

FIGURES

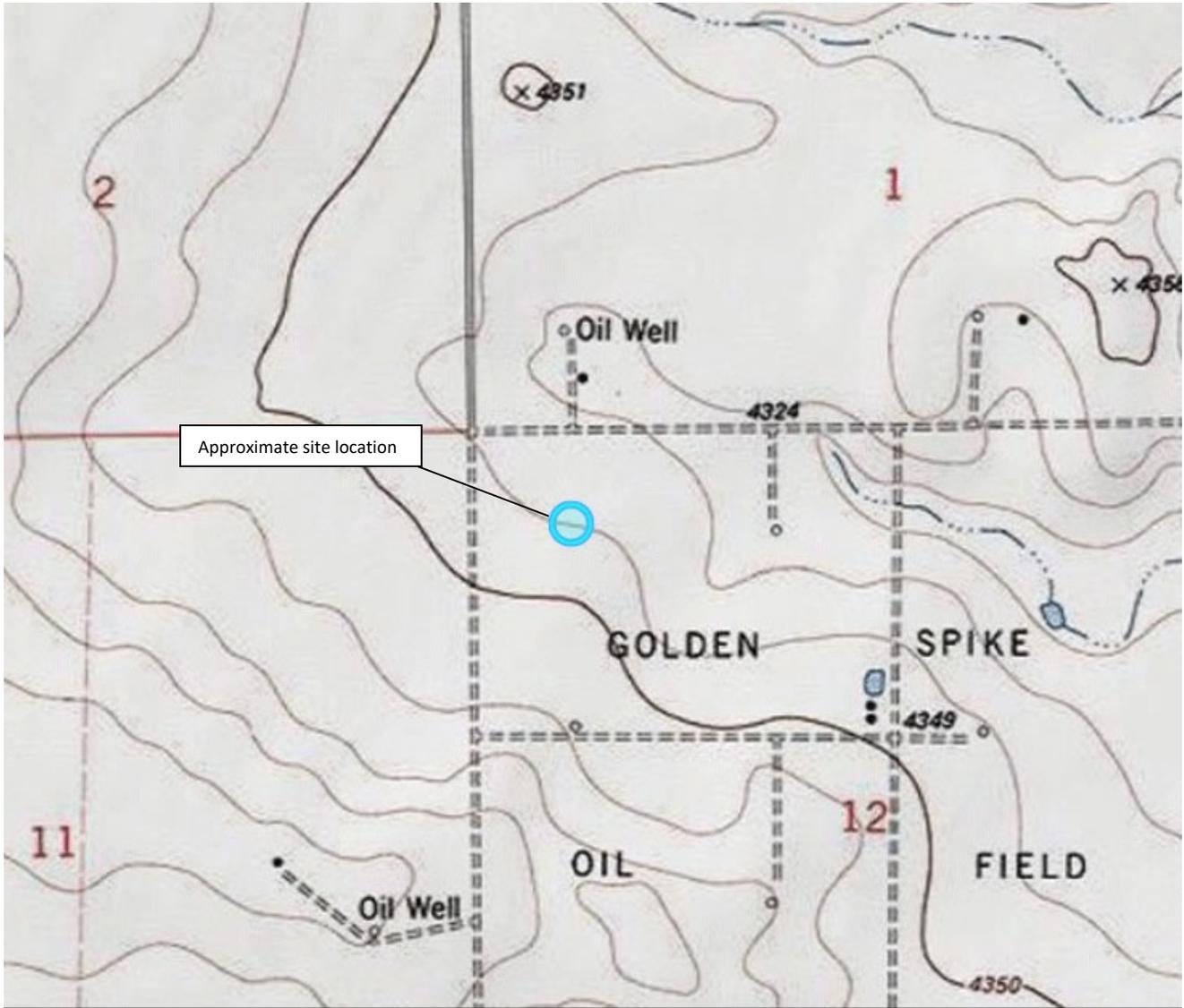


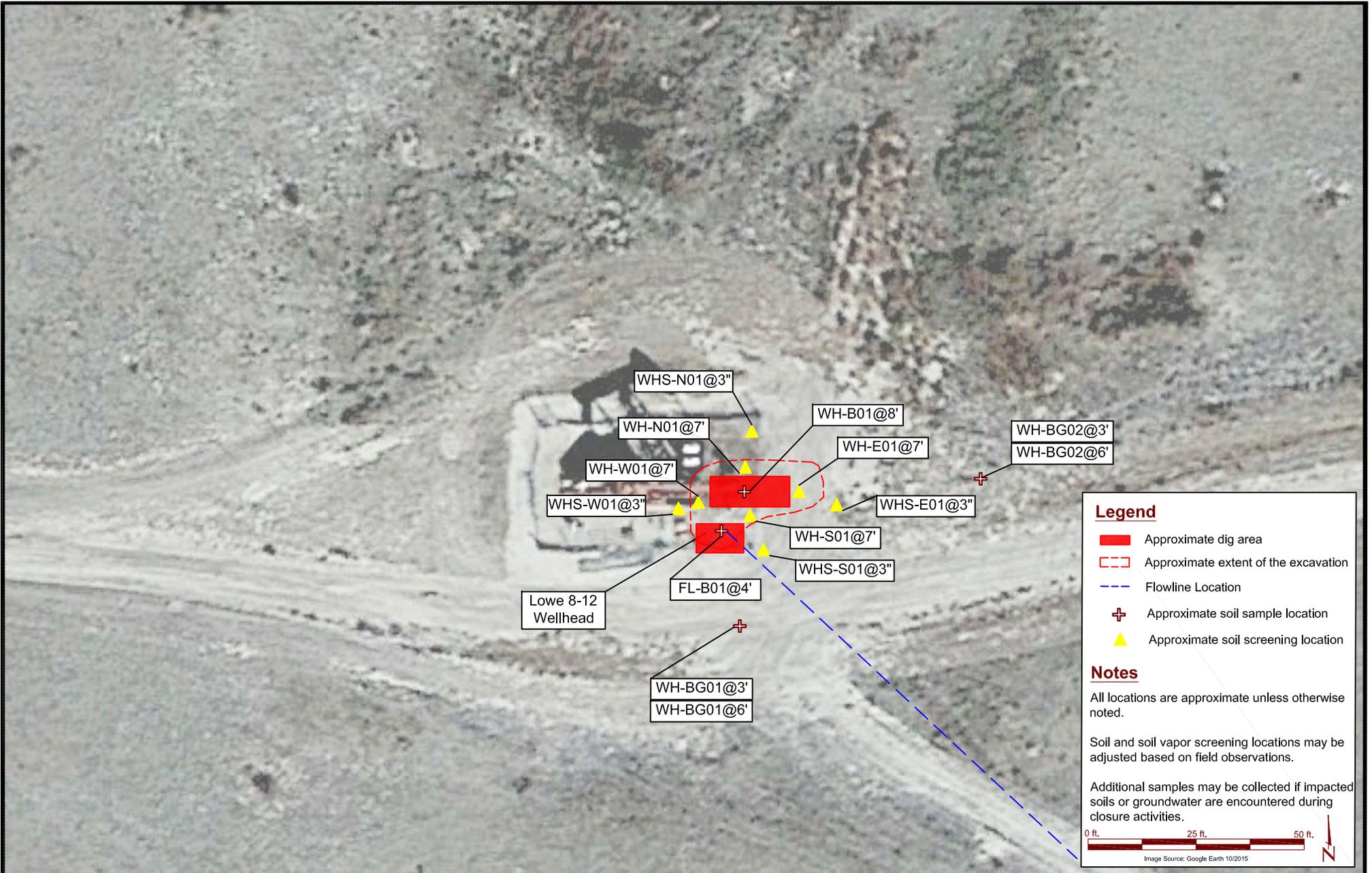
Figure 1

Site Location Map
Murfin Drilling Company
 Lowe 8-12
 NWNW Sec.12-T16S-R45W
 Cheyenne County, Colorado



Source: USGS 7.5 Minute Topographic Map, South Ladder Creek, CO Quadrangle

Drawn By: AM Date: 06/15/2023



Legend

- Approximate dig area
- Approximate extent of the excavation
- Flowline Location
- + Approximate soil sample location
- ▲ Approximate soil screening location

Notes

All locations are approximate unless otherwise noted.

Soil and soil vapor screening locations may be adjusted based on field observations.

Additional samples may be collected if impacted soils or groundwater are encountered during closure activities.

0 ft. 25 ft. 50 ft.

Image Source: Google Earth 10/2015

DATE: December 18, 2023

DESIGNED BY: D. Coloccia

DRAWN BY: A. McNall



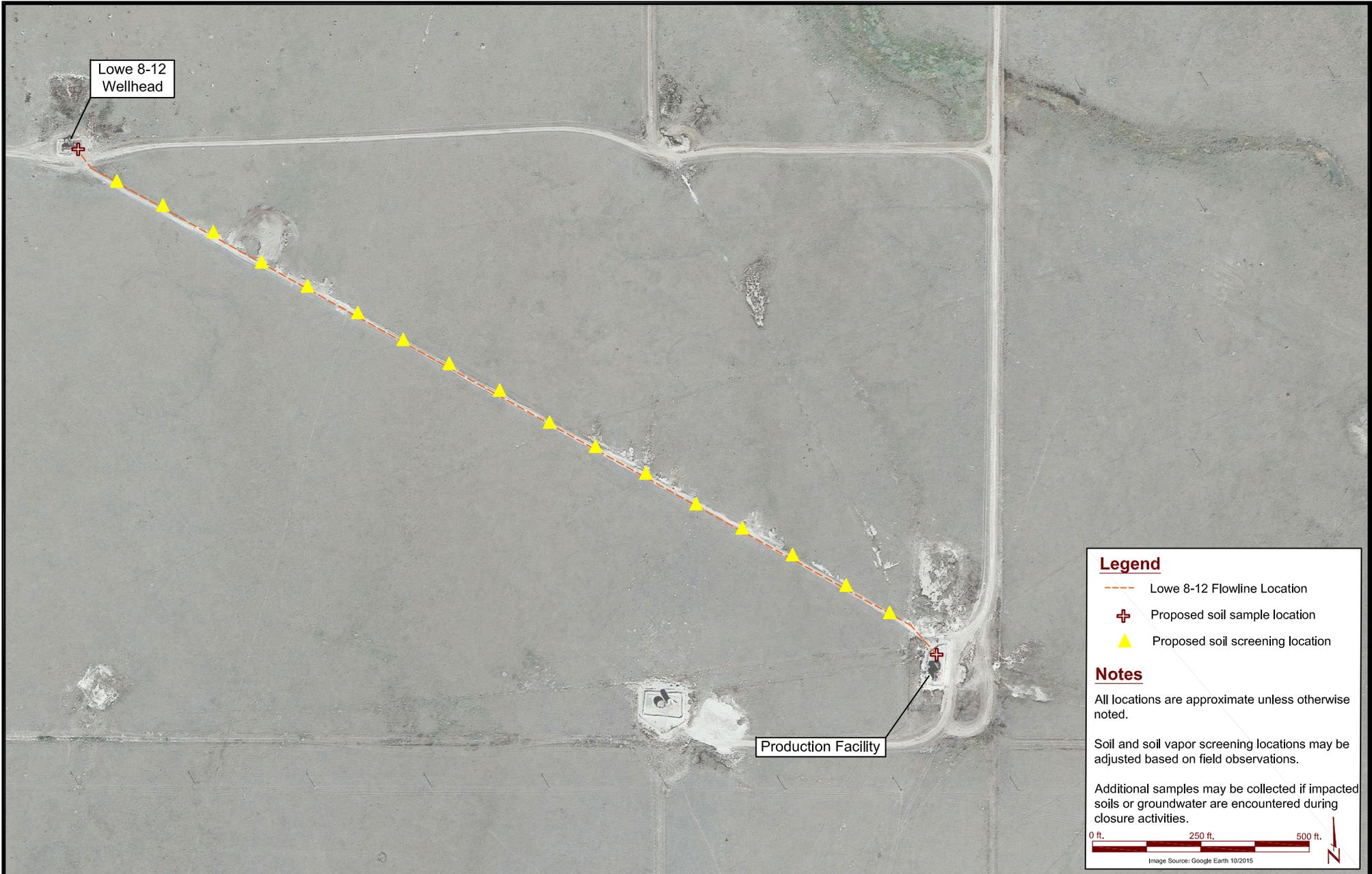
EAGLE
ENVIRONMENTAL
CONSULTING, LLC

8000 W 44th Ave, Wheat Ridge, CO 80033
Ph: 303-433-0479 • F: 303-325-5449

Murfin Drilling Company
Lowe 8-12 Wellhead
NWNW Sec. 12-T16S-R45W
Cheyenne County, Colorado

Screening and Sample
Location Map

Figure
2



Legend

- Lowe 8-12 Flowline Location
- ⊕ Proposed soil sample location
- ▲ Proposed soil screening location

Notes

All locations are approximate unless otherwise noted.

Soil and soil vapor screening locations may be adjusted based on field observations.

Additional samples may be collected if impacted soils or groundwater are encountered during closure activities.

0 ft. 250 ft. 500 ft.

Image Source: Google Earth 10/2015

DATE:	June 15, 2023
DESIGNED BY:	D. Coloccia
DRAWN BY:	A. McNall

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Screening and Sample
Location Map

Figure
3

TABLES

TABLE 1
LOWE 8-12
SOIL SAMPLE FIELD DATA SUMMARY TABLE
MURFIN DRILLING COMPANY

Sample Location	Date	Approximate Depth (feet bgs)	PID (ppm-v)	Visual Observation	Olfactory Observation	Latitude, Longitude	Submitted for Lab Analysis (Y/N)
Wellhead Soil Samples							
WH-B01 @ 8'	11/27/2023	8	2.6	N/S	N/O	38.685431, -102.418178	Y
WH-N01 @ 7'	11/27/2023	7	3.1	N/S	N/O	38.685449, -102.418167	N
WH-S01 @ 7'	11/27/2023	7	2.6	N/S	N/O	38.685427, -102.418166	N
WH-E01 @ 7'	11/27/2023	7	2.9	N/S	N/O	38.685446, -102.418147	N
WH-W01 @ 7'	11/27/2023	7	2.1	N/S	N/O	38.685431, -102.418197	N
WHS-N01 @ 3"	11/27/2023	0.25	0.6	N/S	N/O	38.685462, -102.418160	N
WHS-S01 @ 3"	11/27/2023	0.25	1.4	N/S	N/O	38.685396, -102.418170	N
WHS-E01 @ 3"	11/27/2023	0.25	0.8	N/S	N/O	38.685435, -102.418100	N
WHS-W01 @ 3"	11/27/2023	0.25	1.0	N/S	N/O	38.685443, -102.418218	N
Flowline Soil Samples							
FL-B01 @ 4'	11/27/2023	4	3.6	N/S	N/O	38.685412, -102.418185	Y
Wellhead Background Soil Samples							
WH-BG01 @ 3'	11/27/2023	3	2.2	N/S	N/O	38.685353, -102.418163	Y
WH-BG01 @ 6'	11/27/2023	6	2.8	N/S	N/O	38.685353, -102.418163	Y
WH-BG02 @ 3'	11/27/2023	3	2.1	N/S	N/O	38.685440, -102.418003	Y
WH-BG02 @ 6'	11/27/2023	6	2.3	N/S	N/O	38.685440, -102.418003	Y

bgs = below ground surface

PID = photoionization detector

ppm-v = parts per million by volume

BOLD = ECMC Table 915-1 Exceedance

N/S = No Staining

N/O = No Odor

TABLE 2
LOWE 8-12
SOIL SAMPLE FIELD DATA SUMMARY TABLE
MURFIN DRILLING COMPANY

Sample Location	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Naphthalene (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)
<i>ECMC standards for soil (mg/kg) ⁽¹⁾</i>		0.0026	0.69	0.78	9.9	500			0.0038	0.0081	0.0087
<i>ECMC standards for soil (mg/kg) ⁽²⁾</i>		1.2	490	5.8	58	500			2	30	27
Wellhead Soil Samples											
WH-B01 @ 8'	11/27/2023	<0.00200	<0.00200	<0.00200	<0.00200	<0.200	576	852	<0.002	<0.00200	<0.00200
Flowline Soil Samples											
FL-B01 @ 4'	11/27/2023	<0.00200	<0.00200	<0.00200	<0.00200	<0.200	490	710	<0.002	<0.00200	<0.00200

Notes:

⁽¹⁾ ECMC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

⁽²⁾ ECMC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

ECMC = Energy & Carbon Management Commission

< = Analytical result is less than the laboratory reporting limit

mg/kg = milligrams per kilogram

Values presented in **BOLD** contained concentrations exceeding ECMC Table 915-1 Cleanup Concentrations

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

TMB = Trimethylbenzene

TABLE 3
LOWE 8-12
SOIL SAMPLE RESULTS SUMMARY TABLE - SOIL SUITABILITY FOR RECLAMATION
MURFIN DRILLING COMPANY

Sample Location	Date	Depth (ft. bgs)	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
<i>ECMC standards for soil (mg/kg)</i> ⁽¹⁾			6 - 8.3	<6	<4	2
<i>Site-Specific Background Limits</i>			NA	NA	4.63	NA
Wellhead Soil Samples						
WH-B01 @ 8'	11/27/2023	8	7.87	15.3	8.59	0.772
Flowline Soil Samples						
FL-B01 @ 4'	11/27/2023	4	8.13	14.7	8.87	0.774
Background Soil Samples						
WH-BG01 @ 3'	11/27/2023	3	8.09	4.83	3.57	0.468
WH-BG01 @ 6'	11/27/2023	6	8.01	4.89	4.03	0.488
WH-BG02 @ 3'	11/27/2023	3	7.82	1.41	4.40	0.409
WH-BG02 @ 6'	11/27/2023	6	7.90	1.39	4.63	0.405

Notes:

⁽¹⁾ Standards for soil are taken from ECMC Table 915-1, effective January 15, 2021

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

ft. bgs = Feet below ground surface

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

SAR = Sodium Absorption Ratio

EC = Electrical Conductivity

Values presented in **BOLD** contained concentrations exceeding ECMC Table 915-1 Cleanup Concentrations

TABLE 4
LOWE 8-12
SOIL SAMPLE RESULTS SUMMARY TABLE - PAHs
MURFIN DRILLING COMPANY

Sample Location	Date	1-Methyl-naphthalene (mg/kg)	2-Methyl-naphthalene (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)-anthracene (mg/kg)	Benzo(a)-pyrene (mg/kg)	Benzo(b)-fluoranthene (mg/kg)	Benzo(k)-fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)-anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Ideno(1,2,3-cd)-pyrene (mg/kg)	Pyrene (mg/kg)
<i>ECMC standards for soil (mg/kg) ⁽¹⁾</i>		0.006	0.019	0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3
<i>ECMC standards for soil (mg/kg) ⁽²⁾</i>		18	24	360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180
<i>Wellhead Soil Samples</i>															
WH-B01 @ 8'	11/27/2023	0.012	0.008	0.043	<0.020	<0.005	<0.020	0.024	<0.020	0.031	<0.020	<0.020	0.056	<0.020	0.029
<i>Flowline Soil Samples</i>															
FL-B01 @ 4'	11/27/2023	0.020	0.011	0.058	0.033	<0.005	<0.020	<0.020	<0.020	0.031	<0.020	<0.020	0.063	<0.020	0.026

Notes:

⁽¹⁾ Standards are taken from ECMC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

⁽²⁾ Standards for soil are taken from ECMC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = milligrams per kilogram

PAH = Polycyclic Aromatic Hydrocarbons

Values presented in **BOLD** contained concentrations exceeding ECMC Table 915-1 Cleanup Concentrations

**TABLE 5
LOWE 8-12
SOIL SAMPLE RESULTS SUMMARY TABLE - METALS
MURFIN DRILLING COMPANY**

Sample Location	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
<i>ECMC standards for soil (mg/kg) ⁽¹⁾</i>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
<i>ECMC standards for soil (mg/kg) ⁽²⁾</i>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
<i>Site-Specific Background Limits</i>		7.53	287.5	NA	NA	NA	16.75	NA	0.335	NA	NA
Wellhead Soil Samples											
WH-B01 @ 8'	11/27/2023	5.89*	262*	0.254	*<0.5	14.6	19.7	13.8	0.208	<0.0924	53.5
Flowline Soil Samples											
FL-B01 @ 4'	11/27/2023	5.34*	333	0.232	*<0.5	12.5	21.0	12.7	0.215	<0.0886	48.2
Background Soil Samples											
WH-BG01 @ 3'	11/27/2023	5.74	176	0.219	<0.5	13.5	11.6	14.1	0.200	<0.0934	55.3
WH-BG01 @ 6'	11/27/2023	5.52	176	0.209	<0.5	12.8	11.8	14.1	0.226	<0.0887	51.7
WH-BG02 @ 3'	11/27/2023	5.76	218	0.258	<0.5	14.0	12.5	14.6	0.242	<0.0904	59.7
WH-BG02 @ 6'	11/27/2023	6.03	230	0.267	<0.5	14.9	13.4	15.5	0.268	<0.0923	62.8

Notes:

⁽¹⁾ Standards are taken from ECMC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

⁽²⁾ Standards for soil are taken from ECMC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

Values presented in **BOLD** contained concentrations exceeding ECMC Table 915-1 Cleanup Concentrations.

Values presented in **BOLD*** contained concentrations exceeding ECMC Table 915-1 Cleanup Concentrations, but are within background concentrations.

* = compound is in accordance with the ECMC Table 915-1 Footnote 9.



**ATTACHMENT A
LABORATORY DATA**

December 15, 2023

Eagle Environmental Consulting, LLC

Dan Coloccia

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Murfin - Lowe 8-12

Project Number - [none]

Attached are your analytical results for Murfin - Lowe 8-12 received by Origins Laboratory, Inc. November 27, 2023. This project is associated with Origins project number Y311612-01.

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



Eagle Environmental Consulting, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Dan Coloccia
Project Number: [none]
Project: Murfin - Lowe 8-12

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@8'	Y311612-01	Soil	November 27, 2023 12:30	11/27/2023 16:44
FL-B01@4'	Y311612-02	Soil	November 27, 2023 12:36	11/27/2023 16:44
WH-BG01@3'	Y311612-03	Soil	November 27, 2023 12:43	11/27/2023 16:44
WH-BG01@6'	Y311612-04	Soil	November 27, 2023 12:45	11/27/2023 16:44
WH-BG02@3'	Y311612-05	Soil	November 27, 2023 12:50	11/27/2023 16:44
WH-BG02@6'	Y311612-06	Soil	November 27, 2023 12:52	11/27/2023 16:44

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4311612

Client: Eagle

Client Project ID: Lowe 8-12

Checklist Completed by: EHS

Shipped Via: HO
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/28/23

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 4.2 °C 1 °C 1 °C (Describe) °C

Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾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) [Signature]

Date/Time Reviewed 11/29/23

Origins Laboratory, Inc.

[Signature]

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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-B01@8'

11/27/2023 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.772		0.0997	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	576		25.0	mg/kg	1	B3K2802	11/28/2023	12/01/2023	
Residual Range Organics (C28-C40)	852		100	"	"	"	"	"	

Surrogate: o-Terphenyl	101 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3K2825	11/28/2023	11/29/2023	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.5 %		70-130			"	"	"	
Surrogate: Toluene-d8	92.0 %		70-130			"	"	"	

Origins Laboratory, Inc.



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 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-B01@8'
11/27/2023 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	92.1 %	70-130				B3K28 25	11/28/2023	11/29/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	19.5	0.499	meq/L	10	[CALC]		12/01/2023	12/03/2023	
Magnesium	9.54	0.823	"	"	"	"	"	"	
Sodium	58.5	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	0.012	0.002	mg/kg	1	B3K2823		11/28/2023	12/05/2023	
2-Methylnaphthalene	0.008	0.002	"	"	"	"	"	"	
Acenaphthene	0.043	0.020	"	"	"	"	"	"	
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	0.024	0.020	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	0.031	0.020	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U
Fluorene	0.056	0.020	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	"	U

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-B01@8'

11/27/2023 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-01 (Soil)

PAH by EPA 8270E

Naphthalene	ND		0.002	mg/kg	1	B3K2823	11/28/2023	12/05/2023	U
Pyrene	0.029		0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	108 %		60-130			"	"	"	
Surrogate: Anthracene-d10	90.9 %		60-130			"	"	"	
Surrogate: Pyrene-d10	88.9 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	96.8 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.87			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	15.3		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	8.59		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	5.89		0.0924	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	262		9.24	"	"	"	"	"	

Origins Laboratory, Inc.



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 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-B01@8'

11/27/2023 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-01 (Soil)

Table 915 metals by EPA 6020B

Cadmium	0.254		0.0924	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Copper	14.6		9.24	"	"	"	"	"	
Lead	19.7		9.24	"	"	"	"	"	
Nickel	13.8		0.924	"	"	"	"	"	
Selenium	0.208		0.0924	"	"	"	"	"	
Silver	ND		0.0924	"	"	"	"	"	
Zinc	53.5		9.24	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719799	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

FL-B01@4'

11/27/2023 12:36:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y311612-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.774		0.0998	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	490		25.0	mg/kg	1	B3K2802	11/28/2023	12/01/2023	
Residual Range Organics (C28-C40)	710		100	"	"	"	"	"	

Surrogate: o-Terphenyl	107 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3K2825	11/28/2023	11/29/2023	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.7 %		70-130			"	"	"	
Surrogate: Toluene-d8	92.6 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

FL-B01@4'

11/27/2023 12:36:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y311612-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	92.4 %	70-130				B3K28 25	11/28/2023	11/29/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	20.0	0.499	meq/L	10	[CALC]		12/01/2023	12/03/2023	
Magnesium	9.53	0.823	"	"	"	"	"	"	
Sodium	56.6	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	0.020	0.002	mg/kg	1	B3K2823		11/28/2023	12/05/2023	
2-Methylnaphthalene	0.011	0.002	"	"	"	"	"	"	
Acenaphthene	0.058	0.020	"	"	"	"	"	"	
Anthracene	0.033	0.020	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	0.031	0.020	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U
Fluorene	0.063	0.020	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	"	U

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

FL-B01@4'

11/27/2023 12:36:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-02 (Soil)

PAH by EPA 8270E

Naphthalene	ND		0.002	mg/kg	1	B3K2823	11/28/2023	12/05/2023	U
Pyrene	0.026		0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	105 %		60-130			"	"	"	
Surrogate: Anthracene-d10	92.2 %		60-130			"	"	"	
Surrogate: Pyrene-d10	92.1 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	91.6 %		60-130			"	"	"	

pH in Soil by 9045D

pH	8.13			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	14.7		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	8.87		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	5.34		0.0886	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	333		8.86	"	"	"	"	12/12/2023	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

FL-B01@4'

11/27/2023 12:36:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y311612-02 (Soil)

Table 915 metals by EPA 6020B

Cadmium	0.232		0.0886	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Copper	12.5		8.86	"	"	"	"	"	
Lead	21.0		8.86	"	"	"	"	"	
Nickel	12.7		0.886	"	"	"	"	"	
Selenium	0.215		0.0886	"	"	"	"	"	
Silver	ND		0.0886	"	"	"	"	"	
Zinc	48.2		8.86	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719799	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG01@3'
11/27/2023 12:43:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-03 (Soil)

Boron (DTPA Sorbitol)

Boron	0.468		0.100	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	10.7		0.499	meq/L	10	[CALC]	12/01/2023	12/03/2023	
Magnesium	6.57		0.823	"	"	"	"	"	
Sodium	14.2		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	8.09			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	4.83		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	3.57		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	5.74		0.0934	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	176		9.34	"	"	"	"	12/12/2023	
Cadmium	0.219		0.0934	"	"	"	"	12/06/2023	
Copper	13.5		9.34	"	"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG01@3'

11/27/2023 12:43:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-03 (Soil)

Table 915 metals by EPA 6020B

Lead	11.6		9.34	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Nickel	14.1		0.934	"	"	"	"	"	
Selenium	0.200		0.0934	"	"	"	"	"	
Silver	ND		0.0934	"	"	"	"	"	
Zinc	55.3		9.34	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719799	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG01@6'
11/27/2023 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-04 (Soil)

Boron (DTPA Sorbitol)

Boron	0.488		0.101	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	11.7		0.499	meq/L	10	[CALC]	12/01/2023	12/03/2023	
Magnesium	7.12		0.823	"	"	"	"	"	
Sodium	15.0		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	8.01			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	4.89		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	4.03		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	5.52		0.0887	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	176		8.87	"	"	"	"	12/12/2023	
Cadmium	0.209		0.0887	"	"	"	"	12/06/2023	
Copper	12.8		8.87	"	"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG01@6'

11/27/2023 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-04 (Soil)

Table 915 metals by EPA 6020B

Lead	11.8		8.87	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Nickel	14.1		0.887	"	"	"	"	"	
Selenium	0.226		0.0887	"	"	"	"	"	
Silver	ND		0.0887	"	"	"	"	"	
Zinc	51.7		8.87	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719799	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG02@3'
11/27/2023 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.409		0.101	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	22.5		0.499	meq/L	10	[CALC]	12/01/2023	12/03/2023	
Magnesium	10.7		0.823	"	"	"	"	"	
Sodium	5.74		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	7.82			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	1.41		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	4.40		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	5.76		0.0904	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	218		9.04	"	"	"	"	12/12/2023	
Cadmium	0.258		0.0904	"	"	"	"	12/06/2023	
Copper	14.0		9.04	"	"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG02@3'

11/27/2023 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-05 (Soil)

Table 915 metals by EPA 6020B

Lead	12.5		9.04	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Nickel	14.6		0.904	"	"	"	"	"	
Selenium	0.242		0.0904	"	"	"	"	"	
Silver	ND		0.0904	"	"	"	"	"	
Zinc	59.7		9.04	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719800	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG02@6'
11/27/2023 12:52:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-06 (Soil)

Boron (DTPA Sorbitol)

Boron	0.405		0.101	mg/L	1	B3L0106	12/01/2023	12/05/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	21.6		0.499	meq/L	10	[CALC]	12/01/2023	12/03/2023	
Magnesium	10.3		0.823	"	"	"	"	"	
Sodium	5.55		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	7.90			pH Units	1	B3L0112	12/01/2023	12/02/2023	
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SAR by 20B Saturated Paste

SAR	1.39		0.0100	SAR	1	B3L0109	12/01/2023	12/03/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	4.63		0.00500	mmhos/cm	1	B3L0112	12/01/2023	12/02/2023	
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Table 915 metals by EPA 6020B

Arsenic	6.03		0.0923	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Barium	230		9.23	"	"	"	"	12/12/2023	
Cadmium	0.267		0.0923	"	"	"	"	12/06/2023	
Copper	14.9		9.23	"	"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

WH-BG02@6'

11/27/2023 12:52:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y311612-06 (Soil)

Table 915 metals by EPA 6020B

Lead	13.4		9.23	mg/kg	10	B3K2821	11/28/2023	12/06/2023	
Nickel	15.5		0.923	"	"	"	"	"	
Selenium	0.268		0.0923	"	"	"	"	"	
Silver	ND		0.0923	"	"	"	"	"	
Zinc	62.8		9.23	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L719800	11/27/2023	11/30/2023	
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Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3K2802 - EPA 3550B										
Blank (B3K2802-BLK1)										
					Prepared: 11/28/2023 Analyzed: 11/30/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	28		"	24.9		111	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2802 - EPA 3550B

LCS (B3K2802-BS1)

Prepared: 11/28/2023 Analyzed: 11/30/2023

Diesel (C10-C28)	1030	50.0	mg/kg	1000		103	70-130			
Residual Range Organics (C28-C40)	904	200	"	1000		90.4	70-130			
Surrogate: o-Terphenyl	55		"	49.8		112	50-150			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2802 - EPA 3550B

Matrix Spike (B3K2802-MS1)	Source: Y311604-01			Prepared: 11/28/2023 Analyzed: 11/30/2023						
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130			
Residual Range Organics (C28-C40)	883	200	"	1000	ND	88.3	70-130			
Surrogate: o-Terphenyl	52		"	49.8		104	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2802 - EPA 3550B

Matrix Spike Dup (B3K2802-MSD1)	Source: Y311604-01		Prepared: 11/28/2023 Analyzed: 11/30/2023							
Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	70-130	2.94	35	
Residual Range Organics (C28-C40)	920	200	"	1000	ND	92.0	70-130	4.02	35	
Surrogate: o-Terphenyl	54		"	49.8		108	50-150			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2825 - EPA 5030 (soil)

Blank (B3K2825-BLK1)

Prepared: 11/28/2023 Analyzed: 11/28/2023

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.5	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2825 - EPA 5030 (soil)

LCS (B3K2825-BS1)

Prepared: 11/28/2023 Analyzed: 11/28/2023

1,2,4-Trimethylbenzene	0.0886	0.00200	mg/kg	0.100		88.6	70-130			
1,3,5-Trimethylbenzene	0.0895	0.00200	"	0.100		89.5	70-130			
Benzene	0.0866	0.00200	"	0.100		86.6	70-130			
Ethylbenzene	0.0847	0.00200	"	0.100		84.7	70-130			
Naphthalene	0.103	0.00380	"	0.100		103	70-130			
Toluene	0.0820	0.00200	"	0.100		82.0	70-130			
o-Xylene	0.0894	0.00200	"	0.100		89.4	70-130			
m,p-Xylene	0.170	0.00400	"	0.200		84.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.1	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2825 - EPA 5030 (soil)

Matrix Spike (B3K2825-MS1)	Source: Y311604-01			Prepared: 11/28/2023 Analyzed: 11/28/2023						
1,2,4-Trimethylbenzene	0.0915	0.00200	mg/kg	0.100	ND	91.5	70-130			
1,3,5-Trimethylbenzene	0.0936	0.00200	"	0.100	ND	93.6	70-130			
Benzene	0.0841	0.00200	"	0.100	ND	84.1	70-130			
Ethylbenzene	0.0877	0.00200	"	0.100	ND	87.7	70-130			
Naphthalene	0.0878	0.00380	"	0.100	0.00142	86.4	70-130			
Toluene	0.0827	0.00200	"	0.100	ND	82.7	70-130			
o-Xylene	0.0925	0.00200	"	0.100	ND	92.5	70-130			
m,p-Xylene	0.175	0.00400	"	0.200	ND	87.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		82.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.4	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2825 - EPA 5030 (soil)

Matrix Spike Dup (B3K2825-MSD1)	Source: Y311604-01			Prepared: 11/28/2023 Analyzed: 11/28/2023						
1,2,4-Trimethylbenzene	0.0866	0.00200	mg/kg	0.100	ND	86.6	70-130	5.44	20	
1,3,5-Trimethylbenzene	0.0875	0.00200	"	0.100	ND	87.5	70-130	6.69	20	
Benzene	0.0825	0.00200	"	0.100	ND	82.5	70-130	1.87	20	
Ethylbenzene	0.0804	0.00200	"	0.100	ND	80.4	70-130	8.64	20	
Naphthalene	0.0939	0.00380	"	0.100	0.00142	92.4	70-130	6.65	20	
Toluene	0.0795	0.00200	"	0.100	ND	79.5	70-130	3.92	20	
o-Xylene	0.0872	0.00200	"	0.100	ND	87.2	70-130	5.92	20	
m,p-Xylene	0.162	0.00400	"	0.200	ND	80.9	70-130	7.73	20	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.0	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2821 - EPA 3050B

Blank (B3K2821-BLK1)

Prepared: 11/28/2023 Analyzed: 12/06/2023

Arsenic	ND	0.0100	mg/kg							
Barium	ND	1.00	"							
Cadmium	ND	0.0100	"							
Copper	ND	1.00	"							
Lead	ND	1.00	"							
Nickel	ND	0.100	"							
Selenium	ND	0.0100	"							
Silver	ND	0.0100	"							
Zinc	ND	1.00	"							

LCS (B3K2821-BS1)

Prepared: 11/28/2023 Analyzed: 12/12/2023

Arsenic	4.69	0.0100	mg/kg	5.00		93.7	80-120			
Barium	467	1.00	"	500		93.5	80-120			
Cadmium	5.11	0.0100	"	5.00		102	80-120			
Copper	50.3	1.00	"	50.0		101	80-120			
Lead	4.90	1.00	"	5.00		98.1	80-120			
Nickel	4.91	0.100	"	5.00		98.2	80-120			
Selenium	4.54	0.0100	"	5.00		90.7	80-120			
Silver	5.02	0.0100	"	5.00		100	80-120			
Zinc	46.2	1.00	"	50.0		92.4	80-120			

Matrix Spike (B3K2821-MS1)

Source: Y311581-01

Prepared: 11/28/2023 Analyzed: 12/12/2023

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2821 - EPA 3050B

Matrix Spike (B3K2821-MS1)		Source: Y311581-01			Prepared: 11/28/2023 Analyzed: 12/12/2023					
Arsenic	10.6	0.0873	mg/kg	4.36	6.41	96.4	75-125			
Barium	536	8.73	"	436	129	93.3	75-125			
Cadmium	5.08	0.0873	"	4.36	0.204	112	75-125			
Copper	54.7	8.73	"	43.6	11.4	99.3	75-125			
Lead	16.7	8.73	"	4.36	10.9	132	75-125			QM-07
Nickel	19.7	0.873	"	4.36	14.8	112	75-125			
Selenium	4.29	0.0873	"	4.36	0.351	90.4	75-125			
Silver	4.72	0.0873	"	4.36	0.0412	107	75-125			
Zinc	97.9	8.73	"	43.6	53.4	102	75-125			

Matrix Spike Dup (B3K2821-MSD1)		Source: Y311581-01			Prepared: 11/28/2023 Analyzed: 12/12/2023					
Arsenic	11.6	0.0909	mg/kg	4.55	6.41	114	75-125	8.83	20	
Barium	610	9.09	"	455	129	106	75-125	12.8	20	
Cadmium	5.56	0.0909	"	4.55	0.204	118	75-125	9.10	20	
Copper	61.1	9.09	"	45.5	11.4	109	75-125	11.0	20	
Lead	17.8	9.09	"	4.55	10.9	150	75-125	6.35	20	QM-07
Nickel	20.9	0.909	"	4.55	14.8	134	75-125	6.01	20	QM-07
Selenium	4.89	0.0909	"	4.55	0.351	99.9	75-125	13.0	20	
Silver	5.20	0.0909	"	4.55	0.0412	113	75-125	9.56	20	
Zinc	105	9.09	"	45.5	53.4	114	75-125	7.17	20	

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 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2823 - EPA 3580

Blank (B3K2823-BLK1)

Prepared: 11/28/2023 Analyzed: 12/05/2023

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	200		ug/kg	200		101	60-130			
Surrogate: Anthracene-d10	170		"	200		85.4	60-130			
Surrogate: Pyrene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		103	60-130			

LCS (B3K2823-BS1)

Prepared: 11/28/2023 Analyzed: 12/05/2023

1-Methylnaphthalene	0.208	0.002	mg/kg	0.200		104	70-130			
2-Methylnaphthalene	0.206	0.002	"	0.200		103	70-130			
Acenaphthene	0.199	0.020	"	0.200		99.7	70-130			
Anthracene	0.171	0.020	"	0.200		85.4	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2823 - EPA 3580

LCS (B3K2823-BS1)

Prepared: 11/28/2023 Analyzed: 12/05/2023

Benzo (a) anthracene	0.171	0.005	mg/kg	0.200		85.6	70-130			
Benzo (a) pyrene	0.176	0.020	"	0.200		87.8	70-130			
Benzo (b) fluoranthene	0.211	0.020	"	0.200		106	70-130			
Benzo (g,h,i) perylene	0.227	0.020	"	0.200		114	70-130			
Benzo (k) fluoranthene	0.220	0.020	"	0.200		110	70-130			
Chrysene	0.182	0.020	"	0.200		91.2	70-130			
Dibenz (a,h) anthracene	0.226	0.020	"	0.200		113	70-130			
Fluoranthene	0.185	0.020	"	0.200		92.3	70-130			
Fluorene	0.204	0.020	"	0.200		102	70-130			
Indeno (1,2,3-cd) pyrene	0.212	0.020	"	0.200		106	70-130			
Naphthalene	0.211	0.002	"	0.200		105	70-130			
Phenanthrene	0.189	0.020	"	0.200		94.3	70-130			
Pyrene	0.203	0.020	"	0.200		101	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	170		"	200		84.0	60-130			
Surrogate: Pyrene-d10	200		"	200		98.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

Matrix Spike (B3K2823-MS1)

Source: Y311517-01

Prepared: 11/28/2023 Analyzed: 12/05/2023

1-Methylnaphthalene	0.221	0.002	mg/kg	0.200	ND	110	70-130			
2-Methylnaphthalene	0.213	0.002	"	0.200	ND	106	70-130			
Acenaphthene	0.207	0.020	"	0.200	ND	103	70-130			
Anthracene	0.186	0.020	"	0.200	ND	93.2	70-130			
Benzo (a) anthracene	0.167	0.005	"	0.200	ND	83.3	70-130			
Benzo (a) pyrene	0.202	0.020	"	0.200	ND	101	70-130			
Benzo (b) fluoranthene	0.234	0.020	"	0.200	ND	117	70-130			
Benzo (g,h,i) perylene	0.231	0.020	"	0.200	ND	116	70-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2823 - EPA 3580

Matrix Spike (B3K2823-MS1)		Source: Y311517-01			Prepared: 11/28/2023 Analyzed: 12/05/2023					
Benzo (k) fluoranthene	0.217	0.020	mg/kg	0.200	ND	109	70-130			
Chrysene	0.193	0.020	"	0.200	ND	96.7	70-130			
Dibenz (a,h) anthracene	0.222	0.020	"	0.200	ND	111	70-130			
Fluoranthene	0.194	0.020	"	0.200	ND	97.1	70-130			
Fluorene	0.210	0.020	"	0.200	ND	105	70-130			
Indeno (1,2,3-cd) pyrene	0.208	0.020	"	0.200	ND	104	70-130			
Naphthalene	0.217	0.002	"	0.200	ND	108	70-130			
Phenanthrene	0.195	0.020	"	0.200	ND	97.7	70-130			
Pyrene	0.206	0.020	"	0.200	ND	103	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	170		"	200		83.7	60-130			
Surrogate: Pyrene-d10	190		"	200		95.0	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

Matrix Spike Dup (B3K2823-MSD1)		Source: Y311517-01			Prepared: 11/28/2023 Analyzed: 12/05/2023					
1-Methylnaphthalene	0.216	0.002	mg/kg	0.200	ND	108	70-130	2.43	20	
2-Methylnaphthalene	0.213	0.002	"	0.200	ND	107	70-130	0.236	20	
Acenaphthene	0.204	0.020	"	0.200	ND	102	70-130	1.08	20	
Anthracene	0.168	0.020	"	0.200	ND	83.8	70-130	10.6	20	
Benzo (a) anthracene	0.166	0.005	"	0.200	ND	82.9	70-130	0.543	20	
Benzo (a) pyrene	0.201	0.020	"	0.200	ND	101	70-130	0.508	20	
Benzo (b) fluoranthene	0.227	0.020	"	0.200	ND	114	70-130	3.01	20	
Benzo (g,h,i) perylene	0.238	0.020	"	0.200	ND	119	70-130	3.00	20	
Benzo (k) fluoranthene	0.200	0.020	"	0.200	ND	99.9	70-130	8.44	20	
Chrysene	0.199	0.020	"	0.200	ND	99.3	70-130	2.74	20	
Dibenz (a,h) anthracene	0.232	0.020	"	0.200	ND	116	70-130	4.61	20	
Fluoranthene	0.197	0.020	"	0.200	ND	98.6	70-130	1.59	20	

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3K2823 - EPA 3580

Matrix Spike Dup (B3K2823-MSD1)	Source: Y311517-01			Prepared: 11/28/2023 Analyzed: 12/05/2023						
Fluorene	0.207	0.020	mg/kg	0.200	ND	103	70-130	1.40	20	
Indeno (1,2,3-cd) pyrene	0.218	0.020	"	0.200	ND	109	70-130	4.60	20	
Naphthalene	0.217	0.002	"	0.200	ND	108	70-130	0.00462	20	
Phenanthrene	0.192	0.020	"	0.200	ND	95.9	70-130	1.91	20	
Pyrene	0.199	0.020	"	0.200	ND	99.7	70-130	3.51	20	
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	170		"	200		85.1	60-130			
Surrogate: Pyrene-d10	190		"	200		94.8	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

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Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3L0106 - DTPA Sorbitol Preparation

Blank (B3L0106-BLK1)

Prepared: 12/01/2023 Analyzed: 12/05/2023

Boron ND 0.100 mg/L

Duplicate (B3L0106-DUP1)

Source: Y311612-01

Prepared: 12/01/2023 Analyzed: 12/05/2023

Boron 0.879 0.100 mg/L 0.772 13.0 50

Batch B3L0109 - Saturated Paste Metals

Blank (B3L0109-BLK1)

Prepared: 12/01/2023 Analyzed: 12/03/2023

Calcium PPM ND 10.0 mg/L

SAR ND 0.0100 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

Duplicate (B3L0109-DUP1)

Source: Y311611-08

Prepared: 12/01/2023 Analyzed: 12/03/2023

SAR ND 0.0100 SAR 0.386 200

Calcium PPM 5.90 10.0 mg/L 5.15 13.6 50

Magnesium PPM 1.60 10.0 " 1.36 16.2 50

Sodium PPM 3.94 10.0 " 3.81 3.35 50

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Saturated Paste - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3L0112 - Saturated Paste pH/EC

Blank (B3L0112-BLK1)

Prepared: 12/01/2023 Analyzed: 12/02/2023

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B3L0112-DUP1)

Source: Y311611-08

Prepared: 12/01/2023 Analyzed: 12/02/2023

pH	7.15		pH Units		7.14			0.140	25	
Specific Conductance (EC)	0.0994	0.00500	mmhos/cm		0.0905			9.37	25	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Total Metals by 7196A - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L719800 -										
DUP (L 96787-DUP)		Source: 96787			Prepared: Analyzed: 11/30/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 96787-MS)		Source: 96787			Prepared: Analyzed: 11/30/2023					
Chromium, Hexavalent	33.1	2.5	mg/Kg	38.8	<1.22	85	75-125			
LCS (LCS)		Prepared: Analyzed: 11/30/2023								
Chromium, Hexavalent	6.98	0.5	mg/Kg	8		87	75-125			
LRB (LRB)		Prepared: Analyzed: 11/30/2023								
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Dan Coloccia
 Project Number: [none]
 Project: Murfin - Lowe 8-12

Total Metals by 7196A - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L719799 -										
DUP (L 96714-DUP)		Source: 96714			Prepared: Analyzed: 11/30/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 96714-MS)		Source: 96714			Prepared: Analyzed: 11/30/2023					
Chromium, Hexavalent	34.6	2.5	mg/Kg	39.5	<1.22	88	75-125			
LCS (LCS)		Prepared: Analyzed: 11/30/2023								
Chromium, Hexavalent	7.4	0.5	mg/Kg	8		93	75-125			
LRB (LRB)		Prepared: Analyzed: 11/30/2023								
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Dan Coloccia
Project Number: [none]
Project: Murfin - Lowe 8-12

Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jordan A. Bynon, Project Manager

ATTACHMENT B
FIELD NOTES AND PHOTOGRAPHIC LOG

Wellhead Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure
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Site Name & COGCC Facility Number: Lowe 8-12 Date: 11/27/2023 Remediation Project #: 30606

Associated Wells: 05-017-06464 Age of Site: _____ Number of Photos Attached: _____

Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 38.685436, -102.418185 Estimated Facility Size (acres): _____

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)
good condition

USCS Soil Type: ML Estimated Depth to Groundwater: 220'

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Wellhead(s)

Well API	05-017-06464					
Age						
Condition of surface around wellhead						
PID Readings						
Condition of subsurface (staining, noisiness)						
PID Readings	<u>2.6</u>	<u>3.1</u>	<u>2.6</u>	<u>2.9</u>	<u>2.1</u>	<u>0.6</u>
Sample taken? Location/Sample ID#	<u>WH-B01e8'</u>	<u>WH-N01e7'</u>	<u>WH-S01e7'</u>	<u>WH-E01e7'</u>	<u>WH-W01e7'</u>	<u>WHS-N01e3'</u>
Photo Number(s)						

Other observations regarding wellheads:
See attached table for remaining field screenings

Summary

Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards

Total number of samples field screened: 10 Total number of samples collected: 10

Highest PID Reading: 3.6 Total number of samples submitted to lab for analysis: 2

If more than 10 cubic yards of impacted soil were observed: _____

Vertical extent: _____ Estimated spill volume: _____

Lateral extent: _____ Volume of soil removed: _____

Is additional investigation required? _____

Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils

Measured depth to groundwater: _____ Was remedial groundwater removal conducted? Yes No

Date Groundwater was encountered: _____ Commencement date of removal: _____

Sheen on groundwater? Yes No Volume of groundwater removed prior to sampling: _____

Free product observed? Yes No Volume of groundwater removed post sampling: _____

Total number of samples collected: _____ Total Volume of groundwater removed: _____

Total number of samples submitted to lab for analysis: _____

Lowe 8-12
Photographic Log
Remediation #30606

Wellhead Decommissioning



Wellhead



Wellhead sample locations looking west.



Wellhead sample locations looking east.

Wellhead/ Flowline



Wellhead surface location facing east.



Flowline at wellhead sample location facing southeast.

Wellhead



Wellhead background location.



Wellhead background location.

**ATTACHMENT C
STATE NOTIFICATION**

From: Daniel Coloccia <dcoloccia@eagle-enviro.com>

Sent: Monday, December 18, 2023 2:23 PM

To: Chris Sanchez - DNR <chris.sanchez@state.co.us>; commdist3@co.cheyenne.co.us
<commdist3@co.cheyenne.co.us>

Cc: Cristina Goodrich <cgoodrich@murfininc.com>

Subject: Lowe 8-12 Wellhead Historic Release - 24 Hour Notification

All,

Per the Energy & Carbon Management Commission (ECMC) Rule 912 I am notifying you, on behalf of Murfin Drilling Company Inc. of a historic release (unknown quantity) that was discovered at the Lowe 8-12 wellhead (API #05-017-06464) yesterday.

- Historical suspected release location: 38.685410, -102.418276
- Total petroleum hydrocarbon (TPH), inorganic, PAH, and metal impacts exceeding ECMC Table 915-1.
- A form 19 initial/supplemental will be submitted to the ECMC.
- The release was discovered during closure sampling activities.
- At this time there is not a threat to any nearby Waters of the State, Public Water Systems, residences or occupied structures, livestock, wildlife, air quality, or publicly-maintained roads.
- The land owner will be notified of the release by Murfin Drilling Company Inc. within 24 hours

Please let me know if you have any questions or concerns.

Thanks,

Daniel Coloccia

Senior Project Scientist

dcoloccia@eagle-enviro.com



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