

Wellhead Closure Checklist

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

Additional attachments (optional): <u> </u>		Pit Closure <u> </u>		Tank Battery Closure <u> </u>		Flowline Closure <u> </u>		Partially Buried Vault Closure <u> </u>
Site Name & COGCC Facility Number: Johnson PM C #29-8		Date: 01-10-23					Remediation Project #: 25274	
Associated Wells: 05-123-14213		Age of Site: years					Number of Photos Attached: 2	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.285320 / -104.568330							Estimated Facility Size (acres): <u> </u>	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good condition								
USCS Soil Type: SM				Estimated Depth to Groundwater: ~10-15'				
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	05-123-14213							
Age	years							
Condition of surface around wellhead	Good - Per Crew							
PID Readings	N/A - Excavated upon arrival							
Condition of subsurface (staining present)	Good - No odor/no staining							
PID Readings	1.1	1.2	1.1	1.8	2.2			
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01			
Photo Number(s)	See photo log							
Other observations regarding wellheads: Well casing cut/capped following assessment								
Summary								
Was impacted soil identified? (No) Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: 5				Total number of samples collected: 5				
Highest PID Reading: 2.2				Total number of samples submitted to lab for analysis: 1				
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:				Estimated spill volume:				
Lateral extent:				Volume of soil removed:				
N/A								
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:								

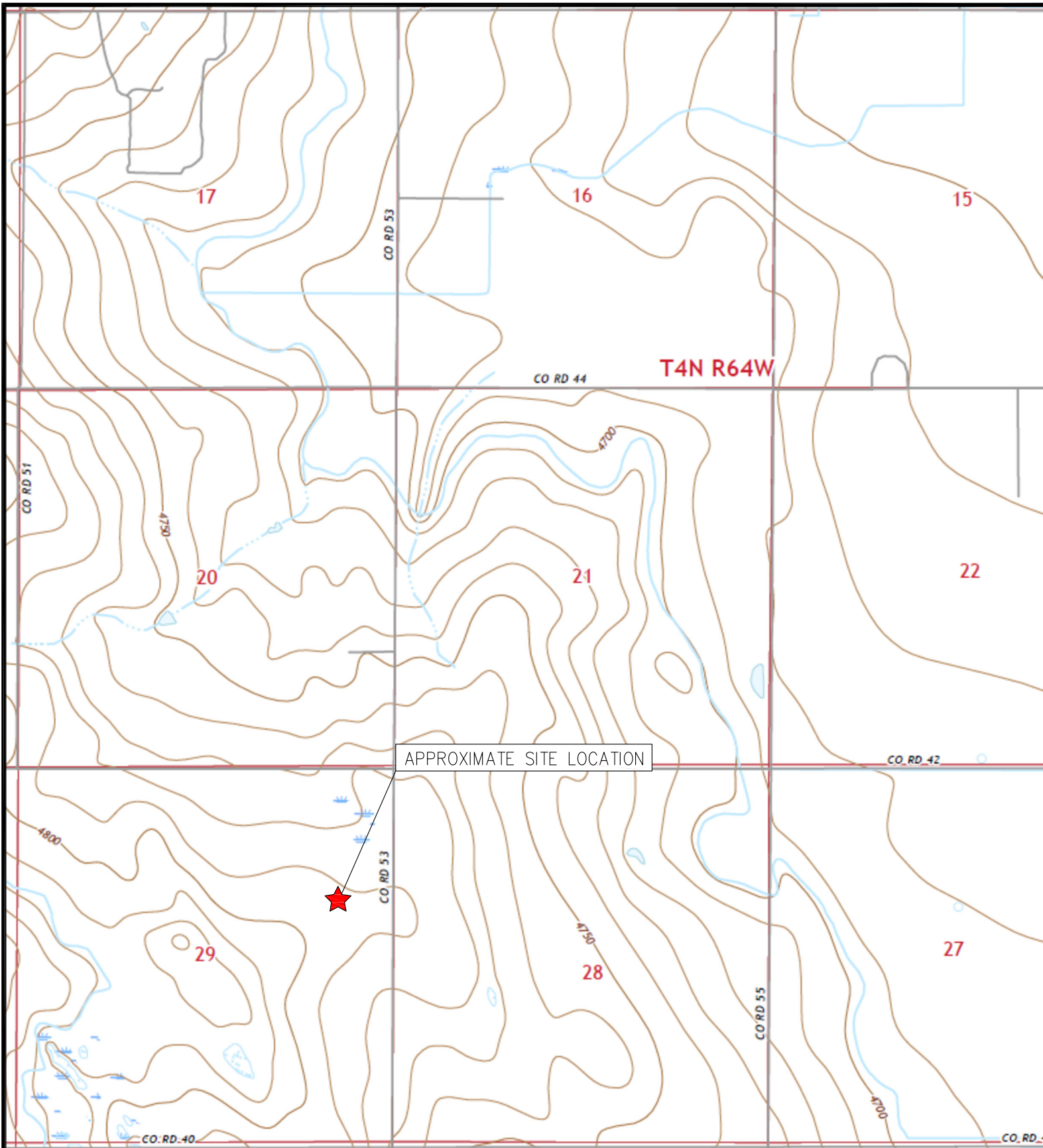


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
 JOHNSON PM C #29-8
 CLOSURE ASSESSMENT
 40.285320 / -104.568330
 SE¼ NE¼ SEC.29 T4N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-14213
 REMEDIATION # 25274



EAGLE
 ENVIRONMENTAL
 CONSULTING, LLC

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

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP,
 VALLEY VIEW SCHOOL, CO QUADRANGLE 2022

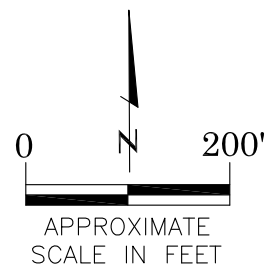
FIGURE 1



LEGEND



FORMER JOHNSON PM C #29-8 WELLHEAD (PLUGGED AND ABANDONED)



AERIAL SITE LOCATION MAP

JOHNSON PM C #29-8

CLOSURE ASSESSMENT

40.285320 / -104.568330

SE¼ NE¼ SEC.29 T4N R64W 6PM

WELD COUNTY, COLORADO

API # 05-123-14213

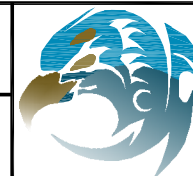
REMEDATION # 25274

FIGURE NO.

2

DRAWN BY:

TC



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LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)
R = TPH-RRO (mg/kg)
1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)
Brn= BORON (mg/L)
EC = SPECIFIC CONDUCTANCE (mmhos/cm)
SAR= SODIUM ADSORPTION RATIO
pH = pH (pH UNITS)
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
mmhos/cm = MILLIMHOS PER CENTIMETER

(BRL) - ALL VALUES BELOW REGULATORY LIMITS

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS
TPH-RRO = TOTAL PETROLEUM HYDROCARBONS - RESIDUAL RANGE ORGANICS

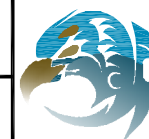
NOTES:
VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS.

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

SOIL ANALYTICAL MAP
JOHNSON PM C #29-8
CLOSURE ASSESSMENT
40.285320 / -104.568330
SE¼ NE¼ SEC.29 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-14213
REMEDIALTION # 25274

FIGURE NO.
3

DRAWN BY:
CT



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Ph: 303-433-0479 • F: 303-325-5449



TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
JOHNSON PM C #29-8
CLOSURE ASSESSMENT
40.285320 / -104.568330
SE¼ NE¼ SEC.29 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-14213
REMEDiation # 25274

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.285346 / -104.568326)	01/10/23	5	1.1	N
WH-SS-02 @ 5' (40.285332 / -104.568306)	01/10/23	5	1.2	N
WH-SS-03 @ 5' (40.285319 / -104.568324)	01/10/23	5	1.1	N
WH-SS-04 @ 5' (40.285334 / -104.568341)	01/10/23	5	1.8	N
WH-FS-01 @ 6' (40.285335 / -104.568324)	01/10/23	6	2.2	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				



TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
JOHNSON PM C #29-8
CLOSURE ASSESSMENT 4
0.285320 / -104.568330
SE¼ NE¼ SEC.29 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-14213
REMEDATION # 25274

Sample Location (Latitude / Longitude)				WH-FS-01 @ 6' (40.285335 / -104.568324)	
Sample Date				1/10/2023	
Sample Depth				6'	
PID Reading (ppm-v)				2.2	
Regulatory Limits					
Chemical of Concern	Units	COGCC Table 915-1 RSSLs	COGCC Table 915-1 GSSLs		
VOCs					
Benzene	mg/kg	1.2	0.0026	<0.00200	
Toluene	mg/kg	490	0.69	<0.00200	
Ethylbenzene	mg/kg	5.8	0.78	<0.00200	
Total Xylenes	mg/kg	58	9.9	<0.00200	
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	<0.00200	
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	<0.00200	
TOTAL PETROLEUM HYDROCARBONS					
TPH-GRO	mg/kg	500	--	<0.200	
TPH-DRO	mg/kg	500	--	26.6	
TPH-RRO	mg/kg	500	--	<100	
POLYCYCLIC AROMATIC HYDROCARBONS					
1-Methyl-naphthalene	mg/kg	18	0.006	<0.00201	
2-Methyl-naphthalene	mg/kg	24	0.019	<0.00201	
Acenaphthene	mg/kg	360	0.55	<0.00067	
Anthracene	mg/kg	1800	5.8	<0.00067	
Benzo(a)-anthracene	mg/kg	1.1	0.011	<0.00067	
Benzo(a)-pyrene	mg/kg	0.11	0.24	<0.00067	
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	<0.00067	
Benzo(k)-fluoranthene	mg/kg	11	2.9	<0.00067	
Chrysene	mg/kg	110	9	<0.00067	
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00067	
Fluoranthene	mg/kg	240	8.9	<0.00067	
Fluorene	mg/kg	240	0.54	0.000301	
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00067	
Naphthalene	mg/kg	2	0.0038	<0.00201	
Pyrene	mg/kg	180	1.3	<0.00067	
SOIL SUITABILITY (Inorganics)					
Boron	mg/L	2	--	0.484	
pH	standard unit	6-8.3	--	7.85	
Sodium Adsorption Ratio (SAR)	--	<6	--	2.49	
Specific Conductance (EC)	mmhos/cm	<4	--	1.41	
COGCC = Colorado Oil and Gas Conservation Commission			VOCs - Volatile Organic Compounds		
mg/kg = milligrams per kilogram			RSSLs = Residential Soil Screening Levels		
mmhos/cm = millimhos per centimeter			GSSLs = Protection of Groundwater Soil Screening Levels		
PID = Photoionization Detector			TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics		
ppm-v = parts per million by volume			TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics		
mg/L = milligrams per liter			TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics		
SAR = Sodium Adsorption Ratio					
Notes:					
Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit.					
Values presented in BOLD exceed COGCC Table 915-1 Regulatory Limits.					



ATTACHMENT A

Photo Log

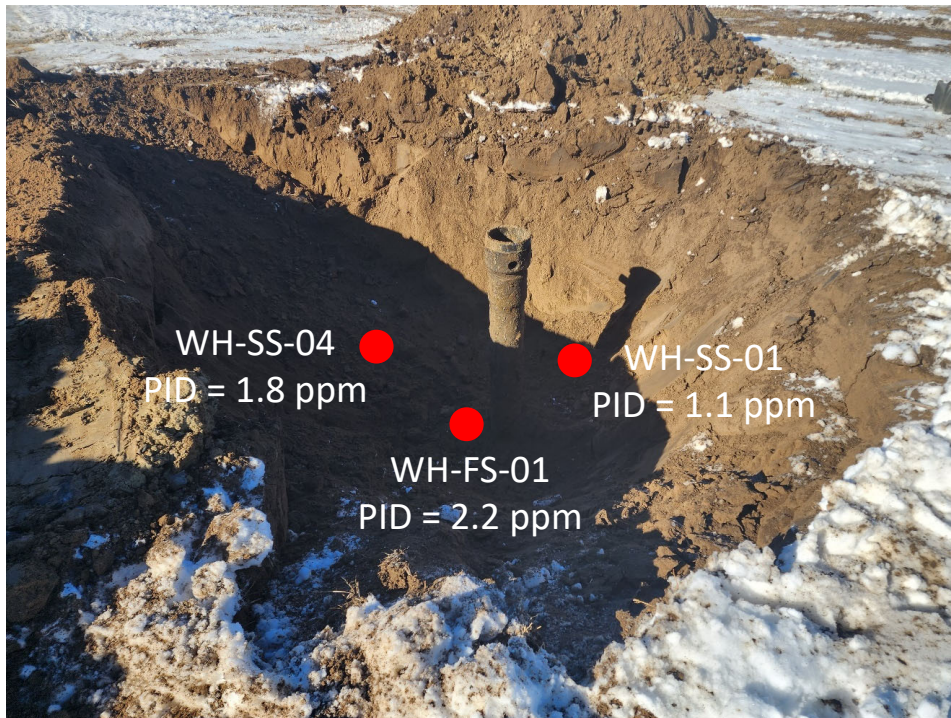
Johnson PM C #29-8
API # 05-123-14213
Remediation # 25274

Closure Assessment

January 2023

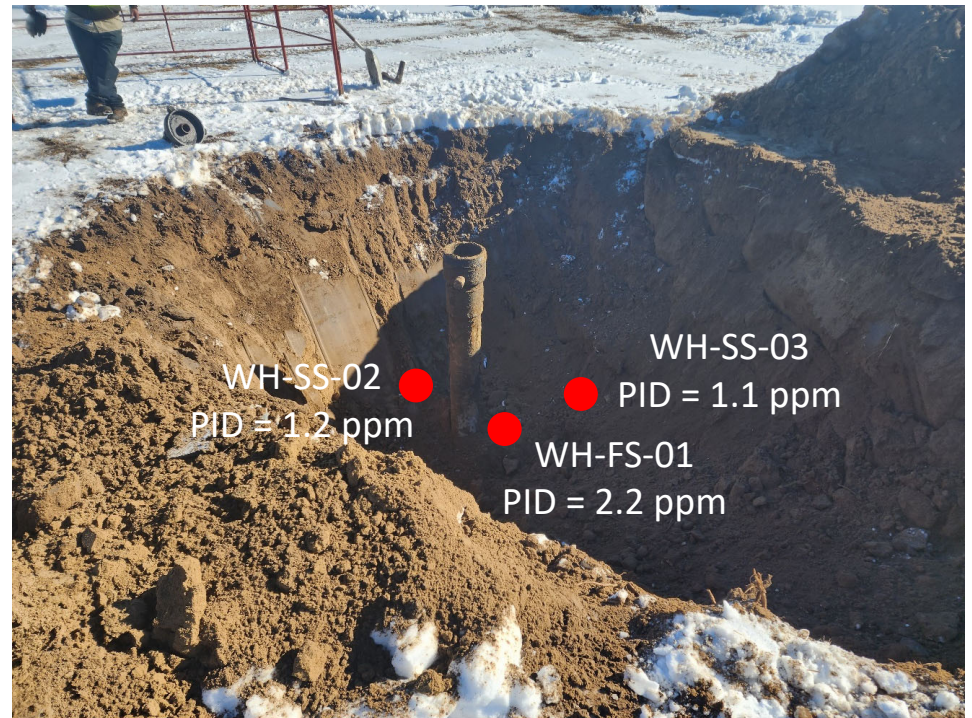


Wellhead Excavation – 01/10/23



Looking northwest

No petroleum hydrocarbon staining or odor observed



Looking southeast

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



January 17, 2023

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Johnson PM C #29-8

Project Number - [none]

Attached are your analytical results for Noble - Johnson PM C #29-8 received by Origins Laboratory, Inc. January 10, 2023. This project is associated with Origins project number Y301131-01.

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

Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Johnson PM C #29-8

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y301131-01	Soil	January 10, 2023 13:13	01/10/2023 14:00

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.

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

[illegible]

Origins Laboratory, Inc.

Byron

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, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Johnson PM C #29-8

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4301431

Client: Eagle

Client Project ID: Johnson PM C #29-8

Checklist Completed by: EHS

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

Date/time completed: 1/10/23

Airbill #: NA

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

Cooler Number/Temperature: 1 / 45 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: 1004

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"/>	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 type="checkbox"/>	<input type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<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: JB (Project Manager)

Date/Time Reviewed: 1-11-23

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.

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

WH-FS-01@6'
1/10/2023 1:13:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y301131-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.484	0.0986	mg/L	1	B3A1101	01/11/2023	01/12/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	26.6	25.0	mg/kg	1	B3A1115	01/11/2023	01/11/2023	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	112 %	50-150	"	"	"	"	"	
------------------------	-------	--------	---	---	---	---	---	--

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3A1110	01/11/2023	01/12/2023	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	99.5 %	70-130	"	"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130	"	"	"	"	"	

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

WH-FS-01@6'
1/10/2023 1:13:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y301131-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	98.8 %	70-130		B3A11 10	01/11/2023	01/12/2023
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Metals by Saturated Paste by EPA 6010

Calcium	4.68	0.499	meq/L	10	[CALC]	01/11/2023	01/12/2023
Magnesium	1.91	0.823	"	"	"	"	"
Sodium	4.52	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L658117	01/12/2023	01/12/2023
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"
Fluorene	0.000301	0.000286	0.00067	"	"	"	"	"

J

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, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

WH-FS-01@6'

1/10/2023 1:13:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y301131-01 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	mg/Kg	1	L658117	01/12/2023	01/12/2023
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	36 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	45 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	38.4 %		29-110			"	"	"

pH in Soil by 9045D

pH	7.85			pH Units	1	B3A1106	01/11/2023	01/12/2023
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SAR by 20B Saturated Paste

SAR	2.49			SAR	1	B3A1104	01/11/2023	01/12/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.41		0.00500	mmhos/cm	1	B3A1106	01/11/2023	01/12/2023
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Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1110 - EPA 5030 (soil)										
Blank (B3A1110-BLK1)					Prepared: 01/11/2023 Analyzed: 01/11/2023					
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	0.12		"	0.125		96.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1110 - EPA 5030 (soil)										
LCS (B3A1110-BS1)					Prepared: 01/11/2023 Analyzed: 01/11/2023					
1,2,4-Trimethylbenzene	0.0908	0.00200	mg/kg	0.100		90.8	70-130			
1,3,5-Trimethylbenzene	0.0921	0.00200	"	0.100		92.1	70-130			
Benzene	0.0977	0.00200	"	0.100		97.7	70-130			
Ethylbenzene	0.0928	0.00200	"	0.100		92.8	70-130			
Naphthalene	0.0926	0.00380	"	0.100		92.6	70-130			
Toluene	0.0967	0.00200	"	0.100		96.7	70-130			
o-Xylene	0.0949	0.00200	"	0.100		94.9	70-130			
m,p-Xylene	0.182	0.00400	"	0.200		91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1110 - EPA 5030 (soil)										
Matrix Spike (B3A1110-MS1)		Source: Y301128-01			Prepared: 01/11/2023 Analyzed: 01/11/2023					
1,2,4-Trimethylbenzene	0.0768	0.00200	mg/kg	0.100	ND	76.8	70-130			
1,3,5-Trimethylbenzene	0.0777	0.00200	"	0.100	ND	77.7	70-130			
Benzene	0.0931	0.00200	"	0.100	ND	93.1	70-130			
Ethylbenzene	0.0836	0.00200	"	0.100	ND	83.6	70-130			
Naphthalene	0.0791	0.00380	"	0.100	ND	79.1	70-130			
Toluene	0.0895	0.00200	"	0.100	ND	89.5	70-130			
o-Xylene	0.0847	0.00200	"	0.100	ND	84.7	70-130			
m,p-Xylene	0.163	0.00400	"	0.200	ND	81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1110 - EPA 5030 (soil)										
Matrix Spike Dup (B3A1110-MSD1)		Source: Y301128-01			Prepared: 01/11/2023 Analyzed: 01/11/2023					
1,2,4-Trimethylbenzene	0.0708	0.00200	mg/kg	0.100	ND	70.8	70-130	8.10	20	
1,3,5-Trimethylbenzene	0.0708	0.00200	"	0.100	ND	70.8	70-130	9.34	20	
Benzene	0.0888	0.00200	"	0.100	ND	88.8	70-130	4.73	20	
Ethylbenzene	0.0794	0.00200	"	0.100	ND	79.4	70-130	5.18	20	
Naphthalene	0.0716	0.00380	"	0.100	ND	71.6	70-130	9.98	20	
Toluene	0.0847	0.00200	"	0.100	ND	84.7	70-130	5.46	20	
o-Xylene	0.0812	0.00200	"	0.100	ND	81.2	70-130	4.32	20	
m,p-Xylene	0.155	0.00400	"	0.200	ND	77.6	70-130	4.59	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1115 - EPA 3580										
Blank (B3A1115-BLK1)					Prepared: 01/11/2023 Analyzed: 01/11/2023					
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, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1115 - EPA 3580

LCS (B3A1115-BS1)

Prepared: 01/11/2023 Analyzed: 01/11/2023

Diesel (C10-C28)	943	50.0	mg/kg	1000		94.3	70-130			
Residual Range Organics (C28-C40)	918	200	"	1000		91.8	70-130			
Surrogate: o-Terphenyl	52		"	49.8		105	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1115 - EPA 3580

Matrix Spike (B3A1115-MS1)		Source: Y301128-01			Prepared: 01/11/2023 Analyzed: 01/11/2023					
Diesel (C10-C28)	836	50.0	mg/kg	1000	ND	83.6	70-130			
Residual Range Organics (C28-C40)	857	200	"	1000	ND	85.7	70-130			
Surrogate: o-Terphenyl	45		"	49.8		90.1	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 B3A1115 - EPA 3580										
Matrix Spike Dup (B3A1115-MSD1)		Source: Y301128-01			Prepared: 01/11/2023 Analyzed: 01/11/2023					
Diesel (C10-C28)	943	50.0	mg/kg	1000	ND	94.3	70-130	12.0	35	
Residual Range Organics (C28-C40)	965	200	"	1000	ND	96.5	70-130	11.9	35	
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

Origins Laboratory, Inc.



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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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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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 B3A1101 - DTPA Sorbitol Preparation

Blank (B3A1101-BLK1)

Prepared: 01/11/2023 Analyzed: 01/12/2023

Boron ND 0.100 mg/L

Duplicate (B3A1101-DUP1)

Source: Y301128-01

Prepared: 01/11/2023 Analyzed: 01/12/2023

Boron 0.438 0.0983 mg/L 0.385 12.8 50

Batch B3A1104 - Saturated Paste Metals

Blank (B3A1104-BLK1)

Prepared: 01/11/2023 Analyzed: 01/12/2023

SAR 0.00 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

Duplicate (B3A1104-DUP1)

Source: Y301113-04

Prepared: 01/11/2023 Analyzed: 01/12/2023

SAR 0.00 SAR 3.46 200 200

Calcium PPM 137 10.0 mg/L 135 1.45 50

Magnesium PPM 22.2 10.0 " 21.6 2.80 50

Sodium PPM 150 10.0 " 164 8.93 50

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3A1106 - Saturated Paste pH/EC										
Blank (B3A1106-BLK1)					Prepared: 01/11/2023 Analyzed: 01/12/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B3A1106-DUP1)					Source: Y301113-04 Prepared: 01/11/2023 Analyzed: 01/12/2023					
pH	7.29		pH Units		7.43			1.90	25	
Specific Conductance (EC)	1.74	0.00500	mmhos/cm		1.70			2.36	25	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 L658117 - 3550B

MSD (L 91883-MSD-L658117)		Source: 91883			Prepared: 01/12/2023 Analyzed: 01/12/2023					
2-Methylnaphthalene	0.0921	0.00201	mg/Kg	0.162	<0.00194	56.8	30-130	3.3	30	
Fluorene	0.112	0.00067	"	0.162	<0.000286	69.1	30-130	0	30	
Pyrene	0.109	0.00067	"	0.162	<0.000643	67.2	30-130	4.4	30	
Indeno(1,2,3-cd)pyrene	0.112	0.00067	"	0.162	<0.000627	69.1	30-130	25	30	
Fluoranthene	0.114	0.00067	"	0.162	0.000739	69.9	30-130	3.4	30	
Dibenz(a,h)anthracene	0.154	0.00067	"	0.162	<0.000614	95	30-130	16.6	30	
Chrysene	0.121	0.00067	"	0.162	<0.000624	74.6	30-130	7.1	30	
Naphthalene	0.0871	0.00201	"	0.162	<0.00145	53.7	30-130	3.1	30	
1-Methylnaphthalene	0.0908	0.00201	"	0.162	<0.00109	56	30-130	3.3	30	
Benzo(k)fluoranthene	0.103	0.00067	"	0.162	<0.000437	63.5	30-130	8	30	
Acenaphthene	0.102	0.00067	"	0.162	<0.000304	62.9	30-130	3.1	30	
Anthracene	0.114	0.00067	"	0.162	<0.000334	70.3	30-130	4.2	30	
Benzo(a)anthracene	0.104	0.00067	"	0.162	<0.000493	64.1	30-130	8.2	30	
Benzo(a)pyrene	0.119	0.00067	"	0.162	<0.000468	73.4	30-130	9.6	30	
Benzo(b)fluoranthene	0.111	0.00067	"	0.162	<0.000585	68.5	30-130	18.7	30	
Surrogate: 2-Fluorobiphenyl	42.4		"	0.325	117	42.4	33-115			
Surrogate: Nitrobenzene-d5	50.1		"	0.325	143	50.1	29-110			
Surrogate: 4-Terphenyl-d14	53.2		"	0.325	163	53.2	33-122			

MS (L 91883-MS-L658117)		Source: 91883			Prepared: 01/12/2023 Analyzed: 01/12/2023					
Benzo(k)fluoranthene	0.095	0.00067	mg/Kg	0.164	<0.000437	57.9	30-130			
Acenaphthene	0.0988	0.00067	"	0.164	<0.000304	60.2	30-130			
Naphthalene	0.0844	0.00201	"	0.164	<0.00145	51.4	30-130			
Indeno(1,2,3-cd)pyrene	0.144	0.00067	"	0.164	<0.000627	87.8	30-130			
Fluorene	0.112	0.00067	"	0.164	<0.000286	68.2	30-130			
Fluoranthene	0.118	0.00067	"	0.164	0.000739	71.5	30-130			
Dibenz(a,h)anthracene	0.182	0.00067	"	0.164	<0.000614	111	30-130			

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 L658117 - 3550B

MS (L 91883-MS-L658117)		Source: 91883			Prepared: 01/12/2023 Analyzed: 01/12/2023					
Chrysene	0.13	0.00067	mg/Kg	0.164	<0.000624	79.2	30-130			
1-Methylnaphthalene	0.0878	0.00201	"	0.164	<0.00109	53.5	30-130			
Benzo(a)pyrene	0.131	0.00067	"	0.164	<0.000468	79.8	30-130			
Anthracene	0.119	0.00067	"	0.164	<0.000334	72.5	30-130			
Pyrene	0.114	0.00067	"	0.164	<0.000643	69.5	30-130			
2-Methylnaphthalene	0.0891	0.00201	"	0.164	<0.00194	54.3	30-130			
Benzo(b)fluoranthene	0.134	0.00067	"	0.164	<0.000585	81.7	30-130			
Benzo(a)anthracene	0.113	0.00067	"	0.164	<0.000493	68.9	30-130			
Surrogate: Nitrobenzene-d5	51.3		"	0.329	143	51.3	29-110			
Surrogate: 4-Terphenyl-d14	55		"	0.329	163	55	33-122			
Surrogate: 2-Fluorobiphenyl	42.5		"	0.329	117	42.5	33-115			

LCS (LCS-L658117)		Prepared: 01/12/2023 Analyzed: 01/12/2023								
Chrysene	0.128	0.00067	mg/Kg	0.167		76.6	30-130			
Dibenz(a,h)anthracene	0.197	0.00067	"	0.167		118	30-130			
Fluoranthene	0.117	0.00067	"	0.167		70	30-130			
Fluorene	0.12	0.00067	"	0.167		71.8	30-130			
Indeno(1,2,3-cd)pyrene	0.155	0.00067	"	0.167		92.8	30-130			
Naphthalene	0.0971	0.00201	"	0.167		58.1	30-130			
Benzo(k)fluoranthene	0.12	0.00067	"	0.167		71.8	30-130			
Pyrene	0.115	0.00067	"	0.167		68.8	30-130			
Benzo(a)pyrene	0.132	0.00067	"	0.167		79	30-130			
Benzo(a)anthracene	0.114	0.00067	"	0.167		68.2	30-130			
Anthracene	0.122	0.00067	"	0.167		73	30-130			
Acenaphthene	0.109	0.00067	"	0.167		65.2	30-130			
2-Methylnaphthalene	0.102	0.00201	"	0.167		61	30-130			
1-Methylnaphthalene	0.0998	0.00201	"	0.167		59.7	30-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Johnson PM C #29-8

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 L658117 - 3550B										
LCS (LCS-L658117)					Prepared: 01/12/2023 Analyzed: 01/12/2023					
Benzo(b)fluoranthene	0.135	0.00067	mg/Kg	0.167		80.8	30-130			
Surrogate: Nitrobenzene-d5	57.3		"	0.333		57.3	29-110			
Surrogate: 4-Terphenyl-d14	57		"	0.333		57	33-122			
Surrogate: 2-Fluorobiphenyl	51.9		"	0.333		51.9	33-115			
LRB (LRB-L658117)					Prepared: 01/12/2023 Analyzed: 01/12/2023					
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	52.5		"	0.333		52.5	29-110			
Surrogate: 4-Terphenyl-d14	52.8		"	0.333		52.8	33-122			
Surrogate: 2-Fluorobiphenyl	49.5		"	0.333		49.5	33-115			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Johnson PM C #29-8

Notes and Definitions

U Sample is Non-Detect.

J Estimated Value. Analyte below reported quantitation limit.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



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