

**TABLE 1**  
**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - SPIKE STATE CC30-13**

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude <sup>1</sup>	Longitude	PDOP
FL01-B@3'	11/16/22	0.0	No Staining	No Odor	Lab	40.28078452	-104.4837702	0.9
FL01-F@3'	11/16/22	0.4	No Staining	No Odor	Lab	40.28009549	-104.4830622	0.9
FL01-H@3'	11/16/22	0.4	No Staining	No Odor	Lab	40.28039998	-104.4836817	0.9
FL01-I@3'	11/16/22	0.7	No Staining	No Odor	Lab	40.28057568	-104.4838425	0.9
FL01-J@3'	11/16/22	0.7	No Staining	No Odor	Lab	40.28078088	-104.4838917	1.0

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - SPIKE STATE CC30-13

Soil Sample ID	Date	<sup>1</sup> Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>2</sup>		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-B@3'	11/16/22	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00201	<0.200	<25.0	<100	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.000723	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
FL01-C@3'	11/15/22	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00201	<0.200	<25.0	<100	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.00144	<0.00067	<0.00067	0.0012	<0.00201	<0.00201
FL01-F@3'	11/16/22	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00201	<0.200	<25.0	<100	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
FL01-H@3'	11/16/22	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00201	<0.200	<25.0	<100	0.00804	0.0204	0.0362	0.0252	0.026	0.0134	0.0383	0.00363	0.0942	0.00974	0.0112	0.0761	<0.00201	<0.00201
FL01-I@3'	11/16/22	<0.00200	<0.00200	<0.00200	0.00212	<0.00200	<0.00200	0.134	<0.200	<25.0	<100	0.261	0.356	0.467	0.315	0.289	0.148	0.451	0.0373	1.39	0.315	0.126	1.03	0.0274	0.0418
FL01-J@3'	11/16/22	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00201	<0.200	<25.0	<100	0.000804	0.00128	0.00203	0.00129	0.00146	0.000687	0.00243	<0.00067	0.00482	0.000945	0.00081	0.00375	<0.00201	<0.00201

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
FL01-B@3'	11/16/22	8.12	0.0282	0.140	<0.0987
FL01-C@3'	11/15/22	7.59	0.878	0.0979	<0.0992
FL01-F@3'	11/16/22	8.31	0.214	0.219	<0.100
FL01-H@3'	11/16/22	7.85	0.229	0.0970	<0.101
FL01-I@3'	11/16/22	8.10	0.539	0.824	<0.100
FL01-J@3'	11/16/22	8.09	0.259	0.537	<0.0987

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

Highlighted results are equal to or exceed the COGCC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzanthracene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

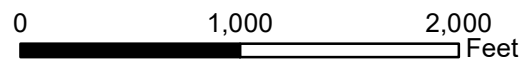
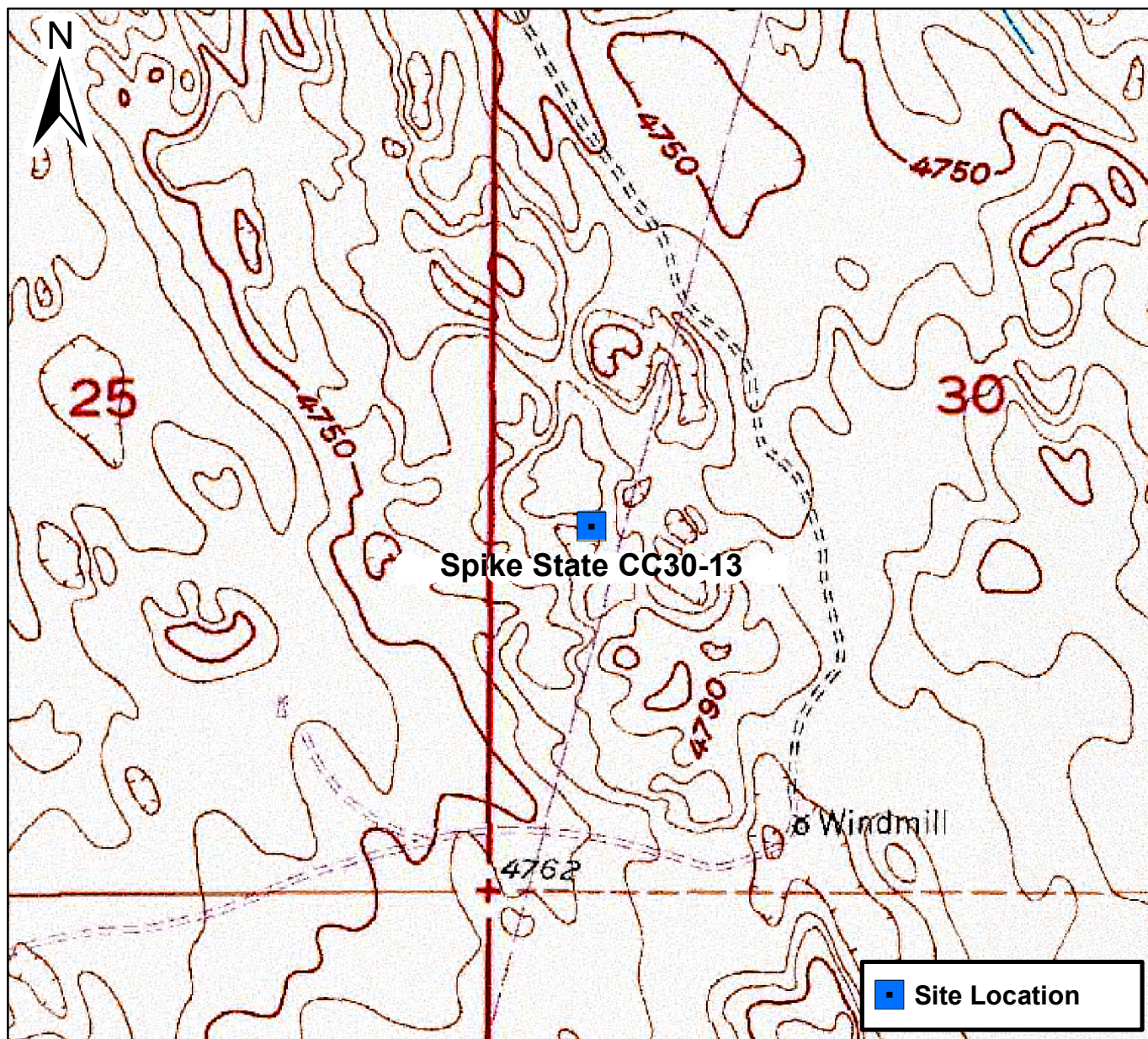
Benzo(a) = Benzopyrene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

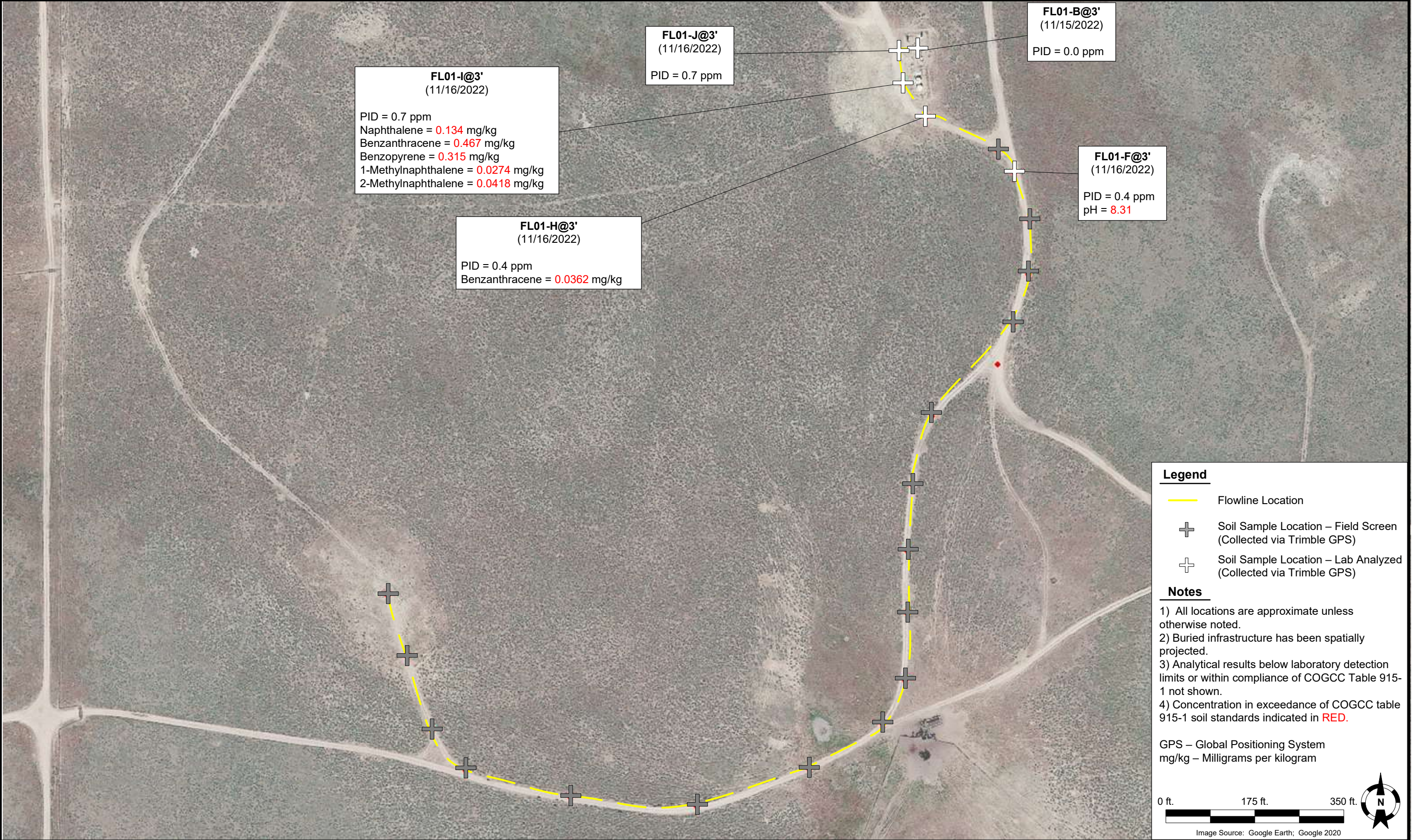
2-M = 2-methylnaphthalene



## Figure 1

Site Location Map  
Spike State CC30-13  
NESW S30 T4N R63W  
Weld County, Colorado





## Photographic Log



**Equipment ID:** FL01-A@1.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**

**Contents:** Oil/Gas/Water

**Notes/Conditions:**



**Equipment ID:** FL01-B@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**

**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log


**Equipment ID:** FL01-C@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flow line intrenched in the same hole, CC30-13 on the left, CC30-14 on the right

**Equipment ID:** FL01-D@2'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flow line intrenched in the same hole, CC30-13 on the left, CC30-14 on the right

## Photographic Log


**Equipment ID:** FL01-E@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flow line intrenched in the same hole, CC30-13 on the left, CC30-14 on the right

**Equipment ID:** FL01-F@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flow line intrenched in the same hole, CC30-13 on the left, CC30-14 on the right

## Photographic Log


**Equipment ID:** FL01-G@2'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flow line intrenched in the same hole, CC30-13 on the left, CC30-14 on the right

**Equipment ID:** FL01-H@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:** Flowline abandoned in place from FLO1-H to FLO1-I

## Photographic Log

					
<b>Equipment ID:</b> FL01-I@3'		<b>Equipment Type:</b> Flowline			
<b>Material:</b> Steel		<b>Volume:</b>		<b>Contents:</b> Oil/Gas/Water	
<b>Notes/Conditions:</b> Lab sample because entrenched with hammer union Flowline abandoned in place from FLO1-H to FLO1-I					

					
<b>Equipment ID:</b> FL01-J@3'		<b>Equipment Type:</b> Flowline			
<b>Material:</b> Steel		<b>Volume:</b>		<b>Contents:</b> Oil/Gas/Water	
<b>Notes/Conditions:</b> Lab sample because entrenched with T-junction. Top left line is cc30-13, bottom line is unknown and right and bottom most line is cc30-14.					

## Photographic Log


**Equipment ID:** FL01-K@2.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

**Equipment ID:** FL01-L@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log


**Equipment ID:** FL01-M@2.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

**Equipment ID:** FL01-N@2.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log


**Equipment ID:** FLO1-O@2.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

**Equipment ID:** FLO1-P@2.5'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log


**Equipment ID:** FL01-Q@2'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

**Equipment ID:** FL01-R@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log


**Equipment ID:** FL01-S@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

**Equipment ID:** FL01-T@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**
**Contents:** Oil/Gas/Water

**Notes/Conditions:**

## Photographic Log



**Equipment ID:** FL01-U@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**

**Contents:** Oil/Gas/Water

**Notes/Conditions:**



**Equipment ID:** FL01-V@3'

**Equipment Type:** Flowline

**Material:** Steel

**Volume:**

**Contents:** Oil/Gas/Water

**Notes/Conditions:** Entrenched with unknown line that was abandoned in place



November 29, 2022

Tasman Geosciences

Jake Whritenour

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - Noble - Spike State CC30-13**

**Project Number - UWRWE-A2124-ABN**

Attached are your analytical results for Noble - Spike State CC30-13 received by Origins Laboratory, Inc. November 16, 2022. This project is associated with Origins project number Y211428-01.

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



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FLO1-B@3'	Y211428-01	Soil	November 16, 2022 11:46	11/16/2022 14:44
FLO1-F@3'	Y211428-02	Soil	November 16, 2022 7:55	11/16/2022 14:44
FLO1-H@3'	Y211428-03	Soil	November 16, 2022 8:41	11/16/2022 14:44
FLO1-I@3'	Y211428-04	Soil	November 16, 2022 10:18	11/16/2022 14:44
FLO1-J@3'	Y211428-05	Soil	November 16, 2022 10:36	11/16/2022 14:44

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.*

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative						Matrix			Analysis					Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summter #	Other	VX-q15	TPH-q15	PAH-q15	PH, EC, SAR	Boron-HCB		
F01-BQ3'	11-16-22	11:46	2	X					X				X	X	X	X	PH, EC, SAR by Saturated Paste	
F01-FQ3'		7:55																
F01-HQ3'		8:41																
F01-IQ3'		10:18																
F01-SQ3'		10:36																
Relinquished By: <i>Dennis Sforz</i>	Date: 11-16-22	Time: 1444	Received By: EHS	Date: 11/16/22	Time: 1444	Turnaround Time: 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"/>												

Page 3 of 38

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

Origins Laboratory

## Sample Receipt Checklist

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

Origins Work Order: 4211428

Client: Tasman

Client Project ID: Spike State CC30-13

Checklist Completed by: EHS/DE

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/16/22

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid

Water ☐ Other: ☐

Cooler Number/Temperature: 1 15.2 °C 1 °C 1 °C (Describe) °C

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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 analysis 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<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: JB (Project Manager)

Date/Time Reviewed: 11-17-22

Origins Laboratory, Inc.

*J. Bynon*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**FLO1-B@3'**  
**11/16/2022 11:46:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y211428-01 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.0987	mg/L	1	B2K1706	KAP	11/17/2022	11/18/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1701	ADM	11/17/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	104 %	50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1734	JSM	11/17/2022	11/21/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## FLO1-B@3'

11/16/2022 11:46:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y211428-01 (Soil)

Origins Laboratory, Inc.

### Metals by Saturated Paste by EPA 6010

Calcium	0.913	0.499	meq/L	10	[CALC]	KAP	11/17/2022	11/18/2022
Magnesium	ND	0.823	"	"	"	KAP	"	"
Sodium	ND	0.435	"	"	"	KAP	"	"

### pH in Soil by 9045D

pH	8.12		pH Units	1	B2K1720	HJD	11/17/2022	11/18/2022
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### SAR by 20B Saturated Paste

SAR	0.0282		SAR	1	B2K1710	KAP	11/17/2022	11/18/2022
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.140	0.00500	mmhos/cm	1	B2K1724	HJD	11/17/2022	11/18/2022
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## Waypoint Analytical, LLC.

### PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L649795		11/21/2022	11/22/2022
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"
Acenaphthene	ND	0.00067	"	"	"		"	"
Anthracene	ND	0.00067	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## FLO1-B@3'

11/16/2022 11:46:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y211428-01 (Soil)

## Waypoint Analytical, LLC.

### PAH by 8270D SIM

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L649795		11/21/2022	11/22/2022	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	0.000723	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	39.9 %	33-115		"	"	"
Surrogate: 4-Terphenyl-d14	52.5 %	33-122		"	"	"
Surrogate: Nitrobenzene-d5	45.4 %	29-110		"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## FLO1-F@3'

11/16/2022 7:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y211428-02 (Soil) Origins Laboratory, Inc.

### Boron (DTPA Sorbitol)

Boron	ND	0.100	mg/L	1	B2K1706	KAP	11/17/2022	11/18/2022	
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### DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1701	ADM	11/17/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	111 %	50-150			"	"	"	
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### GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1734	JSM	11/17/2022	11/21/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130			"	"	"
Surrogate: Toluene-d8	101 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"

### Metals by Saturated Paste by EPA 6010

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-F@3'

11/16/2022 7:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-02 (Soil)

Origins Laboratory, Inc.

## Metals by Saturated Paste by EPA 6010

Calcium	1.32	0.499	meq/L	10	[CALC]	KAP	11/17/2022	11/18/2022
Magnesium	ND	0.823	"	"	"	KAP	"	"
Sodium	ND	0.435	"	"	"	KAP	"	"

## pH in Soil by 9045D

pH	8.31		pH Units	1	B2K1720	HJD	11/17/2022	11/18/2022
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## SAR by 20B Saturated Paste

SAR	0.214		SAR	1	B2K1710	KAP	11/17/2022	11/18/2022
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## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.219	0.00500	mmhos/cm	1	B2K1724	HJD	11/17/2022	11/18/2022
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L649795		11/21/2022	11/22/2022
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"
Acenaphthene	ND	0.00067	"	"	"		"	"
Anthracene	ND	0.00067	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## FLO1-F@3'

11/16/2022 7:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y211428-02 (Soil)

## Waypoint Analytical, LLC.

### PAH by 8270D SIM

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L649795		11/21/2022	11/22/2022	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	46.8 %	33-115		"	"	"
Surrogate: 4-Terphenyl-d14	52.9 %	33-122		"	"	"
Surrogate: Nitrobenzene-d5	46.2 %	29-110		"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-H@3'

11/16/2022 8:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-03 (Soil)  
Origins Laboratory, Inc.

## Boron (DTPA Sorbitol)

Boron	ND	0.101	mg/L	1	B2K1706	KAP	11/17/2022	11/18/2022	
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## DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1701	ADM	11/17/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	108 %	50-150			"	"	"		
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## GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1734	JSM	11/17/2022	11/21/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	119 %	70-130			"	"	"		
Surrogate: Toluene-d8	101 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	94.7 %	70-130			"	"	"		

## Metals by Saturated Paste by EPA 6010

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-H@3'

11/16/2022 8:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-03 (Soil)

Origins Laboratory, Inc.

## Metals by Saturated Paste by EPA 6010

Calcium	ND	0.499	meq/L	10	[CALC]	KAP	11/17/2022	11/18/2022
Magnesium	ND	0.823	"	"	"	KAP	"	"
Sodium	ND	0.435	"	"	"	KAP	"	"

## pH in Soil by 9045D

pH	7.85		pH Units	1	B2K1720	HJD	11/17/2022	11/18/2022
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## SAR by 20B Saturated Paste

SAR	0.229		SAR	1	B2K1710	KAP	11/17/2022	11/18/2022
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## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.0970	0.00500	mmhos/cm	1	B2K1724	HJD	11/17/2022	11/18/2022
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L649795		11/21/2022	11/22/2022
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"
Acenaphthene	0.00804	0.00067	"	"	"		"	"
Anthracene	0.0204	0.00067	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-H@3'

11/16/2022 8:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-03 (Soil)

Waypoint Analytical, LLC.

## PAH by 8270D SIM

Benzo(a)anthracene	0.0362	0.00067	mg/Kg	1	L649795		11/21/2022	11/22/2022	
Benzo(a)pyrene	0.0252	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	0.026	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	0.0134	0.00067	"	"	"		"	"	
Chrysene	0.0383	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	0.00363	0.00067	"	"	"		"	"	
Fluoranthene	0.0942	0.00067	"	"	"		"	"	
Fluorene	0.00974	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	0.0112	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	0.0761	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl  
Surrogate: 4-Terphenyl-d14  
Surrogate: Nitrobenzene-d5

48.2 % 33-115  
54.5 % 33-122  
47.6 % 29-110

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-I@3'  
11/16/2022 10:18:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-04 (Soil)  
Origins Laboratory, Inc.

## Boron (DTPA Sorbitol)

Boron	ND	0.100	mg/L	1	B2K1706	KAP	11/17/2022	11/18/2022	
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## DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1702	ADM	11/17/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	100 %	50-150			"	"	"	
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## GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1734	JSM	11/17/2022	11/21/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	0.00212	0.00200	"	"	"	JSM	"	"	
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.2 %	70-130			"	"	"	

## Metals by Saturated Paste by EPA 6010

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-I@3'

11/16/2022 10:18:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-04 (Soil)

Origins Laboratory, Inc.

## Metals by Saturated Paste by EPA 6010

Calcium	4.93	0.499	meq/L	10	[CALC]	KAP	11/17/2022	11/18/2022
Magnesium	1.70	0.823	"	"	"	KAP	"	"
Sodium	0.981	0.435	"	"	"	KAP	"	"

## pH in Soil by 9045D

pH	8.10		pH Units	1	B2K1720	HJD	11/17/2022	11/18/2022
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## SAR by 20B Saturated Paste

SAR	0.539		SAR	1	B2K1710	KAP	11/17/2022	11/18/2022
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## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.824	0.00500	mmhos/cm	1	B2K1724	HJD	11/17/2022	11/18/2022
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	0.0274	0.0101	mg/Kg	5	L649795		11/21/2022	11/22/2022
2-Methylnaphthalene	0.0418	0.0101	"	"	"		"	"
Acenaphthene	0.261	0.00335	"	"	"		"	"
Anthracene	0.356	0.00335	"	"	"		"	"
Benzo(a)anthracene	0.467	0.00335	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-I@3'

11/16/2022 10:18:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-04 (Soil)

Waypoint Analytical, LLC.

## PAH by 8270D SIM

Benzo(a)pyrene	0.315	0.00335	mg/Kg	5	L649795		11/21/2022	11/22/2022
Benzo(b)fluoranthene	0.289	0.00335	"	"	"		"	"
Benzo(k)fluoranthene	0.148	0.00335	"	"	"		"	"
Chrysene	0.451	0.00335	"	"	"		"	"
Dibenz(a,h)anthracene	0.0373	0.00335	"	"	"		"	"
Fluoranthene	1.39	0.00335	"	"	"		"	"
Fluorene	0.315	0.00335	"	"	"		"	"
Indeno(1,2,3-cd)pyrene	0.126	0.00335	"	"	"		"	"
Naphthalene	0.134	0.0101	"	"	"		"	"
Pyrene	1.03	0.00335	"	"	"		"	"

Surrogate: 2-Fluorobiphenyl	52.1 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	56.1 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	48.8 %	29-110	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**FLO1-J@3'**  
**11/16/2022 10:36:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y211428-05 (Soil)**  
**Origins Laboratory, Inc.**

**Boron (DTPA Sorbitol)**

Boron	ND	0.0987	mg/L	1	B2K1716	KAP	11/17/2022	11/21/2022	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1702	ADM	11/17/2022	11/18/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	110 %	50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1734	JSM	11/17/2022	11/21/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.6 %	70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-J@3'

11/16/2022 10:36:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-05 (Soil)

Origins Laboratory, Inc.

## Metals by Saturated Paste by EPA 6010

Calcium	3.32	0.499	meq/L	10	[CALC]	KAP	11/17/2022	11/18/2022
Magnesium	0.828	0.823	"	"	"	KAP	"	"
Sodium	ND	0.435	"	"	"	KAP	"	"

## pH in Soil by 9045D

pH	8.09		pH Units	1	B2K1720	HJD	11/17/2022	11/18/2022
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## SAR by 20B Saturated Paste

SAR	0.259		SAR	1	B2K1710	KAP	11/17/2022	11/18/2022
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## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.537	0.00500	mmhos/cm	1	B2K1724	HJD	11/17/2022	11/18/2022
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Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L649795		11/21/2022	11/22/2022
2-Methylnaphthalene	ND	0.00201	"	"	"		"	"
Acenaphthene	0.000804	0.00067	"	"	"		"	"
Anthracene	0.00128	0.00067	"	"	"		"	"
Benzo(a)anthracene	0.00203	0.00067	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

FLO1-J@3'  
11/16/2022 10:36:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211428-05 (Soil)  
Waypoint Analytical, LLC.

## PAH by 8270D SIM

Benzo(a)pyrene	0.00129	0.00067	mg/Kg	1	L649795		11/21/2022	11/22/2022	
Benzo(b)fluoranthene	0.00146	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	0.000687	0.00067	"	"	"		"	"	
Chrysene	0.00243	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	0.00482	0.00067	"	"	"		"	"	
Fluorene	0.000945	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	0.00081	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00201	"	"	"		"	"	
Pyrene	0.00375	0.00067	"	"	"		"	"	

Surrogate: 2-Fluorobiphenyl	55 %	33-115		"	"	"
Surrogate: 4-Terphenyl-d14	61 %	33-122		"	"	"
Surrogate: Nitrobenzene-d5	53.5 %	29-110		"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1701 - EPA 3580										
Blank (B2K1701-BLK1)					Prepared: 11/17/2022 Analyzed: 11/19/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	26		"	24.9		103	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

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 B2K1701 - EPA 3580

LCS (B2K1701-BS1)

Prepared: 11/17/2022 Analyzed: 11/17/2022

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	70-130			
Residual Range Organics (C28-C40)	1080	200	"	1000		108	70-130			
Surrogate: o-Terphenyl	58		"	49.8		116	50-150			

Origins Laboratory, Inc.



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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

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 B2K1701 - EPA 3580

Matrix Spike (B2K1701-MS1)		Source: Y211403-01			Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	929	50.0	mg/kg	1000	ND	92.9	70-130			
Residual Range Organics (C28-C40)	994	200	"	1000	ND	99.4	70-130			
Surrogate: o-Terphenyl	61		"	49.8		123	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1701 - EPA 3580

Matrix Spike Dup (B2K1701-MSD1)		Source: Y211403-01			Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	842	50.0	mg/kg	1000	ND	84.2	70-130	9.81	35	
Residual Range Organics (C28-C40)	1050	200	"	1000	ND	105	70-130	5.11	35	
Surrogate: o-Terphenyl	50		"	49.8		99.7	50-150			

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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1702 - EPA 3580										
Blank (B2K1702-BLK1)					Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	28		"	24.9		113	50-150			

Origins Laboratory, Inc.



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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1702 - EPA 3580										
LCS (B2K1702-BS1)					Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	968	50.0	mg/kg	1000		96.8	70-130			
Residual Range Organics (C28-C40)	997	200	"	1000		99.7	70-130			
Surrogate: o-Terphenyl	52		"	49.8		105	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

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 B2K1702 - EPA 3580

Matrix Spike (B2K1702-MS1)		Source: Y211437-01			Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	932	50.0	mg/kg	1000	ND	93.2	70-130			
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	70-130			
Surrogate: o-Terphenyl	60		"	49.8		121	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1702 - EPA 3580

Matrix Spike Dup (B2K1702-MSD1)		Source: Y211437-01			Prepared: 11/17/2022 Analyzed: 11/17/2022					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	70-130	9.23	35	
Residual Range Organics (C28-C40)	1080	200	"	1000	ND	108	70-130	6.50	35	
Surrogate: o-Terphenyl	55		"	49.8		111	50-150			

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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1734 - EPA 5030 (soil)										
Blank (B2K1734-BLK1)					Prepared: 11/17/2022 Analyzed: 11/21/2022					
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	0.12		"	0.125		98.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.7	70-130			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**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
<b>Batch B2K1734 - EPA 5030 (soil)</b>										
<b>LCS (B2K1734-BS1)</b>					Prepared: 11/17/2022 Analyzed: 11/21/2022					
1,2,4-Trimethylbenzene	0.102	0.00200	mg/kg	0.100		102	70-130			
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Benzene	0.0961	0.00200	"	0.100		96.1	70-130			
Ethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Naphthalene	0.115	0.00380	"	0.100		115	70-130			
Toluene	0.105	0.00200	"	0.100		105	70-130			
o-Xylene	0.105	0.00200	"	0.100		105	70-130			
m,p-Xylene	0.200	0.00400	"	0.200		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		109	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.7	70-130			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**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
<b>Batch B2K1734 - EPA 5030 (soil)</b>										
<b>Matrix Spike (B2K1734-MS1)</b>		<b>Source: Y211423-01</b>			Prepared: 11/17/2022 Analyzed: 11/21/2022					
1,2,4-Trimethylbenzene	0.0895	0.00200	mg/kg	0.100	ND	89.5	70-130			
1,3,5-Trimethylbenzene	0.0889	0.00200	"	0.100	ND	88.9	70-130			
Benzene	0.105	0.00200	"	0.100	ND	105	70-130			
Ethylbenzene	0.0960	0.00200	"	0.100	ND	96.0	70-130			
Naphthalene	0.0855	0.00380	"	0.100	0.000940	84.6	70-130			
Toluene	0.104	0.00200	"	0.100	ND	104	70-130			
o-Xylene	0.0977	0.00200	"	0.100	ND	97.7	70-130			
m,p-Xylene	0.186	0.00400	"	0.200	ND	93.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**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
<b>Batch B2K1734 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B2K1734-MSD1)</b>		<b>Source: Y211423-01</b>			Prepared: 11/17/2022 Analyzed: 11/21/2022					
1,2,4-Trimethylbenzene	0.0984	0.00200	mg/kg	0.100	ND	98.4	70-130	9.45	20	
1,3,5-Trimethylbenzene	0.0952	0.00200	"	0.100	ND	95.2	70-130	6.93	20	
Benzene	0.111	0.00200	"	0.100	ND	111	70-130	5.86	20	
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130	10.9	20	
Naphthalene	0.0989	0.00380	"	0.100	0.000940	98.0	70-130	14.6	20	
Toluene	0.108	0.00200	"	0.100	ND	108	70-130	4.13	20	
o-Xylene	0.106	0.00200	"	0.100	ND	106	70-130	8.62	20	
m,p-Xylene	0.207	0.00400	"	0.200	ND	103	70-130	10.4	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		112	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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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## 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 B2K1706 - DTPA Sorbitol Preparation

##### Blank (B2K1706-BLK1)

Prepared: 11/17/2022 Analyzed: 11/18/2022

Boron ND 0.100 mg/L

##### Duplicate (B2K1706-DUP1)

Source: Y211404-05

Prepared: 11/17/2022 Analyzed: 11/18/2022

Boron ND 1.01 mg/L ND 50

#### Batch B2K1710 - Saturated Paste Metals

##### Blank (B2K1710-BLK1)

Prepared: 11/17/2022 Analyzed: 11/18/2022

Calcium PPM ND 10.0 mg/L

SAR 0.00 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

##### Duplicate (B2K1710-DUP1)

Source: Y211410-02

Prepared: 11/17/2022 Analyzed: 11/18/2022

SAR 0.00 SAR 0.748 200 200

Calcium PPM 3.25 10.0 mg/L 3.04 6.87 50

Magnesium PPM 1.40 10.0 " 1.34 3.95 50

Sodium PPM 6.87 10.0 " 6.23 9.79 50

#### Batch B2K1716 - DTPA Sorbitol Preparation

##### Blank (B2K1716-BLK1)

Prepared: 11/17/2022 Analyzed: 11/21/2022

Boron ND 0.100 mg/L

Origins Laboratory, Inc.



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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1716 - DTPA Sorbitol Preparation

<b>Duplicate (B2K1716-DUP1)</b>		<b>Source: Y211428-05</b>			Prepared: 11/17/2022 Analyzed: 11/21/2022					
Boron	ND	0.100	mg/L		ND				50	

Origins Laboratory, Inc.



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Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

## 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 B2K1720 - Saturated Paste pH/EC</b>										
<b>Duplicate (B2K1720-DUP1)</b>		<b>Source: Y211410-02</b>			Prepared: 11/17/2022 Analyzed: 11/18/2022					
pH	7.41		pH Units		7.18			3.15	25	
<b>Batch B2K1724 - Saturated Paste pH/EC</b>										
<b>Blank (B2K1724-BLK1)</b>		Prepared: 11/17/2022 Analyzed: 11/18/2022								
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B2K1724-DUP1)</b>		<b>Source: Y211410-02</b>			Prepared: 11/17/2022 Analyzed: 11/18/2022					
Specific Conductance (EC)	0.0897	0.00500	mmhos/cm		0.0729			20.7	25	

Origins Laboratory, Inc.



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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L649795 - 3550B**

MSD (L 92328-MSD-L649795)		Source: 92328			Prepared: 11/21/2022 Analyzed: 11/22/2022					
Naphthalene	0.0997	0.00201	mg/Kg	0.166	0.0155	50.7	30-130	4.2	30	
Acenaphthene	0.134	0.00067	"	0.166	0.0291	63.1	30-130	16.1	30	
Benzo(k)fluoranthene	0.147	0.00067	"	0.166	0.0464	60.6	30-130	27.9	30	
2-Methylnaphthalene	0.0791	0.00201	"	0.166	0.00478	44.7	30-130	19.6	30	
1-Methylnaphthalene	0.0767	0.00201	"	0.166	0.00279	44.5	30-130	20.5	30	
Anthracene	0.17	0.00067	"	0.166	0.085	51.2	30-130	17.2	30	
Benzo(a)anthracene	0.28	0.00067	"	0.166	0.107	104	30-130	32.8	30	*
Pyrene	0.472	0.00067	"	0.166	0.214	155	30-130	40.8	30	*
Benzo(b)fluoranthene	0.217	0.00067	"	0.166	0.0865	78.6	30-130	20.3	30	
Chrysene	0.285	0.00067	"	0.166	0.13	93.3	30-130	28.4	30	
Dibenz(a,h)anthracene	0.11	0.00067	"	0.166	0.0143	57.6	30-130	8.5	30	
Fluoranthene	0.603	0.00067	"	0.166	0.269	201	30-130	46.8	30	*
Fluorene	0.136	0.00067	"	0.166	0.0346	61	30-130	22	30	
Indeno(1,2,3-cd)pyrene	0.152	0.00067	"	0.166	0.0409	66.9	30-130	14.8	30	
Benzo(a)pyrene	0.217	0.00067	"	0.166	0.0745	85.8	30-130	25.4	30	
Surrogate: 4-Terphenyl-d14	55.2		"	0.331	186	55.2	33-122			
Surrogate: 2-Fluorobiphenyl	43.5		"	0.331	169	43.5	33-115			
Surrogate: Nitrobenzene-d5	43.8		"	0.331	163	43.8	29-110			

MS (L 92328-MS-L649795)		Source: 92328			Prepared: 11/21/2022 Analyzed: 11/22/2022					
Benzo(k)fluoranthene	0.111	0.00067	mg/Kg	0.167	0.0464	38.6	30-130			
Pyrene	0.312	0.00067	"	0.167	0.214	58.6	30-130			
Chrysene	0.214	0.00067	"	0.167	0.13	50.2	30-130			
1-Methylnaphthalene	0.0943	0.00201	"	0.167	0.00279	54.7	30-130			
2-Methylnaphthalene	0.0963	0.00201	"	0.167	0.00478	54.8	30-130			
Acenaphthene	0.114	0.00067	"	0.167	0.0291	50.8	30-130			
Anthracene	0.143	0.00067	"	0.167	0.085	34.7	30-130			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L649795 - 3550B**

MS (L 92328-MS-L649795)		Source: 92328			Prepared: 11/21/2022 Analyzed: 11/22/2022					
Benzo(a)anthracene	0.201	0.00067	mg/Kg	0.167	0.107	56.2	30-130			
Benzo(a)pyrene	0.168	0.00067	"	0.167	0.0745	55.9	30-130			
Dibenz(a,h)anthracene	0.101	0.00067	"	0.167	0.0143	51.9	30-130			
Benzo(b)fluoranthene	0.177	0.00067	"	0.167	0.0865	54.1	30-130			
Fluoranthene	0.374	0.00067	"	0.167	0.269	62.8	30-130			
Fluorene	0.109	0.00067	"	0.167	0.0346	44.5	30-130			
Indeno(1,2,3-cd)pyrene	0.131	0.00067	"	0.167	0.0409	53.9	30-130			
Naphthalene	0.104	0.00201	"	0.167	0.0155	52.9	30-130			
Surrogate: 2-Fluorobiphenyl	54.3		"	0.333	169	54.3	33-115			
Surrogate: 4-Terphenyl-d14	53.4		"	0.333	186	53.4	33-122			
Surrogate: Nitrobenzene-d5	48.6		"	0.333	163	48.6	29-110			

LCS (LCS-L649795)		Prepared: 11/21/2022 Analyzed: 11/22/2022								
Dibenz(a,h)anthracene	0.074	0.00067	mg/Kg	0.167		44.3	30-130			
Fluoranthene	0.0842	0.00067	"	0.167		50.4	30-130			
Fluorene	0.0819	0.00067	"	0.167		49	30-130			
Indeno(1,2,3-cd)pyrene	0.073	0.00067	"	0.167		43.7	30-130			
Naphthalene	0.0852	0.00201	"	0.167		51	30-130			
Pyrene	0.0824	0.00067	"	0.167		49.3	30-130			
Anthracene	0.0849	0.00067	"	0.167		50.8	30-130			
1-Methylnaphthalene	0.0849	0.00201	"	0.167		50.8	30-130			
Benzo(k)fluoranthene	0.0722	0.00067	"	0.167		43.2	30-130			
Benzo(b)fluoranthene	0.0673	0.00067	"	0.167		40.2	30-130			
Benzo(a)anthracene	0.0867	0.00067	"	0.167		51.9	30-130			
Acenaphthene	0.0841	0.00067	"	0.167		50.3	30-130			
2-Methylnaphthalene	0.0834	0.00201	"	0.167		49.9	30-130			
Benzo(a)pyrene	0.0847	0.00067	"	0.167		50.7	30-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L649795 - 3550B**

**LCS (LCS-L649795)**

Prepared: 11/21/2022 Analyzed: 11/22/2022

Chrysene	0.0903	0.00067	mg/Kg	0.167	54	30-130				
Surrogate: Nitrobenzene-d5	51.6		"	0.333	51.6	29-110				
Surrogate: 4-Terphenyl-d14	55.5		"	0.333	55.5	33-122				
Surrogate: 2-Fluorobiphenyl	50.7		"	0.333	50.7	33-115				

**LRB (LRB-L649795)**

Prepared: 11/21/2022 Analyzed: 11/22/2022

Chrysene	ND	0.00067	mg/Kg			-				
Dibenz(a,h)anthracene	ND	0.00067	"			-				
Fluoranthene	ND	0.00067	"			-				
Fluorene	ND	0.00067	"			-				
Indeno(1,2,3-cd)pyrene	ND	0.00067	"			-				
Benzo(k)fluoranthene	ND	0.00067	"			-				
Naphthalene	ND	0.00201	"			-				
Benzo(b)fluoranthene	ND	0.00067	"			-				
Benzo(a)pyrene	ND	0.00067	"			-				
Benzo(a)anthracene	ND	0.00067	"			-				
Acenaphthene	ND	0.00067	"			-				
2-Methylnaphthalene	ND	0.00201	"			-				
1-Methylnaphthalene	ND	0.00201	"			-				
Pyrene	ND	0.00067	"			-				
Anthracene	ND	0.00067	"			-				
Surrogate: Nitrobenzene-d5	48.6		"	0.333	48.6	29-110				
Surrogate: 4-Terphenyl-d14	49.5		"	0.333	49.5	33-122				
Surrogate: 2-Fluorobiphenyl	57		"	0.333	57	33-115				

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Broomfield CO 80020

Jake Whritenour  
Project Number: UWRWE-A2124-ABN  
Project: Noble - Spike State CC30-13

### Notes and Definitions

U Sample is Non-Detect.

\* QC Failure

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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