23/24 12:13:57
Raw Sample Received by: CL SR
Raw Sample Relinquished by: JH WCI