

Wellhead Closure Checklist						
COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form						
Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure
Site Name & COGCC Facility Number: Spike State CC #30-20		Date: 03/30/23				Remediation Project #: 26813
Associated Wells: 05-123-25434		Age of Site: Years				Number of Photos Attached: 1
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)					40.283074 / -104.484568	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)						
Good Condition						
USCS Soil Type: SM				Estimated Depth to Groundwater: Approx. 20-40'		
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	05-123-25434					
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/Staining					
PID Readings	0.4	0.5	0.5	0.5	0.8	
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01	
Photo Number(s)	See photolog					
Other observations regarding wellheads:						
Well casing cut/capped following assessment.						
Summary						
Was impacted soil identified?						
<input checked="" type="checkbox"/> 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: 0.8				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: N/A				Volume of soil removed:		
Is additional investigation required?						
Was groundwater encountered during the investigation?						
<input checked="" type="checkbox"/> 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:						

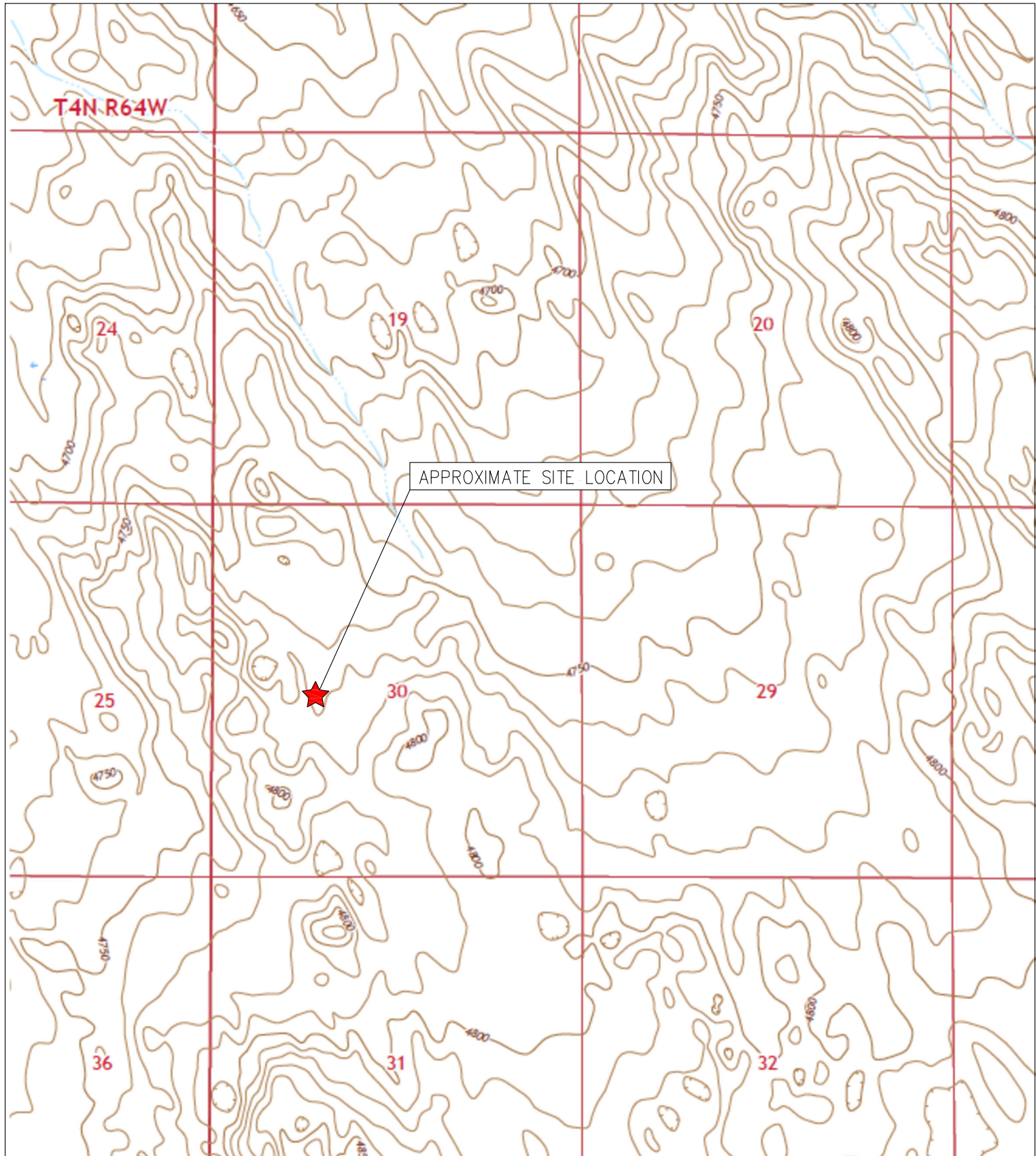


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
SPIKE STATE CC #30-20
CLOSURE ASSESSMENT
40.283074 / -104.484568
NE¼ SW¼ SEC.30 T4N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-25434
REMEDATION # 26813



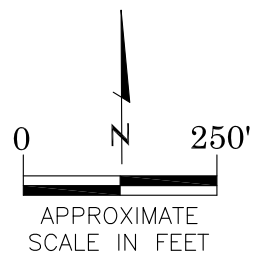
EAGLE
ENVIRONMENTAL
CONSULTING, LLC

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



LEGEND

- FORMER SPIKE STATE CC #30-20 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



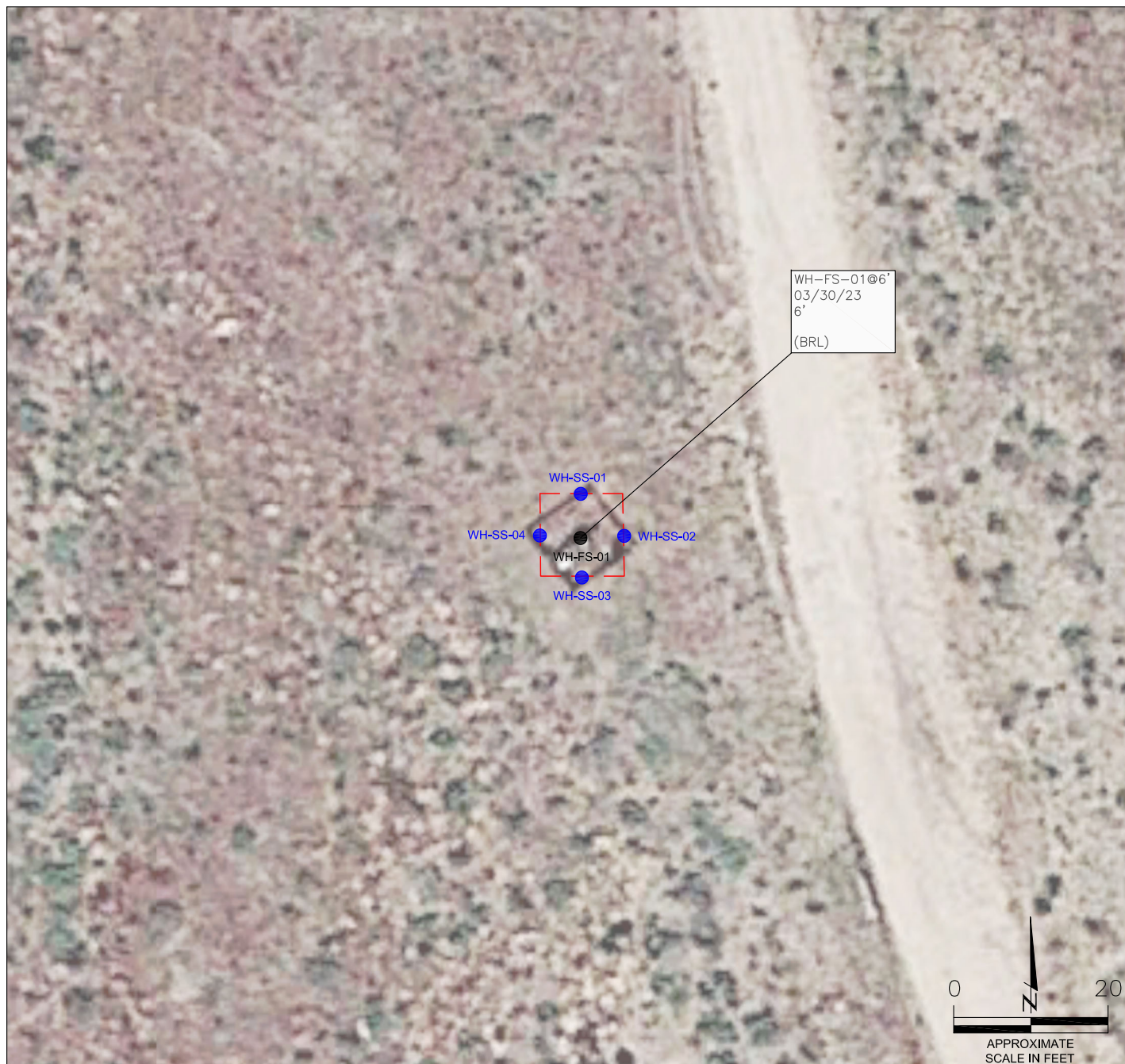
AERIAL SITE LOCATION MAP
 SPIKE STATE CC #30-20
 CLOSURE ASSESSMENT
 40.283074 / -104.484568
 NE¼ SW¼ SEC.30 T4N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-25434
 REMEDIATION # 26813

FIGURE NO.
2

DRAWN BY:
CT



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LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- 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 ECMC TABLE 915-1 REGULATORY LIMITS.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SOIL ANALYTICAL MAP
SPIKE STATE CC #30-20
CLOSURE ASSESSMENT
40.283074 / -104.484568
NE¼ SW¼ SEC.30 T4N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-25434
REMEDATION # 26813

FIGURE NO.
3

DRAWN BY:
TC





TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
SPIKE STATE CC #30-20
CLOSURE ASSESSMENT
40.283074 / -104.484568
NE¼ SW¼ SEC.30 T4N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-25434
REMEDATION # 26813

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.283091 / -104.484582)	03/30/23	5	0.4	N
WH-SS-02 @ 5' (40.283076 / -104.484562)	03/30/23	5	0.5	N
WH-SS-03 @ 5' (40.283059 / -104.484581)	03/30/23	5	0.5	N
WH-SS-04 @ 5' (40.283076 / -104.484601)	03/30/23	5	0.5	N
WH-FS-01 @ 6' (40.283076 / -104.484581)	03/30/23	6	0.8	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
SPIKE STATE CC #30-20
CLOSURE ASSESSMENT
40.283074 / -104.484568
NE¼ SW¼ SEC.30 T4N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-25434
REMEDATION # 26813

Sample Location				WH-FS-01 @ 6'
(Latitude / Longitude)				(40.283076 / -104.484581)
Sample Date				3/30/2023
Sample Depth				6'
PID Reading (ppm-v)				0.8
Regulatory Limits				
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	
VOLATILE ORGANIC COMPOUNDS				
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	--	<25.0
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	0.00042
Fluorene	mg/kg	240	0.54	<0.00067
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	--	<0.0990
pH	standard unit	6-8.3	--	7.87
Sodium Adsorption Ratio (SAR)	--	<6	--	0.858
Specific Conductance (EC)	mmhos/cm	<4	--	0.213
ECMC - Energy & Carbon Management Commission				
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		
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 ECMC Table 915-1 Regulatory Limits.				



ATTACHMENT A

Photo Log

Spike State CC #30-20

API # 05-123-25434

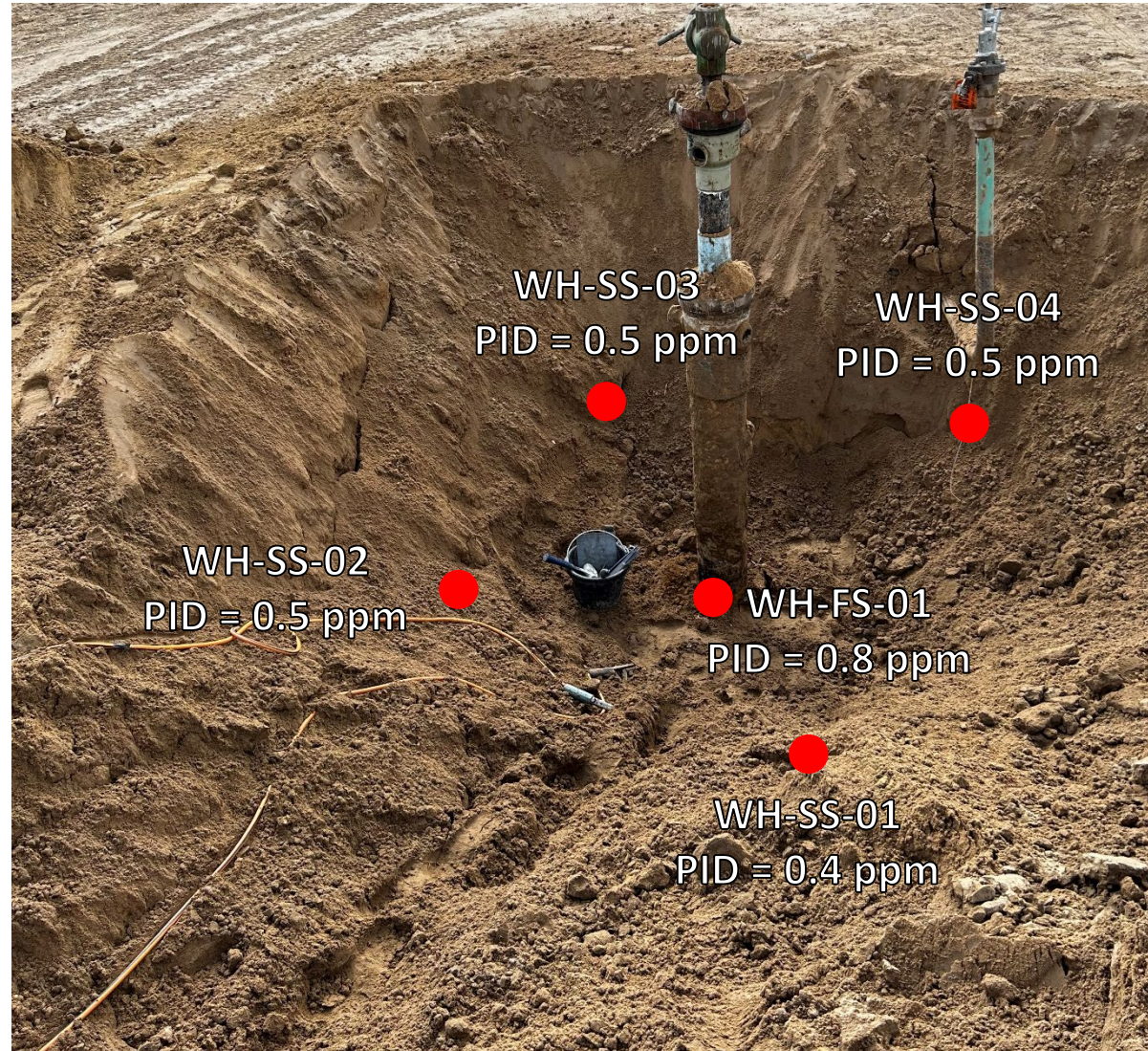
Remediation # 26813

Closure Assessment

March 2023



Wellhead Excavation – 03/30/23



Looking south-southwest

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



April 14, 2023

Eagle Environmental Consulting, LLC

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Spike State CC #30-20

Project Number - [none]

Attached are your analytical results for Noble - Spike State CC #30-20 received by Origins Laboratory, Inc. March 30, 2023. This project is associated with Origins project number Y303796-01.

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, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y303796-01	Soil	March 30, 2023 10:48	03/30/2023 15:25

Origins Laboratory, Inc.



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

Jordan A. Bynon, Project Manager

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

[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, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4303796

Client: Eagle Environ

Client Project ID: Spike St CC #30-20

Checklist Completed by: JH1 EHS

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

Date/time completed: 3/30

Airbill #: 29

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

Cooler Number/Temperature: 1/1 °C 1 °C 1 °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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JH Date/Time Reviewed 3/31-23

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, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

WH-FS-01@6'

3/30/2023 10:48:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303796-01 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0990	mg/L	1	B3D0307	04/03/2023	04/04/2023
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3C3115	03/31/2023	04/03/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	87.8 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3C3144	03/31/2023	04/03/2023	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	107 %	70-130	"	"	"
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Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

WH-FS-01@6'

3/30/2023 10:48:00AM

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

Origins Laboratory, Inc.
Y303796-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	102 %		70-130			B3C31 44	03/31/2023	04/03/2023	
Surrogate: 4-Bromofluorobenzene	105 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	0.833		0.499	meq/L	10	[CALC]	04/03/2023	04/05/2023	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	0.641		0.435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L675327	04/11/2023	04/12/2023	
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	0.00042	0.000394	0.00067	"	"	"	"	"	J

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

WH-FS-01@6'

3/30/2023 10:48:00AM

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

Waypoint Analytical, LLC.
Y303796-01 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L675327	04/11/2023	04/12/2023
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	40.2 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	56.5 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	36.6 %	29-110	"	"	"

pH in Soil by 9045D

pH	7.87	pH Units	1	B3D0316	04/03/2023	04/04/2023
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SAR by 20B Saturated Paste

SAR	0.858	SAR	1	B3D0311	04/03/2023	04/05/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.213	0.00500	mmhos/cm	1	B3D0316	04/03/2023	04/04/2023
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Eagle Environmental Consulting, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3115 - EPA 3580										
Blank (B3C3115-BLK1)					Prepared: 03/31/2023 Analyzed: 04/03/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	20		"	24.9		78.7	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3115 - EPA 3580										
LCS (B3C3115-BS1)					Prepared: 03/31/2023 Analyzed: 04/03/2023					
Diesel (C10-C28)	824	50.0	mg/kg	1000		82.4	70-130			
Residual Range Organics (C28-C40)	803	200	"	1000		80.3	70-130			
Surrogate: o-Terphenyl	40		"	49.8		80.3	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3115 - EPA 3580

Matrix Spike (B3C3115-MS1)		Source: Y303786-01			Prepared: 03/31/2023 Analyzed: 04/03/2023					
Diesel (C10-C28)	826	50.0	mg/kg	1000	ND	82.6	70-130			
Residual Range Organics (C28-C40)	822	200	"	1000	ND	82.2	70-130			
Surrogate: o-Terphenyl	45		"	49.8		90.3	50-150			

Origins Laboratory, Inc.



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

Jordan A. Bynon, Project Manager

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3115 - EPA 3580										
Matrix Spike Dup (B3C3115-MSD1)		Source: Y303786-01			Prepared: 03/31/2023 Analyzed: 04/03/2023					
Diesel (C10-C28)	824	50.0	mg/kg	1000	ND	82.4	70-130	0.294	35	
Residual Range Organics (C28-C40)	816	200	"	1000	ND	81.6	70-130	0.688	35	
Surrogate: o-Terphenyl	46		"	49.8		92.4	50-150			

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3144 - EPA 5030 (soil)										
Blank (B3C3144-BLK1)					Prepared: 03/31/2023 Analyzed: 04/03/2023					
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	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3144 - EPA 5030 (soil)										
LCS (B3C3144-BS1)					Prepared: 03/31/2023 Analyzed: 04/03/2023					
1,2,4-Trimethylbenzene	0.113	0.00200	mg/kg	0.100		113	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100		107	70-130			
Benzene	0.0889	0.00200	"	0.100		88.9	70-130			
Ethylbenzene	0.112	0.00200	"	0.100		112	70-130			
Naphthalene	0.105	0.00380	"	0.100		105	70-130			
Toluene	0.0957	0.00200	"	0.100		95.7	70-130			
o-Xylene	0.101	0.00200	"	0.100		101	70-130			
m,p-Xylene	0.203	0.00400	"	0.200		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.7	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		111	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3144 - EPA 5030 (soil)										
Matrix Spike (B3C3144-MS1)		Source: Y303786-01			Prepared: 03/31/2023 Analyzed: 04/03/2023					
1,2,4-Trimethylbenzene	0.103	0.00200	mg/kg	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.0975	0.00200	"	0.100	ND	97.5	70-130			
Benzene	0.0853	0.00200	"	0.100	ND	85.3	70-130			
Ethylbenzene	0.101	0.00200	"	0.100	ND	101	70-130			
Naphthalene	0.103	0.00380	"	0.100	ND	103	70-130			
Toluene	0.0903	0.00200	"	0.100	ND	90.3	70-130			
o-Xylene	0.0904	0.00200	"	0.100	ND	90.4	70-130			
m,p-Xylene	0.183	0.00400	"	0.200	ND	91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3C3144 - EPA 5030 (soil)										
Matrix Spike Dup (B3C3144-MSD1)			Source: Y303786-01		Prepared: 03/31/2023 Analyzed: 04/03/2023					
1,2,4-Trimethylbenzene	0.0972	0.00200	mg/kg	0.100	ND	97.2	70-130	5.77	20	
1,3,5-Trimethylbenzene	0.0920	0.00200	"	0.100	ND	92.0	70-130	5.85	20	
Benzene	0.0827	0.00200	"	0.100	ND	82.7	70-130	3.09	20	
Ethylbenzene	0.0957	0.00200	"	0.100	ND	95.7	70-130	5.19	20	
Naphthalene	0.102	0.00380	"	0.100	ND	102	70-130	1.21	20	
Toluene	0.0866	0.00200	"	0.100	ND	86.6	70-130	4.23	20	
o-Xylene	0.0862	0.00200	"	0.100	ND	86.2	70-130	4.76	20	
m,p-Xylene	0.174	0.00400	"	0.200	ND	86.8	70-130	5.37	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 B3D0307 - DTPA Sorbitol Preparation

Blank (B3D0307-BLK1)

Prepared: 04/03/2023 Analyzed: 04/04/2023

Boron ND 0.100 mg/L

Duplicate (B3D0307-DUP1)

Source: Y303753-04

Prepared: 04/03/2023 Analyzed: 04/04/2023

Boron 2.81 0.0990 mg/L 2.44 14.1 50

Batch B3D0311 - Saturated Paste Metals

Blank (B3D0311-BLK1)

Prepared: 04/03/2023 Analyzed: 04/05/2023

SAR 0.00 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

Duplicate (B3D0311-DUP1)

Source: Y303786-01

Prepared: 04/03/2023 Analyzed: 04/05/2023

SAR 0.00 SAR 0.313 200 200

Calcium PPM 22.0 10.0 mg/L 22.6 2.40 50

Magnesium PPM 11.3 10.0 " 11.4 0.946 50

Sodium PPM 7.84 10.0 " 7.31 7.01 50

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3D0316 - Saturated Paste pH/EC										
Blank (B3D0316-BLK1)					Prepared: 04/03/2023 Analyzed: 04/04/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B3D0316-DUP1)					Source: Y303786-01 Prepared: 04/03/2023 Analyzed: 04/04/2023					
pH	7.30		pH Units		8.03		9.52	25		
Specific Conductance (EC)	0.243	0.00500	mmhos/cm		0.232		4.38	25		

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 L675327 - 3550B

MSD (L 94143-MSD-L675327)		Source: 94143			Prepared: 04/11/2023 Analyzed: 04/12/2023					
2-Methylnaphthalene	0.0894	0.00201	mg/Kg	0.163	<0.00194	54.8	30-130	6.8	30	
Fluorene	0.0916	0.00067	"	0.163	<0.000286	56.1	30-130	6.1	30	
Pyrene	0.101	0.00067	"	0.163	<0.000643	61.9	30-130	8.5	30	
Indeno(1,2,3-cd)pyrene	0.0835	0.00067	"	0.163	<0.000627	51.2	30-130	3.5	30	
Fluoranthene	0.101	0.00067	"	0.163	<0.000394	61.9	30-130	8.5	30	
Dibenz(a,h)anthracene	0.0901	0.00067	"	0.163	<0.000614	55.2	30-130	3.8	30	
Chrysene	0.0977	0.00067	"	0.163	<0.000624	59.9	30-130	8.1	30	
Naphthalene	0.0864	0.00201	"	0.163	<0.00145	53	30-130	6.9	30	
1-Methylnaphthalene	0.0882	0.00201	"	0.163	<0.00109	54.1	30-130	7.5	30	
Benzo(k)fluoranthene	0.0866	0.00067	"	0.163	<0.000437	53.1	30-130	12.6	30	
Acenaphthene	0.0917	0.00067	"	0.163	<0.000304	56.2	30-130	4.2	30	
Anthracene	0.095	0.00067	"	0.163	<0.000334	58.2	30-130	7.1	30	
Benzo(a)anthracene	0.102	0.00067	"	0.163	<0.000493	62.5	30-130	8.4	30	
Benzo(a)pyrene	0.106	0.00067	"	0.163	<0.000468	65	30-130	7.2	30	
Benzo(b)fluoranthene	0.0825	0.00067	"	0.163	<0.000585	50.6	30-130	12.3	30	
Surrogate: 2-Fluorobiphenyl	48.3		"	0.327	78.5	48.3	33-115			
Surrogate: Nitrobenzene-d5	46.7		"	0.327	96.4	46.7	29-110			
Surrogate: 4-Terphenyl-d14	55.3		"	0.327	182	55.3	33-122			

MS (L 94143-MS-L675327)		Source: 94143			Prepared: 04/11/2023 Analyzed: 04/12/2023					
Benzo(k)fluoranthene	0.0983	0.00067	mg/Kg	0.166	<0.000437	59.2	30-130			
Acenaphthene	0.0957	0.00067	"	0.166	<0.000304	57.6	30-130			
Naphthalene	0.0926	0.00201	"	0.166	<0.00145	55.7	30-130			
Indeno(1,2,3-cd)pyrene	0.0806	0.00067	"	0.166	<0.000627	48.5	30-130			
Fluorene	0.0974	0.00067	"	0.166	<0.000286	58.6	30-130			
Fluoranthene	0.11	0.00067	"	0.166	<0.000394	66.2	30-130			
Dibenz(a,h)anthracene	0.0936	0.00067	"	0.166	<0.000614	56.3	30-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 L675327 - 3550B

MS (L 94143-MS-L675327)		Source: 94143			Prepared: 04/11/2023 Analyzed: 04/12/2023					
Chrysene	0.106	0.00067	mg/Kg	0.166	<0.000624	63.8	30-130			
1-Methylnaphthalene	0.0951	0.00201	"	0.166	<0.00109	57.2	30-130			
Benzo(a)pyrene	0.114	0.00067	"	0.166	<0.000468	68.6	30-130			
Anthracene	0.102	0.00067	"	0.166	<0.000334	61.4	30-130			
Pyrene	0.11	0.00067	"	0.166	<0.000643	66.2	30-130			
2-Methylnaphthalene	0.0957	0.00201	"	0.166	<0.00194	57.6	30-130			
Benzo(b)fluoranthene	0.0934	0.00067	"	0.166	<0.000585	56.2	30-130			
Benzo(a)anthracene	0.111	0.00067	"	0.166	<0.000493	66.8	30-130			
Surrogate: Nitrobenzene-d5	49		"	0.332	96.4	49	29-110			
Surrogate: 4-Terphenyl-d14	57.8		"	0.332	182	57.8	33-122			
Surrogate: 2-Fluorobiphenyl	50		"	0.332	78.5	50	33-115			

LCS (LCS-L675327)		Prepared: 04/11/2023 Analyzed: 04/12/2023								
Chrysene	0.116	0.00067	mg/Kg	0.167		69.4	30-130			
Dibenz(a,h)anthracene	0.114	0.00067	"	0.167		68.2	30-130			
Fluoranthene	0.124	0.00067	"	0.167		74.2	30-130			
Fluorene	0.11	0.00067	"	0.167		65.8	30-130			
Indeno(1,2,3-cd)pyrene	0.098	0.00067	"	0.167		58.6	30-130			
Naphthalene	0.105	0.00201	"	0.167		62.8	30-130			
Benzo(k)fluoranthene	0.114	0.00067	"	0.167		68.2	30-130			
Pyrene	0.125	0.00067	"	0.167		74.8	30-130			
Benzo(a)pyrene	0.127	0.00067	"	0.167		76	30-130			
Benzo(a)anthracene	0.122	0.00067	"	0.167		73	30-130			
Anthracene	0.115	0.00067	"	0.167		68.8	30-130			
Acenaphthene	0.109	0.00067	"	0.167		65.2	30-130			
2-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			
1-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			

Origins Laboratory, Inc.



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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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 L675327 - 3550B

LCS (LCS-L675327)

Prepared: 04/11/2023 Analyzed: 04/12/2023

Benzo(b)fluoranthene	0.104	0.00067	mg/Kg	0.167		62.2	30-130			
Surrogate: Nitrobenzene-d5	61.8		"	0.333		61.8	29-110			
Surrogate: 4-Terphenyl-d14	71.4		"	0.333		71.4	33-122			
Surrogate: 2-Fluorobiphenyl	64.5		"	0.333		64.5	33-115			

LRB (LRB-L675327)

Prepared: 04/11/2023 Analyzed: 04/12/2023

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	62.7		"	0.333		62.7	29-110			
Surrogate: 4-Terphenyl-d14	72.6		"	0.333		72.6	33-122			
Surrogate: 2-Fluorobiphenyl	63.6		"	0.333		63.6	33-115			

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Spike State CC #30-20

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.

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

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