

# 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>
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Site Name & COGCC Facility Number: Frank C #12-22	Date: 02/09/24	Remediation Project #: 32151
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Associated Wells: 05-123-29564	Age of Site: years	Number of Photos Attached: 5
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Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.327425 / -104.493715	Estimated Facility Size (acres): <u>      </u>
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General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)

Good condition

USCS Soil Type: Sandy CLAY	Estimated Depth to Groundwater: ~10-20'
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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	05-123-29564				
Age	years				
Condition of surface around wellhead	Good - No odor/no staining				
PID Readings	WH-N: 0.4	WH-E: 0.2	WH-S: 0.6	WH-W: 0.2	
Condition of subsurface (staining present)	Good - No odor/no staining				
PID Readings	0.7	0.3	0.1	0.4	0.9
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: 9	Total number of samples collected: 9
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Highest PID Reading: 0.9	Total number of samples submitted to lab for analysis: 1
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If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	Estimated spill volume:
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Lateral extent:	Volume of soil removed:
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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
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Date Groundwater was encountered:	Commencement date of removal:
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Sheen on groundwater?      Yes      No	Volume of groundwater removed prior to sampling:
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Free product observed?      Yes      No	Volume of groundwater removed post sampling:
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Total number of samples collected:	Total Volume of groundwater removed:
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Total number of samples submitted to lab for analysis:	
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## **FIGURES**

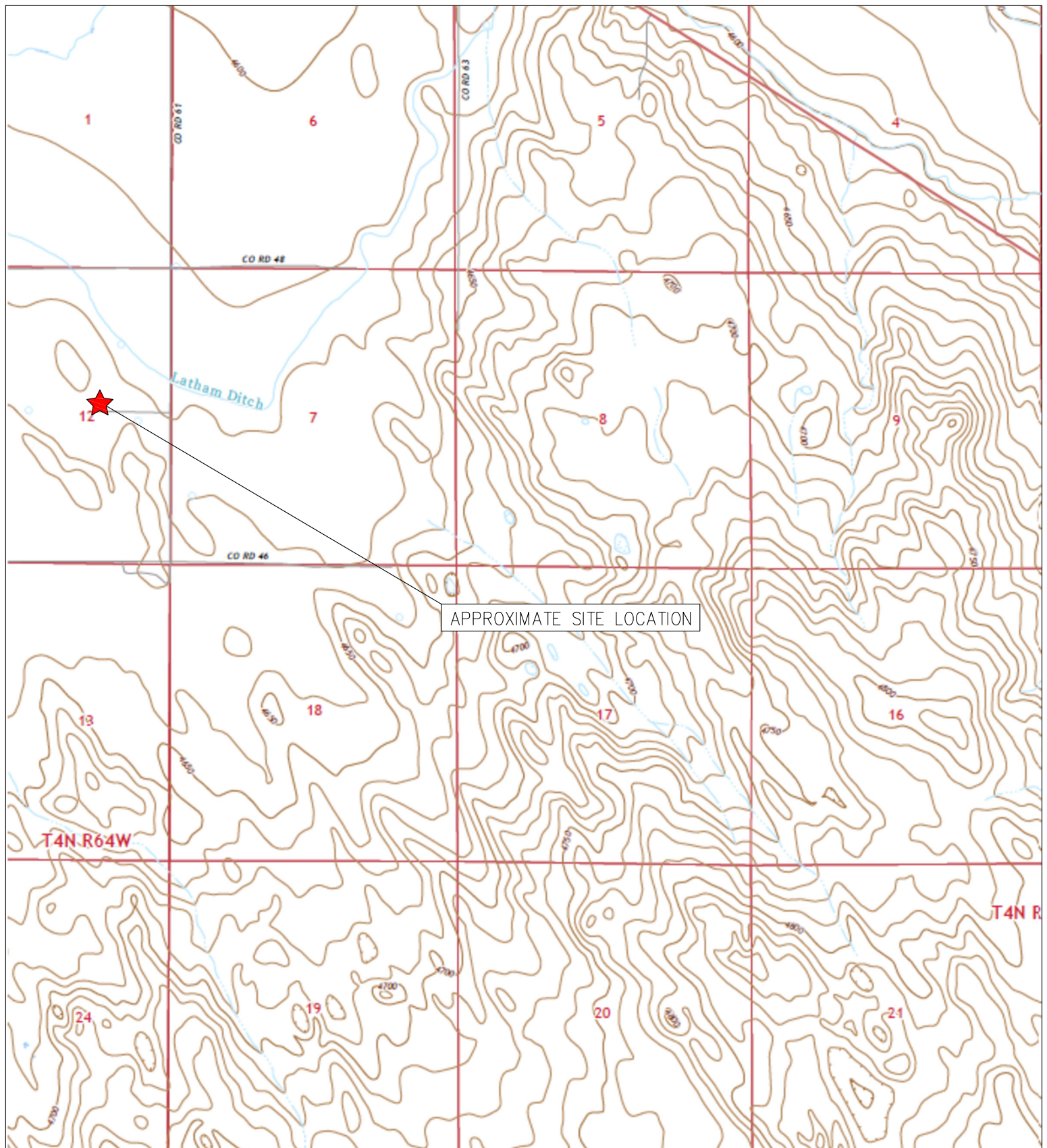
**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Soil Sampling Location Map**

**Figure 4: Soil Analytical Map**

**Figure 5: Metals in Soil Map**



APPROXIMATE SITE LOCATION



TOPOGRAPHIC SITE LOCATION MAP  
 FRANK C #12-22  
 CLOSURE ASSESSMENT  
 40.327428 / -104.494070  
 SE¼ NE¼ SEC.12 T4N R64W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-29564  
 REMEDIATION # 32151



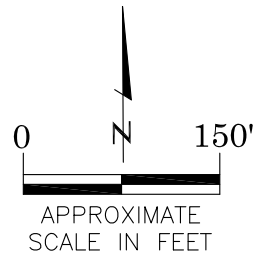
**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, LLC

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



LEGEND

 FORMER FRANK C #12-22 WELLHEAD (PLUGGED AND ABANDONED)



AERIAL SITE LOCATION MAP  
FRANK C #12-22  
CLOSURE ASSESSMENT  
40.327428 / -104.494070  
SE $\frac{1}{4}$  NE $\frac{1}{4}$  SEC.12 T4N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-29564  
REMEDIAION # 32151

FIGURE NO.  
2

DRAWN BY:  
RS



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



**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

SAMPLE LOCATION MAP  
 FRANK C #12-22  
 CLOSURE ASSESSMENT  
 40.327428 / -104.494070  
 SE¼ NE¼ SEC.12 T4N R64W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-29564  
 REMEDIATION # 32151

FIGURE NO.  
3

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 Ph: 303-433-0479 • F: 303-325-5449



WH-FS-01@6'  
02/09/24  
6'  
(BRL)

BACKGROUND-01@2'  
02/09/24  
2'  
Brn = 0.839  
EC = 3.21  
SAR = 4.09  
pH = 8.05

**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)  
N = NAPHTHALENE (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  
FRANK C #12-22  
CLOSURE ASSESSMENT  
40.327428 / -104.494070  
SE¼ NE¼ SEC.12 T4N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-29564  
REMEDATION # 32151

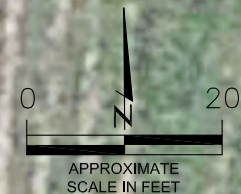


FIGURE NO.  
4

DRAWN BY:  
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CONSULTING, LLC  
8000 W 44th Ave, Wheat Ridge, CO 80033  
Ph: 303-433-0479 • F: 303-525-5449



WH-FS-01@6'  
02/09/24  
6'

Arsenic = 3.66  
Barium = 89.5\*  
Cadmium = 0.128  
Chromium (VI) = <0.244\*\*  
Copper = <9.55  
Lead = 9.34  
Nickel = 7.87  
Selenium = 0.118  
Silver = <0.0955  
Zinc = 38.1

BACKGROUND-01@2'  
02/09/24  
2'

Arsenic = 3.47  
Barium = 80.6  
Cadmium = 0.134  
Chromium (VI) = <0.244\*\*  
Copper = <8.72  
Lead = 15.0\*  
Nickel = 7.17  
Selenium = 0.177  
Silver = <0.0872  
Zinc = 41.0

**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  
Arsenic = (mg/kg)  
Barium = (mg/kg)  
Cadmium = (mg/kg)  
Chromium (VI) = (mg/kg)  
Copper = (mg/kg)  
Lead = (mg/kg)  
Nickel = (mg/kg)  
Selenium = (mg/kg)  
Silver = (mg/kg)  
Zinc = (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

NOTES:  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT/OR ABOVE LABORATORY REPORTING LIMITS AND/OR MINIMUM DETECTION LIMITS.

ELEVATED METALS ARE NATURALLY OCCURRING IN COLORADO. LOCAL CLEAN-UP LEVELS ARE 1.25\*BACKGROUND CONCENTRATIONS WHERE APPLICABLE.

VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS AND APPLICABLE LOCAL CLEAN-UP LEVELS.

\*VALUES EXCEED ECMC TABLE 915-1 PROTECTION OF GROUNDWATER SOIL SCREENING LEVELS, ONLY.

\*\*ACHIEVABLE PRACTICAL QUANTITATIVE LIMITS FOR HEXAVALENT CHROMIUM (Cr VI) IN SOILS IS IN THE RANGE OF 0.1 TO 1 mg/kg.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

**METALS IN SOIL MAP**  
FRANK C #12-22  
CLOSURE ASSESSMENT  
40.327428 / -104.494070  
SE¼ NE¼ SEC.12 T4N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-29564  
REMEDIAATION # 32151

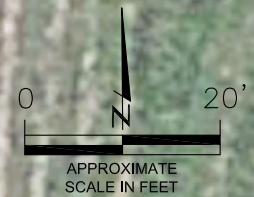


FIGURE NO.  
5  
DRAWN BY:  
RS

**EAGLE**  
ENVIRONMENTAL  
CONSULTING, LLC  
8000 W 44th Ave, Wheat Ridge, CO 80033  
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**  
**FRANK C #12-22**  
**CLOSURE ASSESSMENT**  
**40.327428 / -104.494070**  
**SE¼ NE¼ SEC.12 T4N R64W 6PM**  
**WELD COUNTY, COLORADO**  
**API # 05-123-29564**  
**REMEDIATION # 32151**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 6' (40.327425 / -104.493715)	02/09/24	6	0.9	Y
WH-SS-01 @ 5' (40.327434 / -104.493715)	02/09/24	5	0.7	N
WH-SS-02 @ 5' (40.327425 / -104.493703)	02/09/24	5	0.3	N
WH-SS-03 @ 5' (40.327415 / -104.493715)	02/09/24	5	0.1	N
WH-SS-04 @ 5' (40.327425 / -104.493728)	02/09/24	5	0.4	N
WH-N @ 0.5' (40.327456 / -104.493715)	02/09/24	0.5	0.4	N
WH-E @ 0.5' (40.327424 / -104.493660)	02/09/24	0.5	0.2	N
WH-S @ 0.5' (40.327390 / -104.493715)	02/09/24	0.5	0.6	N
WH-W @ 0.5' (40.327424 / -104.493761)	02/09/24	0.5	0.2	N
Background-01 @ 2' (40.327463 / -104.493661)	02/09/24	2	0.3	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				



TABLE 2  
SOIL ANALYTICAL RESULTS SUMMARY  
FRANK C #12-22  
CLOSURE ASSESSMENT  
40.327428 / -104.494070  
SE¼ NE¼ SEC.12 T4N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-29564  
REMEDATION # 32151

Sample Location		WH-FS-01 @ 6'	Background-01 @ 2'			
(Latitude / Longitude)		(40.327425 / -104.493715)	(40.327463 / -104.493661)			
Sample Date		2/9/2024	2/9/2024			
Sample Depth		6'	2'			
PID Reading (ppm-v)		0.9	0.3			
Regulatory Limits						
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level		
<b>VOCS</b>						
Benzene	mg/kg	1.2	0.0026	--	<0.00200	NA
Toluene	mg/kg	490	0.69	--	<0.00200	NA
Ethylbenzene	mg/kg	5.8	0.78	--	<0.00200	NA
Total Xylenes	mg/kg	58	9.9	--	<0.00200	NA
Naphthalene	mg/kg	2	0.0038	--	<0.00380	NA
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	--	<0.00200	NA
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	--	<0.00200	NA
<b>TOTAL PETROLEUM HYDROCARBONS</b>						
TPH-GRO	mg/kg	500	--	--	<0.200	NA
TPH-DRO	mg/kg	500	--	--	<25.0	NA
TPH-RRO	mg/kg	500	--	--	<100	NA
<b>POLYCYCLIC AROMATIC HYDROCARBONS</b>						
1-Methyl-naphthalene	mg/kg	18	0.006	--	<0.002	NA
2-Methyl-naphthalene	mg/kg	24	0.019	--	<0.002	NA
Acenaphthene	mg/kg	360	0.55	--	<0.020	NA
Anthracene	mg/kg	1800	5.8	--	<0.020	NA
Benzo(a)-anthracene	mg/kg	1.1	0.011	--	<0.005	NA
Benzo(a)-pyrene	mg/kg	0.11	0.24	--	<0.020	NA
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	--	<0.020	NA
Benzo(k)-fluoranthene	mg/kg	11	2.9	--	<0.020	NA
Chrysene	mg/kg	110	9	--	<0.020	NA
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	--	<0.020	NA
Fluoranthene	mg/kg	240	8.9	--	<0.020	NA
Fluorene	mg/kg	240	0.54	--	<0.020	NA
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	--	<0.020	NA
Pyrene	mg/kg	180	1.3	--	<0.020	NA
<b>SOIL SUITABILITY (Inorganics)</b>						
Boron	mg/L	2	--	--	0.549	0.839
pH	standard unit	6-8.3	--	--	8.02	8.05
Sodium Adsorption Ratio (SAR)	--	<6	--	--	4.24	4.09
Specific Conductance (EC)	mmhos/cm	<4	--	--	2.50	3.21
<b>METALS</b>						
Arsenic	mg/kg	0.68	0.29	4.34	3.66	3.47
Barium	mg/kg	15000	82	101	89.5*	80.6
Cadmium	mg/kg	71	0.38	--	0.128	0.134
Copper	mg/kg	3100	46	--	<9.55	<8.72
Lead	mg/kg	400	14	18.8	9.34	15.0*
Nickel	mg/kg	1500	26	--	7.87	7.17
Selenium	mg/kg	390	0.26	--	0.118	0.177
Silver	mg/kg	390	0.8	--	<0.0955	<0.0872
Zinc	mg/kg	23000	370	--	38.1	41.0
Hexavalent Chromium	mg/kg	0.3**	0.00067**	0.1 to 1.0**	<0.244**	0.244**
ECMC = Energy & Carbon Management Commission      NA - Not Analyzed      VOCs - Volatile Organic Compounds						
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.						
Elevated metals are naturally occurring in Colorado. Local Clean-up Levels are 1.25*Background concentrations where applicable.						
Values presented in <b>BOLD</b> exceed ECMC Table 915-1 Regulatory Limits and applicable Local Clean-up Levels.						
Values presented with asterisk (*) exceed ECMC Table 915-1 GSSLs, only.						
**Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.						



## **ATTACHMENT A**

### **Photo Log**

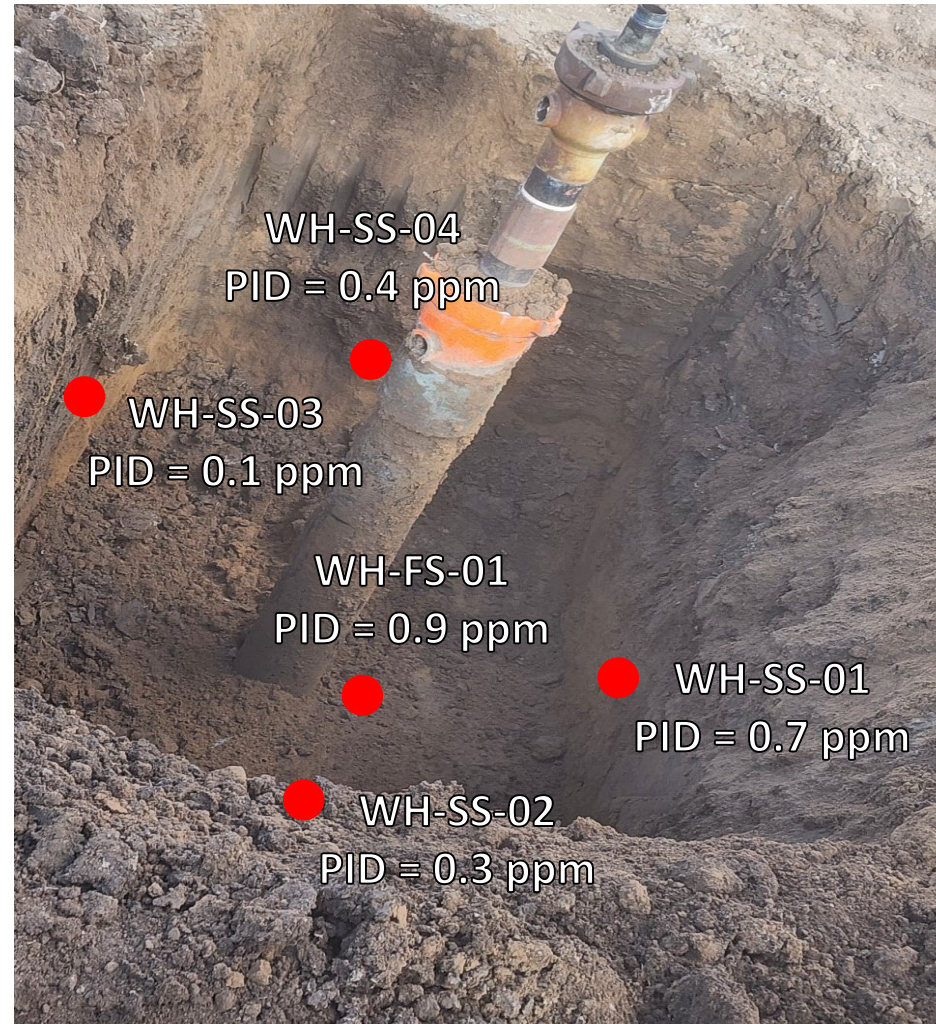
Frank C #12-22  
API # 05-123-29564  
Remediation # 32151

Closure Assessment

February 2024



# Wellhead Excavation – 02/09/24



Looking west

No petroleum hydrocarbon staining or odor observed

# Wellhead Surface – 02/09/24



Looking north

Site in good condition – no petroleum hydrocarbon staining or odor observed on surface around wellhead



Looking east

Site in good condition – no petroleum hydrocarbon staining or odor observed on surface around wellhead

# Wellhead Surface – 02/09/24



Looking south

Site in good condition – no petroleum hydrocarbon staining or odor observed on surface around wellhead



Looking west

Site in good condition – no petroleum hydrocarbon staining or odor observed on surface around wellhead



## **ATTACHMENT B**

### **Laboratory Analytical Report**



February 23, 2024

Eagle Environmental Consulting, LLC

Andrew Newberry

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Frank C #12-22

Project Number - [none]

Attached are your analytical results for Noble - Frank C #12-22 received by Origins Laboratory, Inc. February 09, 2024. This project is associated with Origins project number Y402270-01.

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



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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Frank C #12-22

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y402270-01	Soil	February 9, 2024 14:20	02/09/2024 16:00
Background-01@2'	Y402270-02	Soil	February 9, 2024 13:55	02/09/2024 16:00

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.*



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4402270 Client: Eagle  
 Client Project ID: Frank C #12-22  
 Checklist Completed by: TJH/ENS Shipped Via: HV  
 Date/time completed: 2/12/24 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1, 2 °c \_\_\_\_\_ °c \_\_\_\_\_ °c (Describe) \_\_\_\_\_ °c  
 Thermometer ID: TOOH

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	/			
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		/		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		/		
Were all samples received intact <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for sub-contracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			/	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 2/13/24

Origins Laboratory, Inc.

[Signature]

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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**WH-FS-01@6'**  
**2/9/2024 2:20:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.549		0.0996	mg/L	1	B4B1211	02/12/2024	02/13/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4B1401	02/14/2024	02/20/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	93.1 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4B1335	02/13/2024	02/14/2024	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

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**WH-FS-01@6'**  
**2/9/2024 2:20:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 1,2-Dichloroethane-d4	99.3 %		70-130			B4B13 35	02/13/2024	02/14/2024	
Surrogate: Toluene-d8	103 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	13.5		0.499	meq/L	10	[CALC]	02/12/2024	02/13/2024	
Magnesium	5.51		0.823	"	"	"	"	"	
Sodium	13.1		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4B1321	02/13/2024	02/15/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Anthracene	ND		0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**WH-FS-01@6'**

**2/9/2024 2:20:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-01 (Soil)**

**PAH by EPA 8270E**

Fluoranthene	ND		0.020	mg/kg	1	B4B1321	02/13/2024	02/15/2024	U
Fluorene	ND		0.020	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	96.9 %		60-130			"	"	"	
Surrogate: Anthracene-d10	103 %		60-130			"	"	"	
Surrogate: Pyrene-d10	98.2 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	102 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.02			pH Units	1	B4B1216	02/12/2024	02/13/2024	
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**SAR by 20B Saturated Paste**

SAR	4.24		0.0100	SAR	1	B4B1206	02/12/2024	02/13/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.50		0.00500	mmhos/cm	1	B4B1216	02/12/2024	02/13/2024	
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**Table 915 metals by EPA 6020B**

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**WH-FS-01@6'**

**2/9/2024 2:20:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-01 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	3.66	0.0955	0.0955	mg/kg	10	B4B0946	02/12/2024	02/17/2024	
Barium	89.5	9.55	9.55	"	"	"	"	"	
Cadmium	0.128	0.0955	0.0955	"	"	"	"	"	
Copper	ND	9.55	9.55	"	"	"	"	"	
Lead	9.34	0.955	0.955	"	"	"	"	"	
Nickel	7.87	0.955	0.955	"	"	"	"	"	
Selenium	0.118	0.0955	0.0955	"	"	"	"	"	
Silver	ND	0.0955	0.0955	"	"	"	"	"	
Zinc	38.1	9.55	9.55	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L733239	02/09/2024	02/16/2024	
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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**Background-01@2'**  
**2/9/2024 1:55:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.839		0.100	mg/L	1	B4B1211	02/12/2024	02/13/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	22.2		0.499	meq/L	10	[CALC]	02/12/2024	02/13/2024	
Magnesium	7.56		0.823	"	"	"	"	"	
Sodium	15.8		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.05			pH Units	1	B4B1216	02/12/2024	02/13/2024	
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**SAR by 20B Saturated Paste**

SAR	4.09		0.0100	SAR	1	B4B1206	02/12/2024	02/13/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.21		0.00500	mmhos/cm	1	B4B1216	02/12/2024	02/13/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.47		0.0872	mg/kg	10	B4B0946	02/12/2024	02/17/2024	
Barium	80.6		8.72	"	"	"	"	"	
Cadmium	0.134		0.0872	"	"	"	"	"	
Copper	ND		8.72	"	"	"	"	"	

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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**Background-01@2'**  
**2/9/2024 1:55:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y402270-02 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	15.0		0.872	mg/kg	10	B4B0946	02/12/2024	02/17/2024	
Nickel	7.17		0.872	"	"	"	"	"	
Selenium	0.177		0.0872	"	"	"	"	"	
Silver	ND		0.0872	"	"	"	"	"	
Zinc	41.0		8.72	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L733239	02/09/2024	02/16/2024	
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 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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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**Batch B4B1335 - EPA 5030 (soil)**

**Blank (B4B1335-BLK1)**

Prepared: 02/13/2024 Analyzed: 02/13/2024

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	101		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	100		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	101		70-130			

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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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**Batch B4B1335 - EPA 5030 (soil)**

**LCS (B4B1335-BS1)**

Prepared: 02/13/2024 Analyzed: 02/13/2024

1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100		106	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100		107	70-130			
Benzene	0.0988	0.00200	"	0.100		98.8	70-130			
Ethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Naphthalene	0.114	0.00380	"	0.100		114	70-130			
Toluene	0.103	0.00200	"	0.100		103	70-130			
o-Xylene	0.104	0.00200	"	0.100		104	70-130			
m,p-Xylene	0.201	0.00400	"	0.200		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.4	70-130			

Origins Laboratory, Inc.



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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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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Batch B4B1335 - EPA 5030 (soil)

Matrix Spike (B4B1335-MS1)	Source: Y402307-02			Prepared: 02/13/2024 Analyzed: 02/13/2024						
1,2,4-Trimethylbenzene	0.115	0.00200	mg/kg	0.100	ND	115	70-130			
1,3,5-Trimethylbenzene	0.115	0.00200	"	0.100	ND	115	70-130			
Benzene	0.107	0.00200	"	0.100	ND	107	70-130			
Ethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130			
Naphthalene	0.125	0.00380	"	0.100	ND	125	70-130			
Toluene	0.111	0.00200	"	0.100	ND	111	70-130			
o-Xylene	0.112	0.00200	"	0.100	ND	112	70-130			
m,p-Xylene	0.217	0.00400	"	0.200	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.4	70-130			

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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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Batch B4B1335 - EPA 5030 (soil)

Matrix Spike Dup (B4B1335-MSD1)	Source: Y402307-02			Prepared: 02/13/2024 Analyzed: 02/13/2024						
1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100	ND	107	70-130	7.32	20	
1,3,5-Trimethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130	7.81	20	
Benzene	0.103	0.00200	"	0.100	ND	103	70-130	4.43	20	
Ethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130	6.74	20	
Naphthalene	0.119	0.00380	"	0.100	ND	119	70-130	5.42	20	
Toluene	0.106	0.00200	"	0.100	ND	106	70-130	4.94	20	
o-Xylene	0.106	0.00200	"	0.100	ND	106	70-130	6.20	20	
m,p-Xylene	0.204	0.00400	"	0.200	ND	102	70-130	5.98	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.9	70-130			

Origins Laboratory, Inc.



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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4B1401 - EPA 3550B</b>										
<b>Blank (B4B1401-BLK1)</b>										
					Prepared: 02/14/2024 Analyzed: 02/20/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		91.9	50-150			

Origins Laboratory, Inc.



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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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 B4B1401 - EPA 3550B**

**LCS (B4B1401-BS1)**

Prepared: 02/14/2024 Analyzed: 02/20/2024

Diesel (C10-C28)	892	50.0	mg/kg	1000		89.2	70-130			
Residual Range Organics (C28-C40)	1100	200	"	1000		110	70-130			
Surrogate: o-Terphenyl	46		"	49.8		91.5	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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 B4B1401 - EPA 3550B**

<b>Matrix Spike (B4B1401-MS1)</b>	<b>Source: Y402244-01</b>			<b>Prepared: 02/14/2024 Analyzed: 02/20/2024</b>						
Diesel (C10-C28)	932	50.0	mg/kg	1000	ND	93.2	70-130			
Residual Range Organics (C28-C40)	1180	200	"	1000	ND	118	70-130			
Surrogate: o-Terphenyl	57		"	49.8		114	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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
<b>Batch B4B1401 - EPA 3550B</b>										
<b>Matrix Spike Dup (B4B1401-MSD1)</b>					<b>Source: Y402244-01</b>					Prepared: 02/14/2024 Analyzed: 02/20/2024
Diesel (C10-C28)	868	50.0	mg/kg	1000	ND	86.8	70-130	7.14	35	
Residual Range Organics (C28-C40)	1130	200	"	1000	ND	113	70-130	4.97	35	
Surrogate: o-Terphenyl	42		"	49.8		83.8	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**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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**Metals by EPA 6000/7000 Series Methods - 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 B4B0946 - EPA 3050B**

**Blank (B4B0946-BLK1)**

Prepared: 02/12/2024 Analyzed: 02/16/2024

Arsenic	ND	0.0100	mg/kg							
Barium	ND	1.00	"							
Cadmium	ND	0.0100	"							
Copper	ND	1.00	"							
Lead	ND	0.100	"							
Nickel	ND	0.100	"							
Selenium	ND	0.0100	"							
Silver	ND	0.0100	"							
Zinc	ND	1.00	"							

**LCS (B4B0946-BS1)**

Prepared: 02/12/2024 Analyzed: 02/16/2024

Arsenic	4.97	0.0100	mg/kg	5.00		99.5	80-120			
Barium	502	1.00	"	500		100	80-120			
Cadmium	4.97	0.0100	"	5.00		99.3	80-120			
Copper	47.5	1.00	"	50.0		95.0	80-120			
Lead	5.11	0.100	"	5.00		102	80-120			
Nickel	4.93	0.100	"	5.00		98.5	80-120			
Selenium	4.97	0.0100	"	5.00		99.3	80-120			
Silver	5.16	0.0100	"	5.00		103	80-120			
Zinc	48.5	1.00	"	50.0		97.0	80-120			

**Matrix Spike (B4B0946-MS1)**

Source: Y402269-02

Prepared: 02/12/2024 Analyzed: 02/16/2024

Origins Laboratory, Inc.



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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**Metals by EPA 6000/7000 Series Methods - 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 B4B0946 - EPA 3050B**

<b>Matrix Spike (B4B0946-MS1)</b>		<b>Source: Y402269-02</b>			<b>Prepared: 02/12/2024 Analyzed: 02/16/2024</b>					
Arsenic	11.7	0.0944	mg/kg	4.72	5.41	134	75-125			QM-07
Barium	606	9.44	"	472	69.7	114	75-125			
Cadmium	5.72	0.0944	"	4.72	0.122	119	75-125			
Copper	59.6	9.44	"	47.2	6.54	112	75-125			
Lead	13.9	0.944	"	4.72	7.68	133	75-125			QM-07
Nickel	13.3	0.944	"	4.72	7.39	125	75-125			
Selenium	5.90	0.0944	"	4.72	0.264	119	75-125			
Silver	5.56	0.0944	"	4.72	0.0244	117	75-125			
Zinc	90.0	9.44	"	47.2	33.0	121	75-125			

<b>Matrix Spike Dup (B4B0946-MSD1)</b>		<b>Source: Y402269-02</b>			<b>Prepared: 02/12/2024 Analyzed: 02/16/2024</b>					
Arsenic	10.8	0.0942	mg/kg	4.71	5.41	114	75-125	8.35	20	
Barium	567	9.42	"	471	69.7	106	75-125	6.57	20	
Cadmium	5.48	0.0942	"	4.71	0.122	114	75-125	4.19	20	
Copper	57.9	9.42	"	47.1	6.54	109	75-125	2.88	20	
Lead	13.7	0.942	"	4.71	7.68	127	75-125	2.03	20	QM-07
Nickel	12.3	0.942	"	4.71	7.39	105	75-125	7.54	20	
Selenium	5.13	0.0942	"	4.71	0.264	103	75-125	13.8	20	
Silver	5.33	0.0942	"	4.71	0.0244	113	75-125	4.17	20	
Zinc	85.0	9.42	"	47.1	33.0	110	75-125	5.62	20	

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 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Frank C #12-22

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4B1321 - EPA 3580**

**Blank (B4B1321-BLK1)**

Prepared: 02/13/2024 Analyzed: 02/14/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	190		ug/kg	200		94.4	60-130			
Surrogate: Anthracene-d10	190		"	200		95.1	60-130			
Surrogate: Pyrene-d10	200		"	200		102	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.7	60-130			

**LCS (B4B1321-BS1)**

Prepared: 02/13/2024 Analyzed: 02/14/2024

1-Methylnaphthalene	0.195	0.002	mg/kg	0.200		97.6	70-130			
2-Methylnaphthalene	0.194	0.002	"	0.200		97.2	70-130			
Acenaphthene	0.182	0.020	"	0.200		91.2	70-130			
Anthracene	0.194	0.020	"	0.200		96.9	70-130			

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4B1321 - EPA 3580**

**LCS (B4B1321-BS1)**

Prepared: 02/13/2024 Analyzed: 02/14/2024

Benzo (a) anthracene	0.183	0.005	mg/kg	0.200		91.7	70-130			
Benzo (a) pyrene	0.179	0.020	"	0.200		89.5	70-130			
Benzo (b) fluoranthene	0.201	0.020	"	0.200		100	70-130			
Benzo (g,h,i) perylene	0.195	0.020	"	0.200		97.3	70-130			
Benzo (k) fluoranthene	0.196	0.020	"	0.200		97.9	70-130			
Chrysene	0.184	0.020	"	0.200		92.2	70-130			
Dibenz (a,h) anthracene	0.200	0.020	"	0.200		99.8	70-130			
Fluoranthene	0.187	0.020	"	0.200		93.6	70-130			
Fluorene	0.178	0.020	"	0.200		89.1	70-130			
Indeno (1,2,3-cd) pyrene	0.189	0.020	"	0.200		94.7	70-130			
Naphthalene	0.195	0.002	"	0.200		97.3	70-130			
Phenanthrene	0.202	0.020	"	0.200		101	70-130			
Pyrene	0.186	0.020	"	0.200		93.0	70-130			
Surrogate: Fluorene-d10	190		ug/kg	200		93.4	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	200		"	200		98.1	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		103	60-130			

**Matrix Spike (B4B1321-MS1)**

Source: Y402231-01

Prepared: 02/13/2024 Analyzed: 02/14/2024

1-Methylnaphthalene	0.200	0.002	mg/kg	0.200	0.010	94.7	70-130			
2-Methylnaphthalene	0.206	0.002	"	0.200	0.029	88.9	70-130			
Acenaphthene	0.174	0.020	"	0.200	0.0004	86.7	70-130			
Anthracene	0.178	0.020	"	0.200	ND	88.9	70-130			
Benzo (a) anthracene	0.177	0.005	"	0.200	0.0004	88.2	70-130			
Benzo (a) pyrene	0.175	0.020	"	0.200	0.002	86.2	70-130			
Benzo (b) fluoranthene	0.193	0.020	"	0.200	ND	96.6	70-130			
Benzo (g,h,i) perylene	0.181	0.020	"	0.200	ND	90.3	70-130			

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 Project: Noble - Frank C #12-22

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4B1321 - EPA 3580**

<b>Matrix Spike (B4B1321-MS1)</b>		<b>Source: Y402231-01</b>			Prepared: 02/13/2024 Analyzed: 02/14/2024					
Benzo (k) fluoranthene	0.196	0.020	mg/kg	0.200	ND	98.0	70-130			
Chrysene	0.178	0.020	"	0.200	0.0007	88.7	70-130			
Dibenz (a,h) anthracene	0.181	0.020	"	0.200	ND	90.6	70-130			
Fluoranthene	0.197	0.020	"	0.200	0.003	96.6	70-130			
Fluorene	0.188	0.020	"	0.200	0.001	93.5	70-130			
Indeno (1,2,3-cd) pyrene	0.173	0.020	"	0.200	ND	86.7	70-130			
Naphthalene	0.191	0.002	"	0.200	0.012	89.4	70-130			
Phenanthrene	0.187	0.020	"	0.200	0.003	91.8	70-130			
Pyrene	0.196	0.020	"	0.200	0.0007	97.8	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		108	60-130			
Surrogate: Anthracene-d10	190		"	200		93.2	60-130			
Surrogate: Pyrene-d10	210		"	200		105	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		103	60-130			

<b>Matrix Spike Dup (B4B1321-MSD1)</b>		<b>Source: Y402231-01</b>			Prepared: 02/13/2024 Analyzed: 02/14/2024					
1-Methylnaphthalene	0.211	0.002	mg/kg	0.200	0.010	100	70-130	5.60	20	
2-Methylnaphthalene	0.220	0.002	"	0.200	0.029	95.9	70-130	6.61	20	
Acenaphthene	0.178	0.020	"	0.200	0.0004	88.9	70-130	2.48	20	
Anthracene	0.186	0.020	"	0.200	ND	93.2	70-130	4.65	20	
Benzo (a) anthracene	0.181	0.005	"	0.200	0.0004	90.1	70-130	2.23	20	
Benzo (a) pyrene	0.180	0.020	"	0.200	0.002	88.8	70-130	2.88	20	
Benzo (b) fluoranthene	0.203	0.020	"	0.200	ND	102	70-130	5.16	20	
Benzo (g,h,i) perylene	0.188	0.020	"	0.200	ND	94.2	70-130	4.22	20	
Benzo (k) fluoranthene	0.204	0.020	"	0.200	ND	102	70-130	4.16	20	
Chrysene	0.179	0.020	"	0.200	0.0007	88.9	70-130	0.273	20	
Dibenz (a,h) anthracene	0.197	0.020	"	0.200	ND	98.4	70-130	8.17	20	
Fluoranthene	0.207	0.020	"	0.200	0.003	102	70-130	5.03	20	

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4B1321 - EPA 3580**

<b>Matrix Spike Dup (B4B1321-MSD1)</b>	<b>Source: Y402231-01</b>			<b>Prepared: 02/13/2024 Analyzed: 02/14/2024</b>						
Fluorene	0.187	0.020	mg/kg	0.200	0.001	93.0	70-130	0.475	20	
Indeno (1,2,3-cd) pyrene	0.191	0.020	"	0.200	ND	95.6	70-130	9.73	20	
Naphthalene	0.198	0.002	"	0.200	0.012	93.0	70-130	3.71	20	
Phenanthrene	0.196	0.020	"	0.200	0.003	96.3	70-130	4.72	20	
Pyrene	0.215	0.020	"	0.200	0.0007	107	70-130	9.34	20	
Surrogate: Fluorene-d10	210		ug/kg	200		104	60-130			
Surrogate: Anthracene-d10	200		"	200		101	60-130			
Surrogate: Pyrene-d10	210		"	200		107	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

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 Project: Noble - Frank C #12-22

**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 B4B1206 - Saturated Paste Metals**

**Blank (B4B1206-BLK1)**

Prepared: 02/12/2024 Analyzed: 02/13/2024

SAR	ND	0.0100	SAR							
Calcium PPM	ND	10.0	mg/L							
Magnesium PPM	ND	10.0	"							
Sodium PPM	ND	10.0	"							

**Duplicate (B4B1206-DUP1)**

**Source: Y402268-04**

Prepared: 02/12/2024 Analyzed: 02/13/2024

SAR	ND	0.0100	SAR		6.61				200	
Calcium PPM	119	10.0	mg/L		96.9			20.1	50	
Magnesium PPM	37.1	10.0	"		33.0			11.8	50	
Sodium PPM	283	10.0	"		295			4.04	50	

**Batch B4B1211 - DTPA Sorbitol Preparation**

**Blank (B4B1211-BLK1)**

Prepared: 02/12/2024 Analyzed: 02/13/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4B1211-DUP1)**

**Source: Y402268-01**

Prepared: 02/12/2024 Analyzed: 02/13/2024

Boron	0.331	0.0999	mg/L		0.304			8.62	50	
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 Project: Noble - Frank C #12-22

**Saturated Paste - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4B1216 - Saturated Paste pH/EC</b>										
<b>Blank (B4B1216-BLK1)</b>					Prepared: 02/12/2024 Analyzed: 02/13/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B4B1216-DUP1)</b>					<b>Source: Y402268-04</b> Prepared: 02/12/2024 Analyzed: 02/13/2024					
pH	8.07		pH Units		8.10			0.371	25	
Specific Conductance (EC)	2.01	0.00500	mmhos/cm		2.14			6.30	25	

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 Project: Noble - Frank C #12-22

**Total Metals by 7196A - Quality Control**  
**Waypoint Analytical, LLC.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L733239 -</b>										
<b>DUP (L 95863-DUP)</b>		<b>Source: 95863</b>			Prepared: Analyzed: 02/16/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
<b>MS (L 95863-MS)</b>		<b>Source: 95863</b>			Prepared: Analyzed: 02/16/2024					
Chromium, Hexavalent	19.2	2.5	mg/Kg	39.4	< 0.244	49	75-125			*
<b>LCS (LCS)</b>		Prepared: Analyzed: 02/16/2024								
Chromium, Hexavalent	6.11	0.5	mg/Kg	8		76	75-125			
<b>LRB (LRB)</b>		Prepared: Analyzed: 02/16/2024								
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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Wheat Ridge CO 80033

Andrew Newberry  
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Project: Noble - Frank C #12-22

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### Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

\* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported 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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Jordan A. Bynon, Project Manager