

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - GUTTERSEN D10-29

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01-B@2'	11/09/22	0.6	No Staining	No Odor	Lab	40.24883307	-104.5405490	0.9
FL01-C@3'	11/09/22	1.8	No Staining	No Odor	Lab	40.24760720	-104.5413782	0.8

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. - GUTTERSEN D10-29

Soil Sample ID	Date	¹ 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 ²		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 ^{2,3}		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@2'	11/09/22	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<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-C@3'	11/09/22	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.00872	<0.200	<25.0	<100	0.0125	0.0194	0.0191	0.0164	0.0121	0.0105	0.0185	0.00252	0.0516	0.0177	0.00727	0.0425	<0.00201	0.0034

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
FL01-B@2'	11/09/22	7.93	0.303	0.147	<0.0997
FL01-C@3'	11/09/22	8.22	0.902	0.259	<0.100

Notes:

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

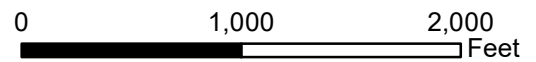
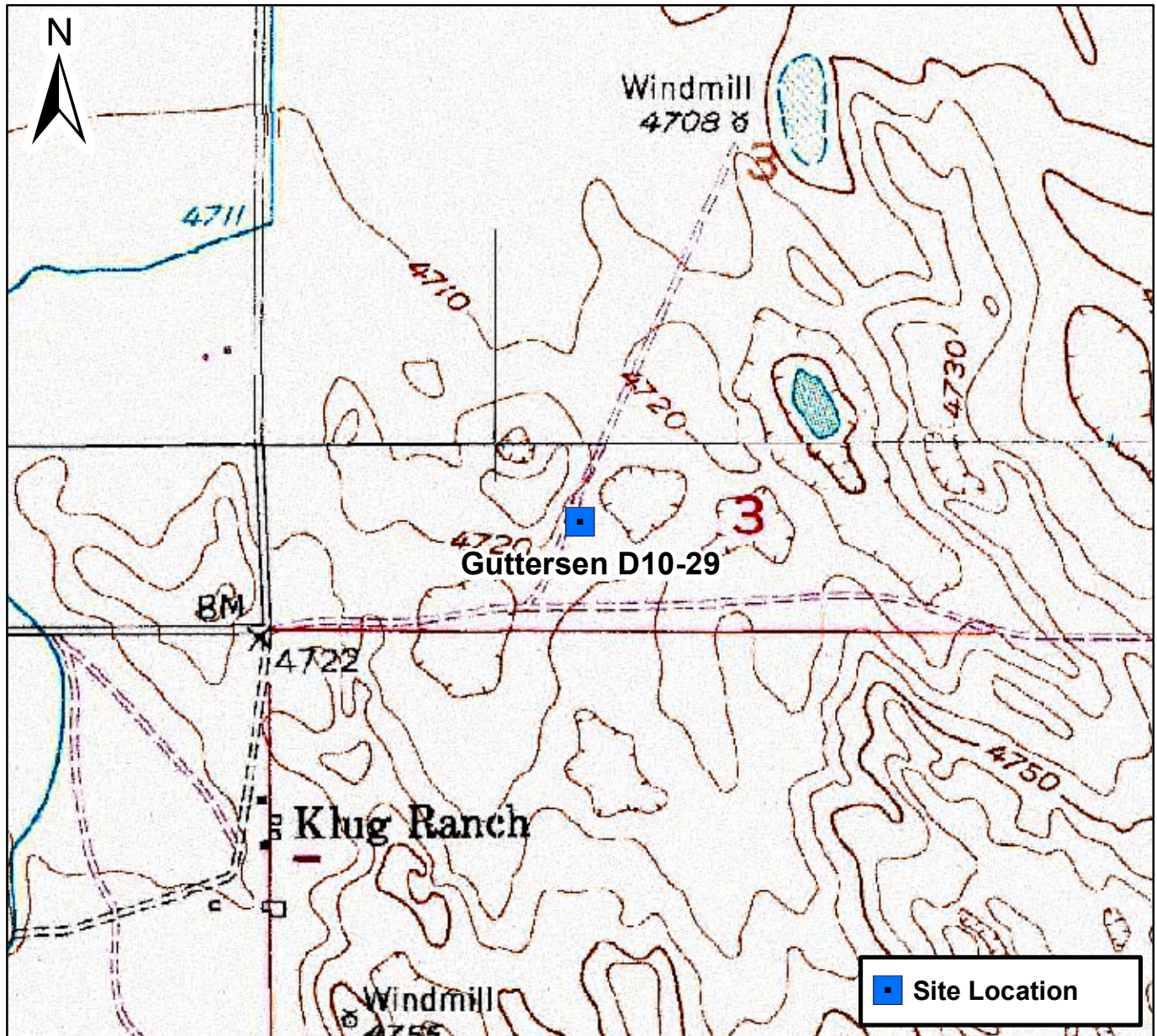


Figure 1

Site Location Map
Gutteresen D10-29
SESW S3 T3N R64W
Weld County, Colorado





DATE:	11/18/2022
DESIGNED BY:	JW
DRAWN BY:	cc



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Guttersen D10-29
SESW, Section 3, Township 3 North, Range 64 West
Weld County, Colorado

Flowline Soil
Analytical Results Map
(11/09/2022)

FIGURE
2

Photographic Log

					
Equipment ID: FL01-B@2'		Equipment Type: Separator			
Material: Steel	Volume:	Contents: Oil/Gas/Water		Equipment ID: FL01-C@3'	
			Equipment Type: Flowline		
Material: Steel		Volume:	Contents: Oil/Gas/Water		
Notes/Conditions:			Notes/Conditions: Abandonment occurs between FL01-C@3' and FL01-B@2'		



November 18, 2022

Tasman Geosciences

Jake Whritenour

6855 West 119th Avenue

Broomfield CO 80020

Project Name - Noble - Guttersen D10-29

Project Number - [none]

Attached are your analytical results for Noble - Guttersen D10-29 received by Origins Laboratory, Inc. November 09, 2022. This project is associated with Origins project number Y211263-01.

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: [none]

Project: Noble - Gutterson D10-29

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-B@2'	Y211263-01	Soil	November 9, 2022 12:20	11/09/2022 14:20
FL01-C@3'	Y211263-02	Soil	November 9, 2022 12:35	11/09/2022 14:20

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.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Guttersen D10-29

Client: Noble/Tasman Project Manager: Jake Whritenour
Address: 6855 W. 119th Ave Project Name: Guttersen D10-29
Broomfield CO Project Number: UWIKWE-A2632-ABN
Telephone Number: 503-915-3046 Samples Collected By: Martin Medeiros
Email Address: jwhritenour@tasman-ge.com

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions		
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other	VOC-915	TPH-915	PAH-915		PH, EC, SAR	Boron-Hmg
FL01-B @ 2'	11/1/22	12:20	2	X					X				X	X	X	X	1
FL01-C @ 3'	11/9/22	12:35	2	X					X				X	X	X	X	2
																	3
																	4
																	5
																	6
																	7
																	8
																	9
																	10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>Martin Medeiros</i>	11/1/22	14:20	<i>UW</i>	11/9/22	14:20	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"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

Temp Received: 8.9

Origins Laboratory, Inc.

J. Bynon

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Guttersen D10-29

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4211203

Client: Tasman

Client Project ID: Guttersen D10-29

Checklist Completed by: TSW / DE

Shipped Via: HO

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

Date/time completed: 11/9/12

Airbill #: N/A

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

☐ Water

☐ Other:

(Describe)

Cooler Number/Temperature: 1 13.9 °C / °C / °C / °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 ⁽¹⁾ ?		X		
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
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)			X	
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: JB (Project Manager)

Date/Time Reviewed: 11/02/12

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: [none]
Project: Noble - Gutttersen D10-29

FL01-B@2'

11/9/2022 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-01 (Soil) Origins Laboratory, Inc.

Boron (DTPA Sorbitol)

Boron	ND	0.0997	mg/L	1	B2K1012	KAP	11/10/2022	11/11/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1001	ADM	11/10/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	96.8 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1043	HKS	11/10/2022	11/15/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	118 %	70-130			"	"	"
Surrogate: Toluene-d8	94.8 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	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: [none]
Project: Noble - Gutterson D10-29

FL01-B@2'

11/9/2022 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-01 (Soil)

Origins Laboratory, Inc.

Metals by Saturated Paste by EPA 6010

Calcium	0.777	0.499	meq/L	10	[CALC]	KAP	11/11/2022	11/15/2022
Magnesium	ND	0.823	"	"	"	KAP	"	"
Sodium	ND	0.435	"	"	"	KAP	"	"

pH in Soil by 9045D

pH	7.93		pH Units	1	B2K1112	HJD	11/11/2022	11/15/2022
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SAR by 20B Saturated Paste

SAR	0.303		SAR	1	B2K1104	KAP	11/11/2022	11/15/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.147	0.00500	mmhos/cm	1	B2K1112	HJD	11/11/2022	11/15/2022
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Waypoint Analytical, LLC.

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L648698		11/14/2022	11/14/2022
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: [none]
Project: Noble - Gutterson D10-29

FL01-B@2'

11/9/2022 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-01 (Soil)

Waypoint Analytical, LLC.

PAH by 8270D SIM

Benzo(a)anthracene	ND	0.00067	mg/Kg	1	L648698		11/14/2022	11/14/2022	
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	50.8 %	33-115		"	"	"
Surrogate: 4-Terphenyl-d14	54.7 %	33-122		"	"	"
Surrogate: Nitrobenzene-d5	40.2 %	29-110		"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Gutttersen D10-29

FL01-C@3'

11/9/2022 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-02 (Soil) Origins Laboratory, Inc.

Boron (DTPA Sorbitol)

Boron	ND	0.100	mg/L	1	B2K1012	KAP	11/10/2022	11/11/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K1001	ADM	11/10/2022	11/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	94.8 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K1043	HKS	11/10/2022	11/15/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	118 %	70-130			"	"	"	
Surrogate: Toluene-d8	95.2 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	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: [none]
Project: Noble - Gutterson D10-29

FL01-C@3'

11/9/2022 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-02 (Soil)

Origins Laboratory, Inc.

Metals by Saturated Paste by EPA 6010

Calcium	1.13	0.499	meq/L	10	[CALC]	KAP	11/11/2022	11/15/2022
Magnesium	ND	0.823	"	"	"	KAP	"	"
Sodium	0.817	0.435	"	"	"	KAP	"	"

pH in Soil by 9045D

pH	8.22		pH Units	1	B2K1112	HJD	11/11/2022	11/15/2022
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SAR by 20B Saturated Paste

SAR	0.902		SAR	1	B2K1104	KAP	11/11/2022	11/15/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.259	0.00500	mmhos/cm	1	B2K1112	HJD	11/11/2022	11/15/2022
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Waypoint Analytical, LLC.

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00201	mg/Kg	1	L648698		11/14/2022	11/14/2022
2-Methylnaphthalene	0.0034	0.00201	"	"	"		"	"
Acenaphthene	0.0125	0.00067	"	"	"		"	"
Anthracene	0.0194	0.00067	"	"	"		"	"
Benzo(a)anthracene	0.0191	0.00067	"	"	"		"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

FL01-C@3'

11/9/2022 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y211263-02 (Soil)

Waypoint Analytical, LLC.

PAH by 8270D SIM

Benzo(a)pyrene	0.0164	0.00067	mg/Kg	1	L648698		11/14/2022	11/14/2022
Benzo(b)fluoranthene	0.0121	0.00067	"	"	"		"	"
Benzo(k)fluoranthene	0.0105	0.00067	"	"	"		"	"
Chrysene	0.0185	0.00067	"	"	"		"	"
Dibenz(a,h)anthracene	0.00252	0.00067	"	"	"		"	"
Fluoranthene	0.0516	0.00067	"	"	"		"	"
Fluorene	0.0177	0.00067	"	"	"		"	"
Indeno(1,2,3-cd)pyrene	0.00727	0.00067	"	"	"		"	"
Naphthalene	0.00872	0.00201	"	"	"		"	"
Pyrene	0.0425	0.00067	"	"	"		"	"

Surrogate: 2-Fluorobiphenyl	52.1 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	63.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	44.5 %	29-110	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

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 B2K1001 - EPA 3580										
Blank (B2K1001-BLK1)					Prepared: 11/10/2022 Analyzed: 11/11/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		91.4	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Gutttersen D10-29

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 B2K1001 - EPA 3580

LCS (B2K1001-BS1)

Prepared: 11/10/2022 Analyzed: 11/11/2022

Diesel (C10-C28)	983	50.0	mg/kg	1000		98.3	70-130			
Residual Range Organics (C28-C40)	914	200	"	1000		91.4	70-130			
Surrogate: o-Terphenyl	46		"	49.8		92.4	50-150			

Origins Laboratory, Inc.



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Broomfield CO 80020

Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

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 B2K1001 - EPA 3580

Matrix Spike (B2K1001-MS1)		Source: Y211255-01			Prepared: 11/10/2022 Analyzed: 11/11/2022					
Diesel (C10-C28)	995	50.0	mg/kg	1000	ND	99.5	70-130			
Residual Range Organics (C28-C40)	900	200	"	1000	ND	90.0	70-130			
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

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Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

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 B2K1001 - EPA 3580

Matrix Spike Dup (B2K1001-MSD1)		Source: Y211255-01			Prepared: 11/10/2022 Analyzed: 11/11/2022					
Diesel (C10-C28)	796	50.0	mg/kg	1000	ND	79.6	70-130	22.2	35	
Residual Range Organics (C28-C40)	712	200	"	1000	ND	71.2	70-130	23.4	35	
Surrogate: o-Terphenyl	35		"	49.8		70.9	50-150			

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Project Number: [none]
Project: Noble - Gutterson D10-29

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 B2K1043 - EPA 5030 (soil)										
Blank (B2K1043-BLK1)					Prepared: 11/10/2022 Analyzed: 11/14/2022					
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	0.15		"	0.125		117	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Tasman Geosciences
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Jake Whritenour
Project Number: [none]
Project: Noble - Guttersen D10-29

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
Batch B2K1043 - EPA 5030 (soil)										
LCS (B2K1043-BS1)					Prepared: 11/10/2022 Analyzed: 11/14/2022					
1,2,4-Trimethylbenzene	0.0946	0.00200	mg/kg	0.100		94.6	70-130			
1,3,5-Trimethylbenzene	0.0962	0.00200	"	0.100		96.2	70-130			
Benzene	0.106	0.00200	"	0.100		106	70-130			
Ethylbenzene	0.0941	0.00200	"	0.100		94.1	70-130			
Naphthalene	0.106	0.00380	"	0.100		106	70-130			
Toluene	0.102	0.00200	"	0.100		102	70-130			
o-Xylene	0.0969	0.00200	"	0.100		96.9	70-130			
m,p-Xylene	0.185	0.00400	"	0.200		92.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		112	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

Origins Laboratory, Inc.



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Jake Whritenour
Project Number: [none]
Project: Noble - Guttersen D10-29

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
Batch B2K1043 - EPA 5030 (soil)										
Matrix Spike (B2K1043-MS1)		Source: Y211226-01			Prepared: 11/10/2022 Analyzed: 11/14/2022					
1,2,4-Trimethylbenzene	0.0656	0.00200	mg/kg	0.100	0.000680	64.9	70-130			QM-07
1,3,5-Trimethylbenzene	0.0641	0.00200	"	0.100	ND	64.1	70-130			QM-07
Benzene	0.0875	0.00200	"	0.100	ND	87.5	70-130			
Ethylbenzene	0.0711	0.00200	"	0.100	ND	71.1	70-130			
Naphthalene	0.0669	0.00380	"	0.100	0.00168	65.2	70-130			QM-07
Toluene	0.0795	0.00200	"	0.100	0.000800	78.7	70-130			
o-Xylene	0.0722	0.00200	"	0.100	ND	72.2	70-130			
m,p-Xylene	0.138	0.00400	"	0.200	0.00106	68.4	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		118	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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Jake Whritenour
Project Number: [none]
Project: Noble - Gutttersen D10-29

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
Batch B2K1043 - EPA 5030 (soil)										
Matrix Spike Dup (B2K1043-MSD1)		Source: Y211226-01			Prepared: 11/10/2022 Analyzed: 11/14/2022					
1,2,4-Trimethylbenzene	0.0757	0.00200	mg/kg	0.100	0.000680	75.0	70-130	14.4	20	
1,3,5-Trimethylbenzene	0.0757	0.00200	"	0.100	ND	75.7	70-130	16.5	20	
Benzene	0.101	0.00200	"	0.100	ND	101	70-130	14.2	20	
Ethylbenzene	0.0831	0.00200	"	0.100	ND	83.1	70-130	15.5	20	
Naphthalene	0.0780	0.00380	"	0.100	0.00168	76.4	70-130	15.4	20	
Toluene	0.0923	0.00200	"	0.100	0.000800	91.5	70-130	14.8	20	
o-Xylene	0.0857	0.00200	"	0.100	ND	85.7	70-130	17.1	20	
m,p-Xylene	0.163	0.00400	"	0.200	0.00106	80.9	70-130	16.6	20	
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		119	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

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 B2K1012 - DTPA Sorbitol Preparation

Blank (B2K1012-BLK1)

Prepared: 11/10/2022 Analyzed: 11/11/2022

Boron ND 0.100 mg/L

Duplicate (B2K1012-DUP1)

Source: Y211251-01

Prepared: 11/10/2022 Analyzed: 11/11/2022

Boron 1.46 0.100 mg/L 1.52 3.77 50

Batch B2K1104 - Saturated Paste Metals

Blank (B2K1104-BLK1)

Prepared: 11/11/2022 Analyzed: 11/15/2022

Calcium PPM ND 10.0 mg/L

SAR 0.00 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

Duplicate (B2K1104-DUP1)

Source: Y211251-02

Prepared: 11/11/2022 Analyzed: 11/15/2022

SAR 0.00 SAR 26.6 200 200

Calcium PPM 403 100 mg/L 410 1.60 50

Magnesium PPM 490 100 " 531 8.13 50

Sodium PPM 3250 100 " 3460 6.16 50

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Project Number: [none]
Project: Noble - Gutterson D10-29

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2K1112 - Saturated Paste pH/EC										
Blank (B2K1112-BLK1)					Prepared: 11/11/2022 Analyzed: 11/15/2022					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B2K1112-DUP1)					Source: Y211251-02 Prepared: 11/11/2022 Analyzed: 11/15/2022					
pH	8.10		pH Units		8.10			0.00	25	
Specific Conductance (EC)	15.5	0.00500	mmhos/cm		15.6			1.06	25	

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Jake Whritenour
Project Number: [none]
Project: Noble - Guttersen D10-29

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 L648698 - 3550B

MSD (L 89597-MSD-L648698)		Source: 89597			Prepared: 11/14/2022 Analyzed: 11/14/2022					
2-Methylnaphthalene	0.0898	0.00201	mg/Kg	0.165	<0.00194	54.4	30-130	15.6	30	
Fluorene	0.0994	0.00067	"	0.165	<0.000286	60.2	30-130	6.4	30	
Pyrene	0.0922	0.00067	"	0.165	<0.000643	55.8	30-130	20.2	30	
Indeno(1,2,3-cd)pyrene	0.0903	0.00067	"	0.165	<0.000627	54.7	30-130	24	30	
Fluoranthene	0.0986	0.00067	"	0.165	<0.000394	59.7	30-130	18.7	30	
Dibenz(a,h)anthracene	0.0945	0.00067	"	0.165	<0.000614	57.2	30-130	25.4	30	
Chrysene	0.0961	0.00067	"	0.165	<0.000624	58.2	30-130	18.7	30	
Naphthalene	0.0818	0.00201	"	0.165	<0.00145	49.5	30-130	18.9	30	
1-Methylnaphthalene	0.0894	0.00201	"	0.165	<0.00109	54.1	30-130	16.9	30	
Benzo(k)fluoranthene	0.0925	0.00067	"	0.165	<0.000437	56	30-130	7.7	30	
Acenaphthene	0.0879	0.00067	"	0.165	<0.000304	53.2	30-130	16.7	30	
Anthracene	0.0978	0.00067	"	0.165	<0.000334	59.2	30-130	15.2	30	
Benzo(a)anthracene	0.0966	0.00067	"	0.165	<0.000493	58.5	30-130	17.3	30	
Benzo(a)pyrene	0.115	0.00067	"	0.165	<0.000468	69.6	30-130	17.4	30	
Benzo(b)fluoranthene	0.0833	0.00067	"	0.165	<0.000585	50.4	30-130	31.1	30	*
Surrogate: 2-Fluorobiphenyl	50		"	0.33	181	50	33-115			
Surrogate: Nitrobenzene-d5	42.7		"	0.33	142	42.7	29-110			
Surrogate: 4-Terphenyl-d14	54.5		"	0.33	205	54.5	33-122			

MS (L 89597-MS-L648698)		Source: 89597			Prepared: 11/14/2022 Analyzed: 11/14/2022					
Benzo(k)fluoranthene	0.1	0.00067	mg/Kg	0.167	<0.000437	59.8	30-130			
Acenaphthene	0.104	0.00067	"	0.167	<0.000304	62.2	30-130			
Naphthalene	0.0989	0.00201	"	0.167	<0.00145	59.2	30-130			
Indeno(1,2,3-cd)pyrene	0.115	0.00067	"	0.167	<0.000627	68.8	30-130			
Fluorene	0.106	0.00067	"	0.167	<0.000286	63.4	30-130			
Fluoranthene	0.119	0.00067	"	0.167	<0.000394	71.2	30-130			
Dibenz(a,h)anthracene	0.122	0.00067	"	0.167	<0.000614	73	30-130			

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Project: Noble - Gutterson D10-29

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 L648698 - 3550B

MS (L 89597-MS-L648698)		Source: 89597			Prepared: 11/14/2022 Analyzed: 11/14/2022					
Chrysene	0.116	0.00067	mg/Kg	0.167	<0.000624	69.4	30-130			
1-Methylnaphthalene	0.106	0.00201	"	0.167	<0.00109	63.4	30-130			
Benzo(a)pyrene	0.137	0.00067	"	0.167	<0.000468	82	30-130			
Anthracene	0.114	0.00067	"	0.167	<0.000334	68.2	30-130			
Pyrene	0.113	0.00067	"	0.167	<0.000643	67.6	30-130			
2-Methylnaphthalene	0.105	0.00201	"	0.167	<0.00194	62.8	30-130			
Benzo(b)fluoranthene	0.114	0.00067	"	0.167	<0.000585	68.2	30-130			
Benzo(a)anthracene	0.115	0.00067	"	0.167	<0.000493	68.8	30-130			
Surrogate: Nitrobenzene-d5	50.1		"	0.333	142	50.1	29-110			
Surrogate: 4-Terphenyl-d14	60.6		"	0.333	205	60.6	33-122			
Surrogate: 2-Fluorobiphenyl	59.1		"	0.333	181	59.1	33-115			

LCS (LCS-L648698)		Prepared: 11/14/2022 Analyzed: 11/14/2022								
Chrysene	0.106	0.00067	mg/Kg	0.167		63.4	30-130			
Dibenz(a,h)anthracene	0.119	0.00067	"	0.167		71.2	30-130			
Fluoranthene	0.118	0.00067	"	0.167		70.6	30-130			
Fluorene	0.107	0.00067	"	0.167		64	30-130			
Indeno(1,2,3-cd)pyrene	0.116	0.00067	"	0.167		69.4	30-130			
Naphthalene	0.0939	0.00201	"	0.167		56.2	30-130			
Benzo(k)fluoranthene	0.111	0.00067	"	0.167		66.4	30-130			
Pyrene	0.115	0.00067	"	0.167		68.8	30-130			
Benzo(a)pyrene	0.123	0.00067	"	0.167		73.6	30-130			
Benzo(a)anthracene	0.108	0.00067	"	0.167		64.6	30-130			
Anthracene	0.11	0.00067	"	0.167		65.8	30-130			
Acenaphthene	0.0971	0.00067	"	0.167		58.1	30-130			
2-Methylnaphthalene	0.0956	0.00201	"	0.167		57.2	30-130			
1-Methylnaphthalene	0.0956	0.00201	"	0.167		57.2	30-130			

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Project: Noble - Gutttersen D10-29

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
Batch L648698 - 3550B										
LCS (LCS-L648698)					Prepared: 11/14/2022 Analyzed: 11/14/2022					
Benzo(b)fluoranthene	0.107	0.00067	mg/Kg	0.167		64	30-130			
Surrogate: Nitrobenzene-d5	46.8		"	0.333		46.8	29-110			
Surrogate: 4-Terphenyl-d14	67.2		"	0.333		67.2	33-122			
Surrogate: 2-Fluorobiphenyl	57.6		"	0.333		57.6	33-115			
LRB (LRB-L648698)					Prepared: 11/14/2022 Analyzed: 11/14/2022					
Chrysene	ND	0.00067	mg/Kg				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Naphthalene	ND	0.00201	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
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	51.6		"	0.333		51.6	29-110			
Surrogate: 4-Terphenyl-d14	63.3		"	0.333		63.3	33-122			
Surrogate: 2-Fluorobiphenyl	58.5		"	0.333		58.5	33-115			

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Jake Whritenour
Project Number: [none]
Project: Noble - Gutterson D10-29

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.

* 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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