

Wellhead Closure Checklist

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

Additional attachments (optional):	Pit Closure	Tank Battery Closure	Flowline Closure	Partially Buried Vault Closure
Site Name & COGCC Facility Number: KUMMER PC LG #23-9942		Date: 4-4-22		Remediation Project #: 22346
Associated Wells: 05-123-32789		Age of Site: YEARS		Number of Photos Attached: 1
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.652980, -104.180050				Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) GOOD				
USCS Soil Type: SW		Estimated Depth to Groundwater: > 20'		
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	05-123-32789			
Age	YEARS			
Condition of surface around wellhead	GOOD - PER CREW			
PID Readings	N/A - EXCAVATED UPON ARRIVAL			
Condition of subsurface (excluding present PID Readings)	GOOD - NO STAINING OR ODOUR			
PID Readings	1.7	2.8	0.4	1.6
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04
Photo Number(s)	SEE PHOTOS			
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: 4.4		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? 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:				



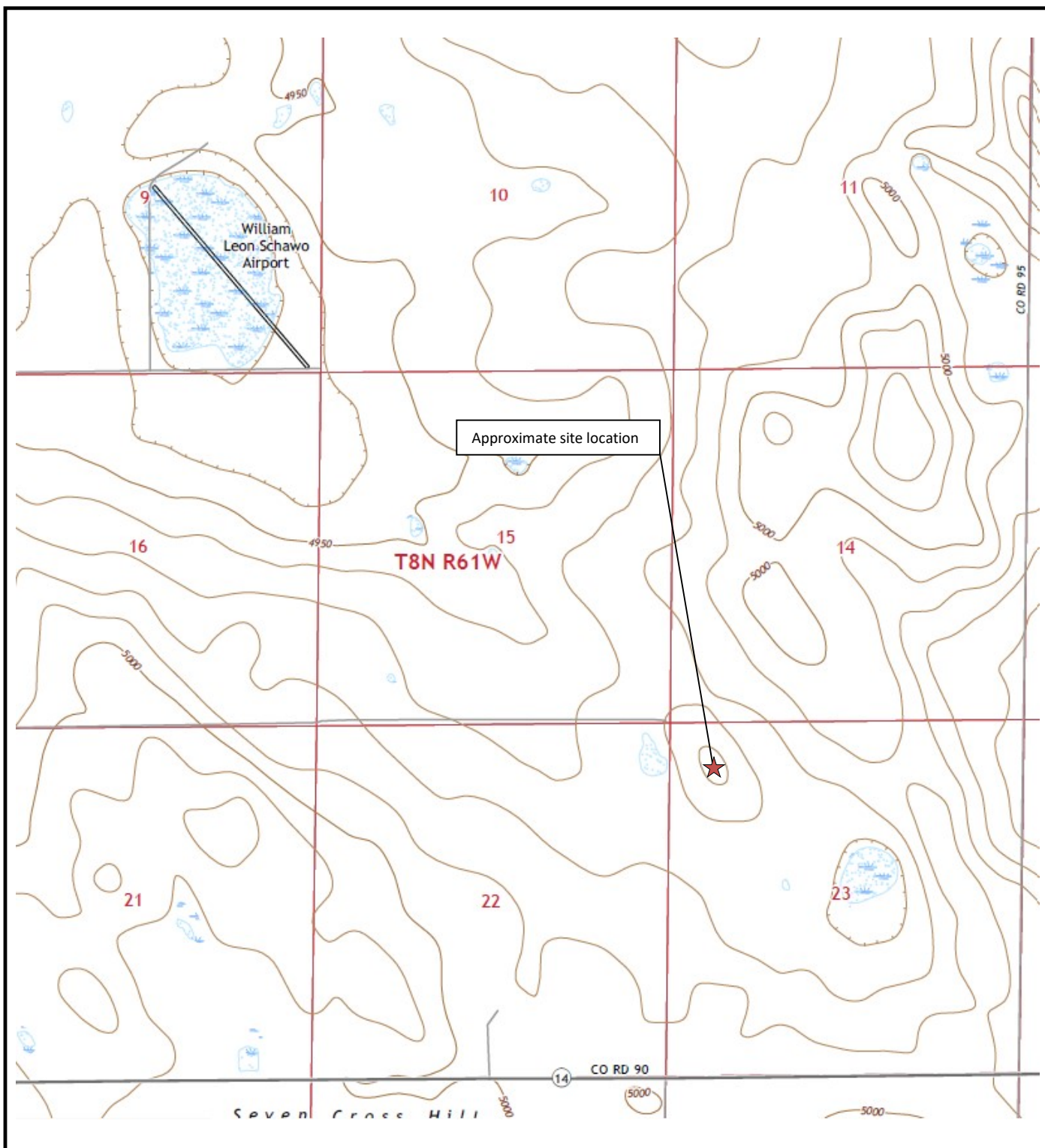
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map

Figure 4: Polycyclic Aromatic Hydrocarbons Map



Topographic Site Location Map

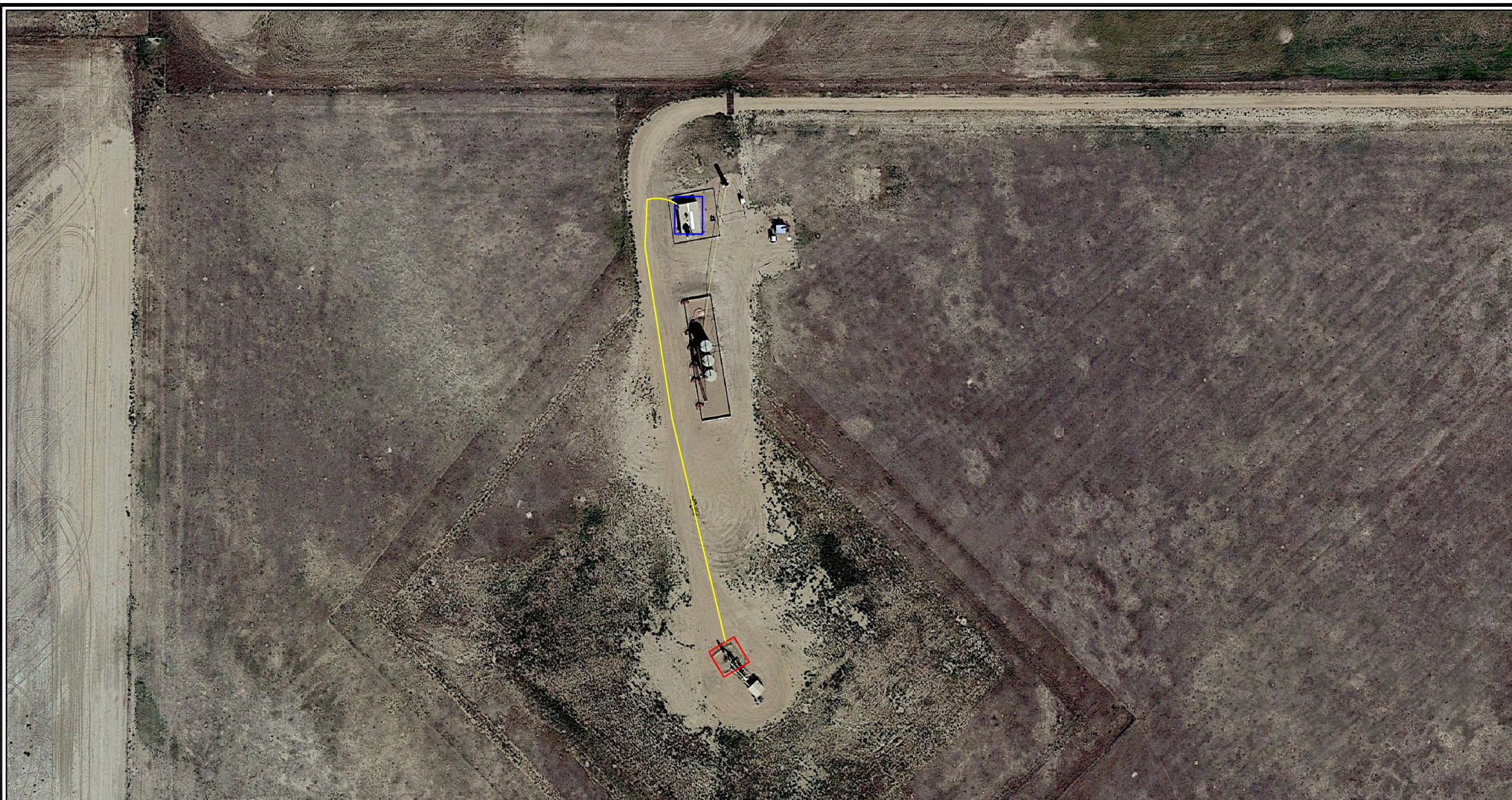
Kummer PC LE #23-99HZ
 Closure Assessment
 40.652980 / -104.180050
 NW¼ NW¼ SEC.23 T8N R61W 6PM
 Weld County, Colorado
 API # 05-123-32789
 Remediation # 22346



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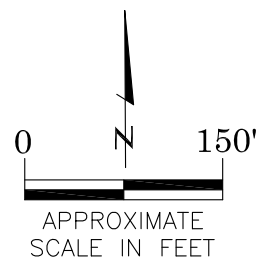
Source: USGS 7.5 Minute Topographic
 Map, Keota NW, CO Quadrangle 2022

Figure 1



LEGEND

- FORMER KUMMER PC LE #23-99HZ WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP
 KUMMER PC LE #23-99HZ
 CLOSURE ASSESSMENT
 40.625980 / -104.180050
 NW¼ NW¼ SEC.23 T8N R61W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-32789
 REMEDIATION # 22346

DATE: 05/05/22

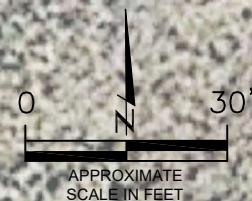
FIG. NO. 2
 DRAWN BY: RTG



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

WH-FS-01@5'
04/04/22
5'
B = <0.00200
T = <0.00200
E = <0.00200
X = <0.00200
G = <0.200
D = 41.7
R = <100
1,2,4-TMB = <0.00200
1,3,5-TMB = <0.00200
Brn = 0.355
EC = 0.748
SAR = 1.11
pH = 7.76

WH-SS-01
WH-FS-01
WH-SS-02
WH-SS-03
WH-SS-04



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)

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

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 WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** CONTAIN CONCENTRATIONS THAT EXCEED COGCC TABLE 915-1 REGULATORY LIMITS FOR THAT COMPOUND.

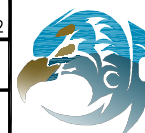
COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

SOIL ANALYTICAL MAP
KUMMER PC LE #23-99HZ
CLOSURE ASSESSMENT
40.625980 / -104.180050
NW¼ NW¼ SEC.23 T8N R61W 6PM
WELD COUNTY, COLORADO
API # 05-123-32789
REMEDIAL # 22346

DATE:
05/05/22

DRAWN BY:
RTG

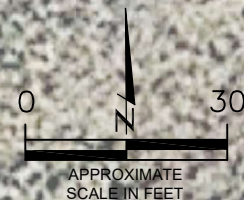
FIG.
NO. 3



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

WH-FS-01@5'
04/04/22
5'
ND = <0.00335
1-Methylnaphthalene = ND
2-Methylnaphthalene = ND
Acenaphthene = ND
Anthracene = ND
Benzo(a)anthracene = ND
Benzo(a)pyrene = ND
Benzo(b)fluoranthene = ND
Benzo(k)fluoranthene = ND
Chrysene = ND
Dibenzo(a,h)anthracene = ND
Fluoranthene = ND
Fluorene = ND
Indeno(1,2,3-CD)pyrene = ND
Naphthalene = ND
Pyrene = ND

WH-SS-01
WH-SS-02
WH-FS-01
WH-SS-04
WH-SS-03



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 SAMPLE COLLECTED
APPROXIMATE DEPTH

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

ND = NON-DETECT

NOTES:

VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** CONTAIN CONCENTRATIONS EXCEEDING COGCC TABLE 915-1 REGULATORY LIMITS.

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

POLYCYCLIC AROMATIC HYDROCARBONS MAP

KUMMER PC LE #23-99HZ
CLOSURE ASSESSMENT
40.625980 / -104.180050
NW¼ NW¼ SEC.23 T8N R61W 6PM
WELD COUNTY, COLORADO
API # 05-123-32789
REMEDIAION # 22346

DATE:
05/05/22

DRAWN BY:
RTG

FIG.
NO. 4



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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
KUMMER PC LE #23-99HZ
CLOSURE ASSESSMENT
40.652980 / -104.180050
NW1/4 NW1/4 SEC.23 T8N R61W 6PM
WELD COUNTY, COLORADO
API # 05-123-32789
REMEDATION # 22346

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 4' (40.652996 / -104.180056)	04/04/22	4	1.7	N
WH-SS-02 @ 4' (40.652983 / -104.180024)	04/04/22	4	2.8	N
WH-SS-03 @ 4' (40.652968 / -104.180044)	04/04/22	4	0.4	N
WH-SS-04 @ 4' (40.652987 / -104.180074)	04/04/22	4	1.6	N
WH-FS-01 @ 5' (40.652985 / -104.180046)	04/04/22	5	4.4	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
KUMMER PC LE #23-99HZ
CLOSURE ASSESSMENT
40.652980 / -104.180050
NW1/4 NW1/4 SEC.23 T8N R61W 6PM
WELD COUNTY, COLORADO
API # 05-123-32789
REMEDIATION # 22346

Sample Location			WH-FS-01 @ 5'	
(Latitude / Longitude)			(40.652985 / -104.180046)	
Sample Date			4/4/2022	
Sample Depth			5'	
PID Reading (ppm-v)			4.4	
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	--	41.7
TPH-RRO	mg/kg	500	--	<100
Polycyclic Aromatics Hydrocarbons				
1-Methyl-naphthalene	mg/kg	18	0.006	<0.00335
2-Methyl-naphthalene	mg/kg	24	0.019	<0.00335
Acenaphthene	mg/kg	360	0.55	<0.00335
Anthracene	mg/kg	1800	5.8	<0.00335
Benzo(a)-anthracene	mg/kg	1.1	0.011	<0.00335
Benzo(a)-pyrene	mg/kg	0.11	0.24	<0.00335
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	<0.00335
Benzo(k)-fluoranthene	mg/kg	11	2.9	<0.00335
Chrysene	mg/kg	110	9	<0.00335
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00335
Fluoranthene	mg/kg	240	8.9	<0.00335
Fluorene	mg/kg	240	0.54	<0.00335
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00335
Naphthalene	mg/kg	2	0.0038	<0.00335
Pyrene	mg/kg	180	1.3	<0.00335
Soil Suitability (Inorganics)				
Boron	mg/L	2	--	0.355
pH	standard unit	6-8.3	--	7.76
Sodium Adsorption Ratio (SAR)	--	<6	--	1.11
Specific Conductance (EC)	mmhos/cm	<4	--	0.748
COGCC = Colorado Oil and Gas Conservation Commission mg/kg = milligrams per kilogram mmhos/cm = millimhos per centimeter PID = Photoionization Detector ppm-v = parts per million by volume mg/L = milligrams per liter 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.				
VOCs = Volatile Organic Compounds RSSLs = Residential Soil Screening Levels GSSLs = Protection of Groundwater Soil Screening Levels TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics				



ATTACHMENT A

Photo Log

Kummer PC LE #23-99HZ

API # 05-123-32789

Remediation # 22346

Closure Assessment

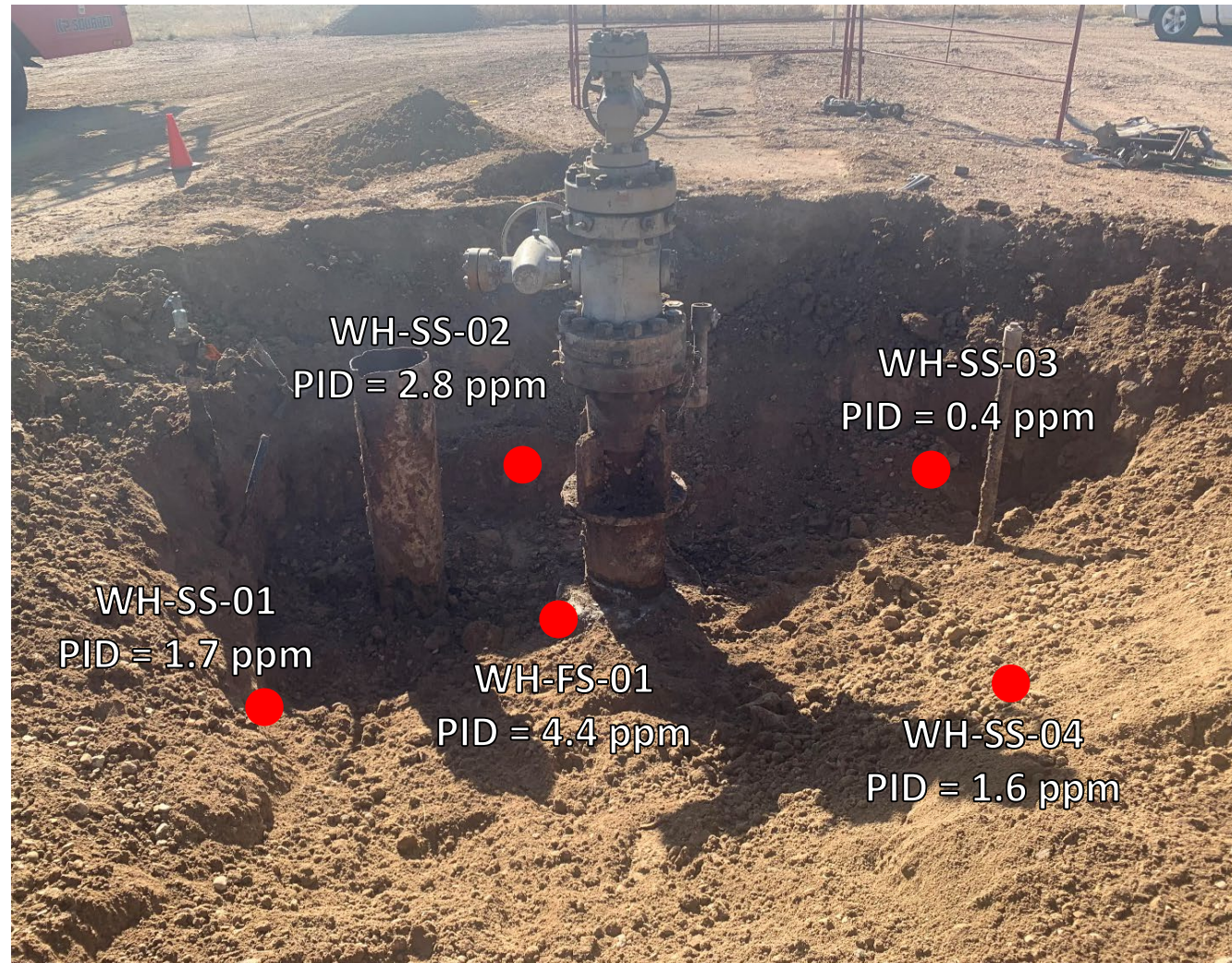
April 2022



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Wellhead Excavation – 04/04/22



Looking southeast

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



April 14, 2022

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Kummer PC #LE23-99HZ Project Number - [none]

Attached are your analytical results for Noble - Kummer PC #LE23-99HZ received by Origins Laboratory, Inc. April 04, 2022. This project is associated with Origins project number Y204064-01.

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 - Kummer PC #LE23-99HZ

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@5'	Y204064-01	Soil	April 4, 2022 9:20	04/04/2022 16:57

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 - Kummer PC #LE23-99HZ

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 7204064

Client: Eagle

Client Project ID: Kummer PC LE23-99HZ

Checklist Completed by: SG

Shipped Via: HD

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

Date/time completed: 4/5/22

Airbill #: N/A

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

☐ Water

☐ Other:

(Describe)

Cooler Number/Temperature: 1 12.7 °C

1 °C

1 °C

1 °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⁾ ?	<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 (Project Manager) JB

Date/Time Reviewed 4-6-22

Origins Laboratory, Inc.

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 - Kummer PC #LE23-99HZ

WH-FS-01@5'

4/4/2022 9:20:00AM

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

Origins Laboratory, Inc.
Y204064-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.355	0.0985	mg/L	1	B2D0611	04/06/2022	04/07/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	41.7	25.0	mg/kg	1	B2D0604	04/06/2022	04/12/2022	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	106 %	50-150			"	"	"	
------------------------	-------	--------	--	--	---	---	---	--

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2D0510	04/05/2022	04/10/2022	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	104 %	70-130			"	"	"	
Surrogate: Toluene-d8	100 %	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 - Kummer PC #LE23-99HZ

WH-FS-01@5'

4/4/2022 9:20:00AM

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

Origins Laboratory, Inc.
Y204064-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	95.4 %	70-130	B2D05 10	04/05/2022	04/10/2022
---------------------------------	--------	--------	-------------	------------	------------

Metals by Saturated Paste by EPA 6010

Calcium	4.08	0.499	meq/L	10	[CALC]	04/05/2022	04/06/2022
Magnesium	1.57	0.823	"	"	"	"	"
Sodium	1.86	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00182	0.00335	mg/Kg	5	L609643	04/08/2022	04/08/2022
2-Methylnaphthalene	ND	0.00323	0.00335	"	"	"	"	"
Acenaphthene	ND	0.00152	0.00335	"	"	"	"	"
Anthracene	ND	0.00167	0.00335	"	"	"	"	"
Benzo(a)anthracene	ND	0.00247	0.00335	"	"	"	"	"
Benzo(a)pyrene	ND	0.00234	0.00335	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.00293	0.00335	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00219	0.00335	"	"	"	"	"
Chrysene	ND	0.00312	0.00335	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00307	0.00335	"	"	"	"	"
Fluoranthene	ND	0.00197	0.00335	"	"	"	"	"
Fluorene	ND	0.00143	0.00335	"	"	"	"	"

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 - Kummer PC #LE23-99HZ

WH-FS-01@5'

4/4/2022 9:20:00AM

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

Waypoint Analytical, Inc.
Y204064-01 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.00314	0.00335	mg/Kg	5	L609643	04/08/2022	04/08/2022
Naphthalene	ND	0.00242	0.00335	"	"	"	"	"
Pyrene	ND	0.00322	0.00335	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	63 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	69.4 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	51.2 %		29-110			"	"	"

pH in Soil by 9045D

pH	7.76			pH Units	1	B2D0525	04/05/2022	04/06/2022
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SAR by 20B Saturated Paste

SAR	1.11			SAR	1	B2D0523	04/05/2022	04/06/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.748		0.00500	mmhos/cm	1	B2D0524	04/05/2022	04/06/2022
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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 - Kummer PC #LE23-99HZ

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 B2D0510 - EPA 5030 (soil)										
Blank (B2D0510-BLK1)					Prepared: 04/05/2022 Analyzed: 04/10/2022					
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	0.0100	"							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		97.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0510 - EPA 5030 (soil)										
LCS (B2D0510-BS1)					Prepared: 04/05/2022 Analyzed: 04/10/2022					
1,2,4-Trimethylbenzene	0.116	0.00200	mg/kg	0.100		116	70-130			
1,3,5-Trimethylbenzene	0.119	0.00200	"	0.100		119	70-130			
Benzene	0.108	0.00200	"	0.100		108	70-130			
Ethylbenzene	0.119	0.00200	"	0.100		119	70-130			
Naphthalene	0.116	0.0100	"	0.100		116	70-130			
Toluene	0.113	0.00200	"	0.100		113	70-130			
o-Xylene	0.118	0.00200	"	0.100		118	70-130			
m,p-Xylene	0.239	0.00400	"	0.200		119	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0510 - EPA 5030 (soil)										
Matrix Spike (B2D0510-MS1)		Source: Y204017-01			Prepared: 04/05/2022 Analyzed: 04/10/2022					
1,2,4-Trimethylbenzene	0.0994	0.00200	mg/kg	0.100	ND	99.4	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130			
Benzene	0.103	0.00200	"	0.100	ND	103	70-130			
Ethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130			
Naphthalene	0.0982	0.0100	"	0.100	0.00128	97.0	70-130			
Toluene	0.106	0.00200	"	0.100	ND	106	70-130			
o-Xylene	0.109	0.00200	"	0.100	ND	109	70-130			
m,p-Xylene	0.217	0.00400	"	0.200	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0510 - EPA 5030 (soil)										
Matrix Spike Dup (B2D0510-MSD1)		Source: Y204017-01			Prepared: 04/05/2022 Analyzed: 04/10/2022					
1,2,4-Trimethylbenzene	0.0944	0.00200	mg/kg	0.100	ND	94.4	70-130	5.22	20	
1,3,5-Trimethylbenzene	0.0980	0.00200	"	0.100	ND	98.0	70-130	5.34	20	
Benzene	0.0977	0.00200	"	0.100	ND	97.7	70-130	5.43	20	
Ethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130	6.37	20	
Naphthalene	0.0963	0.0100	"	0.100	0.00128	95.0	70-130	1.99	20	
Toluene	0.100	0.00200	"	0.100	ND	100	70-130	5.33	20	
o-Xylene	0.102	0.00200	"	0.100	ND	102	70-130	6.66	20	
m,p-Xylene	0.204	0.00400	"	0.200	ND	102	70-130	6.24	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0604 - EPA 3550B										
Blank (B2D0604-BLK1)					Prepared: 04/06/2022 Analyzed: 04/11/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	29		"	24.9		117	50-150			

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0604 - EPA 3550B

LCS (B2D0604-BS1)

Prepared: 04/06/2022 Analyzed: 04/11/2022

Diesel (C10-C28)	1150	50.0	mg/kg	1000		115	70-130			
Residual Range Organics (C28-C40)	1010	200	"	1000		101	70-130			
Surrogate: o-Terphenyl	57		"	49.8		115	50-150			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0604 - EPA 3550B

Matrix Spike (B2D0604-MS1)		Source: Y204045-04			Prepared: 04/06/2022 Analyzed: 04/12/2022					
Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	70-130			
Residual Range Organics (C28-C40)	913	200	"	1000	ND	91.3	70-130			
Surrogate: o-Terphenyl	51		"	49.8		103	50-150			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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 B2D0604 - EPA 3550B

Matrix Spike Dup (B2D0604-MSD1)		Source: Y204045-04			Prepared: 04/06/2022 Analyzed: 04/12/2022					
Diesel (C10-C28)	1130	50.0	mg/kg	1000	ND	113	70-130	7.46	35	
Residual Range Organics (C28-C40)	1020	200	"	1000	ND	102	70-130	11.3	35	
Surrogate: o-Terphenyl	54		"	49.8		109	50-150			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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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Saturated Paste - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2D0524 - NO PREP

Blank (B2D0524-BLK1)

Prepared: 04/05/2022 Analyzed: 04/06/2022

Specific Conductance (EC) 0.000800 0.00500 mmhos/cm

Duplicate (B2D0524-DUP1)

Source: Y204063-04

Prepared: 04/05/2022 Analyzed: 04/06/2022

Specific Conductance (EC) 0.321 0.00500 mmhos/cm 0.302 6.17 25

Batch B2D0525 - NO PREP

Duplicate (B2D0525-DUP1)

Source: Y204063-04

Prepared: 04/05/2022 Analyzed: 04/06/2022

pH 8.08 pH Units 8.11 0.371 25

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L609643 - 3550B

MSD (L 89835-MSD-L609643)		Source: 89835			Prepared: 04/08/2022 Analyzed: 04/08/2022					
Fluoranthene	0.0863	0.000394	mg/Kg	0.165	<0.000394	52.3	30-130	9.9	30	
Indeno(1,2,3-cd)pyrene	0.14	0.000627	"	0.165	<0.000627	84.8	30-130	9.7	30	
Acenaphthene	0.106	0.000304	"	0.165	0.00691	60	30-130	4.8	30	
Naphthalene	0.112	0.000484	"	0.165	0.00933	62.2	30-130	9.3	30	
Pyrene	0.133	0.000643	"	0.165	<0.000643	80.6	30-130	6.2	30	
Dibenz(a,h)anthracene	0.159	0.000614	"	0.165	<0.000614	96.3	30-130	17.8	30	
Chrysene	0.114	0.000624	"	0.165	<0.000624	69	30-130	11.1	30	
Fluorene	0.124	0.000286	"	0.165	0.01	69	30-130	5.8	30	
Benzo(b)fluoranthene	0.134	0.000585	"	0.165	<0.000585	81.2	30-130	9.3	30	
Benzo(a)pyrene	0.136	0.000468	"	0.165	<0.000468	82.4	30-130	15	30	
1-Methylnaphthalene	0.163	0.000364	"	0.165	0.0678	57.6	30-130	5.6	30	
Anthracene	0.124	0.000334	"	0.165	<0.000334	75.1	30-130	8.4	30	
2-Methylnaphthalene	0.235	0.000645	"	0.165	0.168	40.6	30-130	6.1	30	
Benzo(k)fluoranthene	0.104	0.000437	"	0.165	<0.000437	63	30-130	13.2	30	
Benzo(a)anthracene	0.127	0.000493	"	0.165	<0.000493	76.9	30-130	9.9	30	
Surrogate: Nitrobenzene-d5	51.8		"	0.33	157	51.8	29-110			
Surrogate: 4-Terphenyl-d14	89		"	0.33	256	89	33-122			
Surrogate: 2-Fluorobiphenyl	69.6		"	0.33	208	69.6	33-115			

MS (L 89835-MS-L609643)		Source: 89835			Prepared: 04/08/2022 Analyzed: 04/08/2022					
2-Methylnaphthalene	0.221	0.000645	mg/Kg	0.166	0.168	31.9	30-130			
Fluorene	0.117	0.000286	"	0.166	0.01	64.4	30-130			
1-Methylnaphthalene	0.154	0.000364	"	0.166	0.0678	51.9	30-130			
Pyrene	0.125	0.000643	"	0.166	<0.000643	75.3	30-130			
Indeno(1,2,3-cd)pyrene	0.127	0.000627	"	0.166	<0.000627	76.5	30-130			
Fluoranthene	0.0781	0.000394	"	0.166	<0.000394	47	30-130			
Dibenz(a,h)anthracene	0.133	0.000614	"	0.166	<0.000614	80.1	30-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L609643 - 3550B

MS (L 89835-MS-L609643)		Source: 89835			Prepared: 04/08/2022 Analyzed: 04/08/2022					
Acenaphthene	0.101	0.000304	mg/Kg	0.166	0.00691	56.6	30-130			
Benzo(k)fluoranthene	0.0911	0.000437	"	0.166	<0.000437	54.8	30-130			
Benzo(b)fluoranthene	0.122	0.000585	"	0.166	<0.000585	73.4	30-130			
Benzo(a)pyrene	0.117	0.000468	"	0.166	<0.000468	70.4	30-130			
Benzo(a)anthracene	0.115	0.000493	"	0.166	<0.000493	69.2	30-130			
Anthracene	0.114	0.000334	"	0.166	<0.000334	68.6	30-130			
Chrysene	0.102	0.000624	"	0.166	<0.000624	61.4	30-130			
Naphthalene	0.102	0.000484	"	0.166	0.00933	55.8	30-130			
Surrogate: Nitrobenzene-d5	54.6		"	0.331	157	54.6	29-110			
Surrogate: 2-Fluorobiphenyl	78.5		"	0.331	208	78.5	33-115			
Surrogate: 4-Terphenyl-d14	95.1		"	0.331	256	95.1	33-122			

LCS (LCS-L609643)

Prepared: 04/08/2022 Analyzed: 04/08/2022

Chrysene	0.102	0.000624	mg/Kg	0.167		61	30-130			
Fluoranthene	0.117	0.000394	"	0.167		70	30-130			
Fluorene	0.108	0.000286	"	0.167		64.6	30-130			
Indeno(1,2,3-cd)pyrene	0.13	0.000627	"	0.167		77.8	30-130			
Naphthalene	0.0997	0.000484	"	0.167		59.7	30-130			
Pyrene	0.118	0.000643	"	0.167		70.6	30-130			
Benzo(k)fluoranthene	0.0984	0.000437	"	0.167		58.9	30-130			
1-Methylnaphthalene	0.107	0.000364	"	0.167		64	30-130			
Benzo(a)pyrene	0.107	0.000468	"	0.167		64	30-130			
Benzo(a)anthracene	0.106	0.000493	"	0.167		63.4	30-130			
Anthracene	0.11	0.000334	"	0.167		65.8	30-130			
Acenaphthene	0.0979	0.000304	"	0.167		58.6	30-130			
2-Methylnaphthalene	0.103	0.000645	"	0.167		61.6	30-130			
Dibenz(a,h)anthracene	0.133	0.000614	"	0.167		79.6	30-130			

Origins Laboratory, Inc.



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Martin C Eckert III
Project Number: [none]
Project: Noble - Kummer PC #LE23-99HZ

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L609643 - 3550B

LCS (LCS-L609643)

Prepared: 04/08/2022 Analyzed: 04/08/2022

Benzo(b)fluoranthene	0.109	0.000585	mg/Kg	0.167		65.2	30-130			
Surrogate: Nitrobenzene-d5	51.6		"	0.333		51.6	29-110			
Surrogate: 4-Terphenyl-d14	83.7		"	0.333		83.7	33-122			
Surrogate: 2-Fluorobiphenyl	71.4		"	0.333		71.4	33-115			

LRB (LRB-L609643)

Prepared: 04/08/2022 Analyzed: 04/08/2022

Dibenz(a,h)anthracene	ND	0.00067	mg/Kg				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	50.7		"	0.333		50.7	29-110			
Surrogate: 4-Terphenyl-d14	72.3		"	0.333		72.3	33-122			
Surrogate: 2-Fluorobiphenyl	67.8		"	0.333		67.8	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 - Kummer PC #LE23-99HZ

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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