

April 28, 2022

**Absaroka****Max Moran****112 High St.****Buffalo****WY 82834****Project Name - CIT Arapahoe 25S Spill****Project Number - CIT.CO.0555.01**

Attached are your analytical results for CIT Arapahoe 25S Spill received by Origins Laboratory, Inc. April 20, 2022. This project is associated with Origins project number Y204459-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



Absaroka  
112 High St.  
Buffalo

WY 82834

Max Moran  
Project Number: CIT.CO.0555.01  
Project: CIT Arapahoe 25S Spill

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AU-SS-03	Y204459-01	Soil	April 20, 2022 10:30	04/20/2022 14:33
AU-SS-04	Y204459-02	Soil	April 20, 2022 10:35	04/20/2022 14:33
AU-SS-05-SW	Y204459-03	Soil	April 20, 2022 10:45	04/20/2022 14:33
AU-SS-06-SW	Y204459-04	Soil	April 20, 2022 10:50	04/20/2022 14:33

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**ORIGINS**  
LABORATORY, INC

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Client: Absaroka Energy and Environmental Solutions  
Address: 112 High St. Buffalo, WY 82834  
Telephone Number: 720.352.5326  
Email Address: Max.Moran@AbsarokaSolutions.com

Project Manager: Max Moran  
Project Name: CIT Arapahoe 25S Spill  
Project Number: CIT.CO.0555.01  
Samples Collected By: Max Moran

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ #		
AU-55-03	4/20/22	1030	2	X				X			EC SAR	1
AU-55-04	1	1035	2	X				X			SAR, pH	2
AU-55-05-Sur	1	1045	2	X				X			EC SAR	3
AU-55-06-Sur	1	1050	2	X				X			SAR	4
											Prex hold all	5
											additional sample	6
											volume for	7
											30 days	8
												9
												10

  

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
	4/20/22	1433		4/20/22	1433	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322

Date Results Needed

Origins Laboratory, Inc.

*J. Bynon*

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Origins Laboratory F-012207-01-R1  
Effective Date: 01/09/12

**Sample Receipt Checklist**

Origins Work Order: Y204459 Client: Absaroka  
Client Project ID: CIT Arapahoe

Checklist Completed by: JB Shipped Via: HN  
Date/time completed: 4/21/22 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_

Cooler Number/Temperature: 118.4 °C ☐ °C ☐ °C (Describe) \_\_\_\_\_

Thermometer ID: T004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>Same Day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.				
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JB Date/Time Reviewed 4-22-22

Origins Laboratory, Inc.

*J. Bynon*

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Project Number: CIT.CO.0555.01  
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**AU-SS-03****4/20/2022 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y204459-01 (Soil)****Metals by Saturated Paste by EPA 6010**

Calcium	11.9	0.499	meq/L	10	[CALC]	KAP	04/22/2022	04/25/2022
Magnesium	6.14	0.823	"	"	"	KAP	"	"
Sodium	18.6	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	6.19		SAR	1	B2D2214	KAP	"	"
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	4.08	0.00500	mmhos/cm	1	B2D2222	TSH	04/22/2022	04/23/2022
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## AU-SS-04

4/20/2022 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc.

Y204459-02 (Soil)

### Metals by Saturated Paste by EPA 6010

Calcium	4.80	0.499	meq/L	10	[CALC]	KAP	04/22/2022	04/25/2022
Magnesium	2.01	0.823	"	"	"	KAP	"	"
Sodium	29.2	0.435	"	"	"	KAP	"	"

### pH in Soil by 9045D

pH	8.00		pH Units	1	B2D2218	TSH	04/22/2022	04/23/2022
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### SAR by 20B Saturated Paste

SAR	15.8		SAR	1	B2D2214	KAP	04/22/2022	04/25/2022
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**AU-SS-05-SW****4/20/2022 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y204459-03 (Soil)****Metals by Saturated Paste by EPA 6010**

Calcium	6.93	0.499	meq/L	10	[CALC]	KAP	04/22/2022	04/25/2022
Magnesium	2.28	0.823	"	"	"	KAP	"	"
Sodium	13.9	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	6.48		SAR	1	B2D2214	KAP	"	"
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.931	0.00500	mmhos/cm	1	B2D2222	TSH	04/22/2022	04/23/2022
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**AU-SS-06-SW****4/20/2022 10:50:00AM**

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

**Origins Laboratory, Inc.****Y204459-04 (Soil)****Metals by Saturated Paste by EPA 6010**

Calcium	6.22	0.499	meq/L	10	[CALC]	KAP	04/22/2022	04/25/2022
Magnesium	2.20	0.823	"	"	"	KAP	"	"
Sodium	8.30	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	4.05		SAR	1	B2D2214	KAP	"	"
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## Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B2D2218 - NO PREP</b>										
<b>Duplicate (B2D2218-DUP1)</b>		<b>Source: Y204458-01</b>			Prepared: 04/22/2022 Analyzed: 04/23/2022					
pH	6.66		pH Units		6.65			0.150	25	
<b>Batch B2D2222 - NO PREP</b>										
<b>Blank (B2D2222-BLK1)</b>		Prepared: 04/22/2022 Analyzed: 04/23/2022								
Specific Conductance (EC)	0.00190	0.00500	mmhos/cm							
<b>Duplicate (B2D2222-DUP1)</b>		<b>Source: Y204458-01</b>			Prepared: 04/22/2022 Analyzed: 04/23/2022					
Specific Conductance (EC)	0.139	0.00500	mmhos/cm		0.134			3.51	25	

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### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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