

# **FREMONT ENVIRONMENTAL INC.**

September 19, 2020

Mr. Jason Davidson  
Great Western Operating Company, LLC  
1801 Broadway, Suite 500  
Denver, CO 80202

Subject:     **Excavation Report**  
              T&M DE Pad 22-039HC  
              SWSW Sec 15, T8N, R66W  
              Weld County, Colorado  
              Fremont Project No. C020-063  
              Remediation #15781

Dear Mr. Davidson:

Enclosed please find a copy of the above referenced Excavation Report for the T&M DE 22-039HC Pad release site in Weld County, Colorado. The enclosed report describes excavation actions to remove impacted soil from the site.

Since the excavation project has removed the subsurface petroleum impacts, Great Western Operating Company, LLC should request that a No Further Action (NFA) determination be provided by the Colorado Oil and Gas Conservation Commission (COGCC) for this site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**



Paul V. Henehan, P.E.  
Senior Consultant

Enclosure

**EXCAVATION REPORT**

**GREAT WESTERN OPERATING COMPANY, LLC**

**T&M DE 22-039HC PAD**

**WELD COUNTY, COLORADO**

**FREMONT PROJECT NO. C020-063**

**REMEDIATION #15781**

**Prepared by:**

**Fremont Environmental Inc.  
1759 Redwing Lane  
Broomfield, CO 80020  
(303) 956-8714**

**September 19, 2020**

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**EXCAVATION REPORT**  
**GREAT WESTERN OPERATING COMPANY, LLC**  
**T&M DE 22-039HC PAD**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C020-063**  
**REMEDIATION #15781**

**1.0 INTRODUCTION**

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Great Western Operating Company, LLC (GWOC) T&M DE22-039HC Pad release location in Weld County, Colorado. This one-day excavation project was completed on September 1, 2020. In addition, one monitoring well (MW-1) and one soil vapor extraction well (SVE-1) were installed to determine if deeper contamination was present beneath the impacted area.

**2.0 BACKGROUND INFORMATION**

**2.1 Site Location**

The T&M DE22-039HC Pad site is located approximately two miles north of Pierce, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 0.3 miles west of the intersection of Highway 85 and County Road 92. The location is further described as the SW  $\frac{1}{4}$  of the SWE  $\frac{1}{4}$  of Section 15, Township 8N, Range 66W.

**2.2 Site History**

The site's excavation area consisted of the soil immediately beneath two of the facility's separators within the secondary containment area. Soil impacts were identified within the walled area following a July 2020 release at the facility. GWOC temporarily took the two northernmost separators out of service in anticipation of soil excavation.

### **3.0 FIELD ACTIVITIES**

Remediation efforts consisted of excavation of petroleum-contaminated soil at this site using hydrovac trucks. Excavation was completed at the facility on September 1, 2020. Soil removal was limited to the area immediately beneath the two separators where surface impacts were present due to the July 2020 release.

The soil consisted of road base which was underlain by sandy silt to a depth of approximately three feet. Three feet was the maximum depth excavated using the hydrovac equipment. The 19' x 23' excavated area is shown on Figure 3.

Five soil samples were collected from the sidewalls and floor and were analyzed by Summit Scientific Inc. of Golden, Colorado for benzene, toluene, ethylbenzene and xylenes (BTEX), Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) by EPA method 8260D, and TPH – Diesel Range Organics (TPH-DRO) by EPA method 8015. These soil samples all had concentrations that were less than the Colorado Oil and Gas Conservation Commission's (COGCC's) Table 910-1 limits. A summary of the soil sample laboratory data from the excavation is included in Table 1 and illustrated on Figure 3. The laboratory reports and chain-of-custody documentation are included in Appendix B.

In an effort to determine the subsurface characteristics beneath the release area, two soil borings were advanced at the site on August 4, 2020 and September 2, 2020. The first boring was completed as a one-inch diameter monitoring well (MW-1). The second boring was completed as a one-inch diameter soil vapor extraction well (SVE-1). Field observations from both of these wells did not indicate that petroleum contamination was present. Further, three soil samples from various depths were collected from each of the two borings and submitted for laboratory analyses to Origins Laboratory, Inc. The depths of the soil samples from MW-1 were 12, 16 and 24 feet; the depth of the soil

samples from SVE-1 were 10, 16 and 22 feet. The laboratory analyses indicated that the petroleum constituents were less than their respective COGCC Table 910-1 limits. A summary of the soil sample laboratory data from the borings is included in Table 2.

The boring/well logs are presented in Appendix A. These logs indicate that sandy silt was present to a depth of approximately five feet; the silt was underlain by sand and gravel to a depth of 22 feet. At that depth, firm sandy clay was present. The Geoprobe direct push rig encountered refusal at 26 feet.

A total of four hydrovac loads of petroleum-impacted soil was removed by Acme Oilfield Services Inc. from the location over this one-day excavation project. The impacted soil was disposed of at the Pawnee Buttes Landfill in Weld County, Colorado as non-hazardous waste.

#### **4.0 DISCUSSION**

As a result of a July 2020 release within the bermed area of GWOC's T&M Pad, an excavation with hydrovac trucks was conducted to remove contaminated soil in September 2020. Four hydrovac loads of impacted soil were removed and transported to the Pawnee Buttes landfill.

Two soil borings were advanced in close proximity to the release location. Soil sampling from both borings indicated that soil contamination was not present in excess of the COGCC Table 910-1 limits.

As demonstrated by field observations and soil sampling, the petroleum-impacted soil has been removed from the site by excavation. Therefore, GWOC should request that a no further action (NFA) determination be provided by the COGCC.

### **5.0 REMARKS**

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



9/19/20

Date\_\_\_\_\_

---

Paul V. Henahan, P.E.  
Senior Consultant

## **TABLES**



**TABLE 1**  
**SUMMARY OF EXCAVATION SOIL CHEMISTRY DATA**  
**GREAT WESTERN OPERATING COMPANY, LLC**  
**T&M TANK BATTERY, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C020-063**

<b>SAMPLE LOCATION</b>	<b>DATE SAMPLED</b>	<b>DEPTH ft</b>	<b>BENZENE mg/kg</b>	<b>TOLUENE mg/kg</b>	<b>ETHYL BENZENE mg/kg</b>	<b>TOTAL XYLENES mg/kg</b>	<b>TPH-GRO mg/kg</b>	<b>TPH-DRO mg/kg</b>
N Wall 2 Ft	09/01/20	2	<0.002	<0.005	<0.005	<0.01	<0.50	<50
S Wall 2 Ft	09/01/20	2	<0.002	<0.005	<0.005	<0.01	<0.50	<50
E Wall 2 Ft	09/01/20	2	<0.002	<0.005	<0.005	<0.01	<0.50	<50
W Wall 2 Ft	09/01/20	2	<0.002	<0.005	<0.005	<0.01	<0.50	<50
Floor 3 Ft	09/01/20	3	<0.002	<0.005	<0.005	<0.01	<0.50	<50
<b>COGCC Table 910-1 Concentrations</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500*</b>	<b>500*</b>

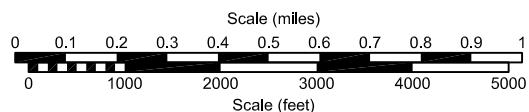
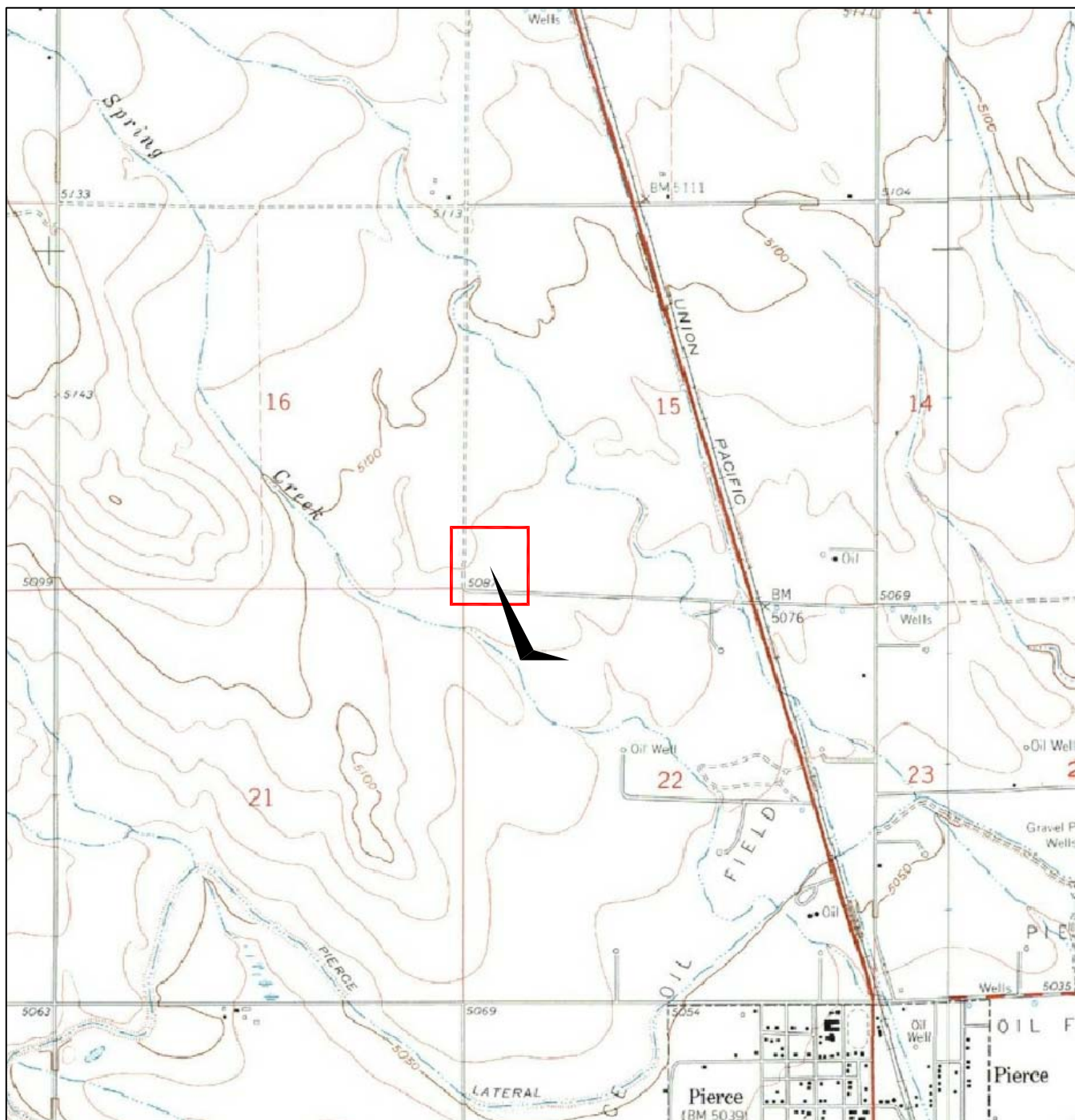
The TPH-GRO and TPH-DRO concentrations are added together; if the sum of the two is >500 mg/kg, this exceeds the COGCC Table 910-1 limit

**TABLE 2**  
**SUMMARY OF SOIL CHEMISTRY DATA**  
**GREAT WESTERN OPERATING COMPANY, LLC**  
**T&M TANK BATTERY, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C020-063**

<b>SAMPLE LOCATION</b>	<b>DATE SAMPLED</b>	<b>DEPTH ft</b>	<b>BENZENE mg/kg</b>	<b>TOLUENE mg/kg</b>	<b>ETHYL BENZENE mg/kg</b>	<b>TOTAL XYLENES mg/kg</b>	<b>TPH-GRO mg/kg</b>	<b>TPH-DRO mg/kg</b>
MW-1 12 Ft	08/04/20	12	<0.05	<0.05	<0.05	<0.05	<5.0	<50
MW-1 16 Ft	08/04/20	16	<0.05	<0.05	<0.05	<0.05	<5.0	<50
MW-1 24 Ft	08/04/20	24	<0.002	<0.002	<0.002	<0.002	<0.2	<50
SVE-1 10 Ft	09/02/20	10	<0.002	<0.002	<0.002	<0.002	<0.2	<50
SVE-1 16 Ft	09/02/20	16	<0.002	<0.002	<0.002	<0.002	<0.2	<50
SVE-1 22 Ft	09/02/20	22	<0.002	<0.002	<0.002	<0.002	<0.2	<50
<b>COGCC Table 910-1 Concentrations</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500*</b>	<b>500*</b>

The TPH-GRO and TPH-DRO concentrations are added together; if the sum of the two is >500 mg/kg, this exceeds the COGCC Table 910-1 limit

## **FIGURES**



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

**GREAT WESTERN OPERATING COMPANY**  
**T & M Tank Battery**  
 SWSW Sec. 15 T8N, R66W ~ 40.65564°, -104.77254°  
 Weld County, Colorado

Project No.  
**C020-063**

Prepared by

Drawn by  
**TA**

Date  
**9/21/20**

Reviewed by  
**PH**

Filename  
**20063T**





#### LEGEND

- |  |   |  |                      |
|--|---|--|----------------------|
|  | MONITORING WELL                         |  | CONTAINMENT BERM     |
|  | SOIL VAPOR EXTRACTION WELL              |  | CONTAINMENT WALL     |
|  | FORMER FACILITY                         |  | HYDRO-VAC EXCAVATION |
|  | ANTICIPATED GROUND WATER FLOW DIRECTION |  |                      |

Figure 2  
SITE MAP

**GREAT WESTERN OPERATING COMPANY**  
**T & M Tank Battery**  
 SWSW Sec. 15 T8N, R66W ~ 40.65564°, -104.77254°  
 Weld County, Colorado

Project No.  
**C020-063**

Prepared by

Drawn by  
**TA**

Date  
**9/21/20**

Reviewed by  
**PH**

Filename  
**20063Q**







#### LEGEND

	SOIL SAMPLE LOCATION		CONTAINMENT BERM
	MONITORING WELL		CONTAINMENT WALL
	SOIL VAPOR EXTRACTION WELL		HYDRO-VAC EXCAVATION
	FORMER FACILITY		
	ANTICIPATED GROUND WATER FLOW DIRECTION		

N Wall @ 2'	09/01/2020	SAMPLE ID & DEPTH
B	<0.002	DATE SAMPLED
T	<0.005	BENZENE (mg/kg)
E	<0.005	TOLUENE (mg/kg)
X	<0.01	ETHYLBENZENE (mg/kg)
G	<0.50	TOTAL XYLENES (mg/kg)
D	<50	TPH-GRO (mg/kg)
		TPH-DRO (mg/kg)

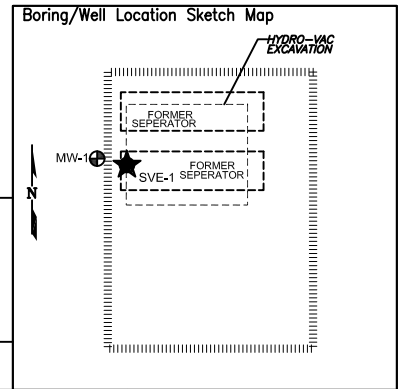
Figure 3  
**EXTENT OF EXCAVATION  
 WITH SOIL CHEMISTRY MAP**  
**GREAT WESTERN OPERATING COMPANY**  
**T & M Tank Battery**  
 SWSW Sec. 15 T8N, R66W ~ 40.65564°, -104.77254°  
 Weld County, Colorado

Project No. <b>C020-063</b>	Prepared by <b>TA</b>	Drawn by <b>TA</b>
Date <b>9/21/20</b>	Reviewed by <b>PH</b>	Filename <b>20063Q</b>



**APPENDIX A**  
**BORING/WELL LOGS**

# BORING/WELL CONSTRUCTION LOG



Page 1 of 2

Boring/Well No. <b>SVE-1</b>		Total Depth <b>22'</b>	Location <b>Great Western Operating Company T &amp; M Tank Battery SWSW Sec 15, T8N, R66W Weld County, Colorado</b>		
Project No./Name <b>C020-063 / Great Western T &amp; M Tank Battery</b>			Approved By		
Drilling Contractor/Driller <b>DrillPro</b>					
Geologist/Office <b>Fremont Environmental, Inc. / Paul Henehan</b>			Size/Type of Bit <b>2.5" direct push</b>		
Drilling Equipment/Method <b>Hurricane</b>			Sampling Method <b>direct push</b>		Start/Finish Date <b>09/02/20</b>
Well Installed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Casing Mtrl./Dia. <b>PVC/1"</b>	Screen: Type <b>Slotted</b> Mtrl. <b>PVC</b> Length <b>10'</b> Dia. <b>1"</b> Slot Size <b>0.010"</b>			
Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured

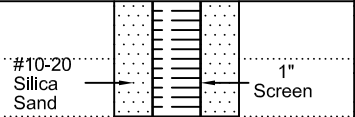

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
	Bentonite	1" Blank		Open hole from daylighting				
5			FILL	Fill to 6' then coarse sand and gravel, moist, no stain, no odor				
			S&G	Sand and gravel, moist, light odor				3
10								10
	#10-20 Silica Sand	1" Screen		Sand and gravel, moist, light odor				8
								6
15				Sand and gravel, moist, light odor				4
								3
20				Sand and gravel, moist to 22' then very firm sandy clay, no stain, no odor				2



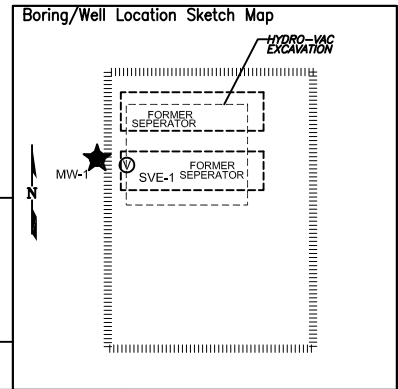
# BORING/WELL CONSTRUCTION LOG

Page 2 of 2

Boring/Well No. <b>SVE-1</b>	Location <b>Great Western Operating Company T &amp; M Tank Battery SWSW Sec 15, T8N, R66W Weld County, Colorado</b>
Project No./Name <b>C020-063 / Great Western T &amp; M Tank Battery</b>	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
				Sand and gravel, moist to 22' then very firm sandy clay, no stain, no odor, continued  TD 22'				0
25								
30								
35								
40								
45								

# BORING/WELL CONSTRUCTION LOG



Page 1 of 2

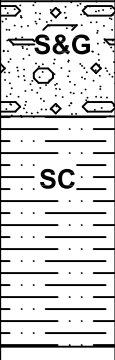
Boring/Well No. <b>MW-1</b>		Total Depth <b>26'</b>	Location <b>Great Western Operating Company T &amp; M Tank Battery SWSW Sec 15, T8N, R66W Weld County, Colorado</b>			
Project No./Name <b>C020-063 / Great Western T &amp; M Tank Battery</b>			Approved By			
Drilling Contractor/Driller <b>DrillPro</b>			Geologist/Office <b>Fremont Environmental, Inc. / Paul Henehan</b>			
Drilling Equipment/Method <b>Hurricane</b>			Size/Type of Bit <b>2.5" direct push</b>	Sampling Method <b>direct push</b>	Start/Finish Date <b>08/04/20</b>	
Well Installed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Casing Mtrl./Dia. <b>PVC/1"</b>	Screen: Type <b>Slotted</b> Mtrl. <b>PVC</b> Length <b>10'</b> Dia. <b>1"</b> Slot Size <b>0.010"</b>				
Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
	Bentonite	1" Blank	ML	Firm sandy silt with low plasticity, dry, no stain, no odor				
5				Sandy silt to 5.5' then sand and gravel, dry, no stain, no odor				1
10			S&G	Sand and gravel, moist, no stain, no odor				1
15	#10-20 Silica Sand	1" Screen		Sand and gravel with minor silt, dry, no stain, no odor				4
20				Sand and gravel with minor silt, dry, no stain, no odor				2
				Sand and gravel to 22' then very firm sandy clay moist just above clay ~ 21' - 22', no stain, no odor				1

# BORING/WELL CONSTRUCTION LOG

Page 2 of 2

Boring/Well No. <b>MW-1</b>	Location Great Western Operating Company T & M Tank Battery SWSW Sec 15, T8N, R66W Weld County, Colorado
Project No./Name <b>C020-063 / Great Western T &amp; M Tank Battery</b>	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
	#10'-20' Silica Sand	1" Screen		Sand and gravel to 22' then very firm sandy clay moist just above clay ~ 21' - 22', no stain, no odor, continued				2
25								1
				TD 26'				1
30								
35								
40								
45								

**APPENDIX B**  
**LABORATORY DOCUMENTATION**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 01, 2020

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549  
RE: GWOC - T&M Pad  
Work Order #2009001

Enclosed are the results of analyses for samples received by Summit Scientific on 09/01/20 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Michelle Clements  
Technical Director



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N. WALL 2FT	2009001-01	Soil	09/01/20 00:00	09/01/20 16:40
S. WALL 2FT	2009001-02	Soil	09/01/20 00:00	09/01/20 16:40
E. WALL 2FT	2009001-03	Soil	09/01/20 00:00	09/01/20 16:40
W. WALL 2FT	2009001-04	Soil	09/01/20 00:00	09/01/20 16:40
FLOOR 3FT	2009001-05	Soil	09/01/20 00:00	09/01/20 16:40

Summit Scientific

*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.*

# Summit Scientific

S<sub>2</sub>

2009001

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henehan

Address: P.O Box 1289

E-Mail: paulh@fremontenv.com, ethanb@fremontenv.com

City/State/Zip: Wellington, CO 80549

Bill to: PAUL

Phone: 303-956-8714

Project Name: GWOC - TAM PAD

Sampler Name: HENEHAN

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	GRO	DRO	SAR	EC	pH			
1	N. WALL 2 FT	9/1/20		1			✓			✓				✓		✓	✓					
2	S. WALL 2 FT																					
3	E. WALL 2 FT																					
4	W. WALL 2 FT																					
5	FLOOR 3 FT																					
6																						
7																						
8																						
9																						
10																						

Relinquished by: GNA/FE	Date/Time: 9/1/20 16:40	Received by: [Signature]	Date/Time: 09-01-20 17:00 MP	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/> WED AM PCZ.	Notes: ON ICE
Relinquished by:	Date/Time: MP	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 4.9 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

### Sample Receipt Checklist

S2 Work Order 2009001

Client: Fremont Environmental Client Project ID: GWOC - T&M Pad

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_

☐ ☒ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	4.9
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?	✓			Rush
Is a chain-of-custody (COC) form 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 w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			✓	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):   				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

PS

Custodian Printed Name or Initials

Signature of Custodian

9/1/20

Date/Time





Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad  
Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**N. WALL 2FT**  
**2009001-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2009011	09/01/20	09/01/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		80.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2008311	09/01/20	09/01/20	EPA 8015M	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**S. WALL 2FT**  
**2009001-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2009011	09/01/20	09/01/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		83.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008311	09/01/20	09/01/20	EPA 8015M	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**E. WALL 2FT**  
**2009001-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2009011	09/01/20	09/01/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008311	09/01/20	09/01/20	EPA 8015M	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		124 %	30-150		"	"	"	"	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**W. WALL 2FT**  
**2009001-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2009011	09/01/20	09/01/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		80.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008311	09/01/20	09/01/20	EPA 8015M	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**FLOOR 3FT**  
**2009001-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2009011	09/01/20	09/01/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2008311	09/01/20	09/01/20	EPA 8015M	

Date Sampled: **09/01/20 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Summit Scientific

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.



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch 2009011 - EPA 5030 Soil MS

##### Blank (2009011-BLK1)

Prepared & Analyzed: 09/01/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0400		114	23-173			
Surrogate: Toluene-d8	0.0348		"	0.0400		86.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

##### LCS (2009011-BS1)

Prepared & Analyzed: 09/01/20

Benzene	0.210	0.0020	mg/kg	0.200		105	70-130			
Toluene	0.165	0.0050	"	0.200		82.4	70-130			
Ethylbenzene	0.226	0.0050	"	0.200		113	70-130			
m,p-Xylene	0.406	0.010	"	0.400		102	70-130			
o-Xylene	0.201	0.0050	"	0.200		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0558		"	0.0400		139	23-173			
Surrogate: Toluene-d8	0.0346		"	0.0400		86.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.2	21-167			

##### Matrix Spike (2009011-MS1)

Source: 2009001-01

Prepared & Analyzed: 09/01/20

Benzene	0.192	0.0020	mg/kg	0.200	ND	96.1	70-130			
Toluene	0.148	0.0050	"	0.200	ND	74.0	70-130			
Ethylbenzene	0.216	0.0050	"	0.200	ND	108	70-130			
m,p-Xylene	0.390	0.010	"	0.400	0.00372	96.6	70-130			
o-Xylene	0.197	0.0050	"	0.200	ND	98.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0560		"	0.0400		140	23-173			
Surrogate: Toluene-d8	0.0330		"	0.0400		82.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0400		90.8	21-167			

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 2009011 - EPA 5030 Soil MS**

Matrix Spike Dup (2009011-MSD1)	Source: 2009001-01			Prepared & Analyzed: 09/01/20						
Benzene	0.169	0.0020	mg/kg	0.200	ND	84.7	70-130	12.7	30	
Toluene	0.163	0.0050	"	0.200	ND	81.3	70-130	9.45	30	
Ethylbenzene	0.197	0.0050	"	0.200	ND	98.7	70-130	9.15	30	
m,p-Xylene	0.359	0.010	"	0.400	0.00372	88.8	70-130	8.28	30	
o-Xylene	0.179	0.0050	"	0.200	ND	89.4	70-130	9.50	30	
Surrogate: 1,2-Dichloroethane-d4	0.0550		"	0.0400		138	23-173			
Surrogate: Toluene-d8	0.0335		"	0.0400		83.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0342		"	0.0400		85.6	21-167			

Summit Scientific

*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.*



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch 2008311 - EPA 3550A**

**Blank (2008311-BLK1)**

Prepared: 08/31/20 Analyzed: 09/01/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2008311-BS1)**

Prepared: 08/31/20 Analyzed: 09/01/20

C10-C28 (DRO) 502 50 mg/kg 500 100 70-130

**Matrix Spike (2008311-MS1)**

**Source: 2008261-07**

Prepared: 08/31/20 Analyzed: 09/01/20

C10-C28 (DRO) 884 50 mg/kg 500 441 88.7 70-130

**Matrix Spike Dup (2008311-MSD1)**

**Source: 2008261-07**

Prepared: 08/31/20 Analyzed: 09/01/20

C10-C28 (DRO) 933 50 mg/kg 500 441 98.5 70-130 5.44 20

Summit Scientific

*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.*





Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: GWOC - T&M Pad

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
09/01/20 23:42

### Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



August 12, 2020

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

Project Name - GWOC - T & M

Project Number - [none]

Attached are your analytical results for GWOC - T & M received by Origins Laboratory, Inc. August 05, 2020. This project is associated with Origins project number Y008038-01.

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

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1 12FT	Y008038-01	Soil	August 4, 2020 0:00	08/05/2020 09:57
MW-1 16FT	Y008038-02	Soil	August 4, 2020 0:00	08/05/2020 09:57
MW-1 24FT	Y008038-03	Soil	August 4, 2020 0:00	08/05/2020 09:57

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.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

1008030

page 1 of 1

Client: FREMONT  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Email Address: \_\_\_\_\_  
Project Manager: HENEHAN  
Project Name: GWOC - T & M  
Project Number: \_\_\_\_\_  
Samples Collected By: HENEHAN

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other		
MW-1 12 FT	8/4/20		1	✓					✓			BTEX, 620, DR0	1
MW-1 16 FT	↓		1	✓					✓				2
MW-1 24 FT	↓		1	✓					✓				3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <u>DNA PE</u>	Date: <u>8/5/20</u>	Time: <u>7:00</u>	Received By: <u>[Signature]</u>	Date: <u>8-5-20</u>	Time: <u>9:27</u>	Turnaround Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____								

1.6 Date Results Needed

Origins Laboratory, Inc.

*Jordan A. Merrill*

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.

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - T & M

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: Y008038

Client: Fremont

Client Project ID: GWOC-T&M

Checklist Completed by: KDK

Shipped Via: HP

Date/time completed: 08-05-2020

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid        Water        Other:       

Cooler Number/Temperature: 01, 2.6 °C        °C        °C (Describe)        °C

Thermometer ID: T003

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> ?	<u>✓</u>			
Is there ice present (document if blue ice is used)	<u>✓</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<u>✓</u>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<u>✓</u>	
Were all samples received intact <sup>(1)</sup> ?	<u>✓</u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>✓</u>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?			<u>✓</u>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>✓</u>	<u>X</u>		<u>no sample times</u>
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>✓</u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>✓</u>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>✓</u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>✓</u>	
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 subcontracted 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)			<u>✓</u>	
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) Jm

Date/Time Reviewed 8-6-20

Origins Laboratory, Inc.

Jm

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.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**MW-1 12FT**  
**8/4/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y008038-01 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.0500	mg/kg	25	B0H0413	KDK	08/04/2020	08/06/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.6 %	70-130			"	"	"
Surrogate: Toluene-d8	98.3 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B0H0506	TEM	08/05/2020	08/05/2020	U
Surrogate: o-Terphenyl	60.7 %	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.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**MW-1 16FT**  
**8/4/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y008038-02 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.0500	mg/kg	25	B0H0413	KDK	08/04/2020	08/06/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.1 %	70-130	"	"	"
Surrogate: Toluene-d8	98.7 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	70-130	"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B0H0506	TEM	08/05/2020	08/05/2020	U
Surrogate: o-Terphenyl	58.6 %	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.



Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**MW-1 24FT**  
**8/4/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y008038-03 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.0500	mg/kg	25	B0H0413	KDK	08/04/2020	08/06/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	5.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.0 %	70-130	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130	"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B0H0510	TEM	08/05/2020	08/05/2020	U
Surrogate: o-Terphenyl	58.3 %	50-150			"	"	"		

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

## 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 B0H0413 - EPA 5030 (soil)										
Blank (B0H0413-BLK1)					Prepared: 08/04/2020 Analyzed: 08/04/2020					
Benzene	ND	0.00200	mg/kg							U
Toluene	ND	0.00200	"							U
Ethylbenzene	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		99.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0413 - EPA 5030 (soil)**

**LCS (B0H0413-BS1)**

Prepared: 08/04/2020 Analyzed: 08/04/2020

Benzene	0.106	0.00200	mg/kg	0.100		106	70-130			
Toluene	0.110	0.00200	"	0.100		110	70-130			
Ethylbenzene	0.112	0.00200	"	0.100		112	70-130			
m,p-Xylene	0.226	0.00400	"	0.200		113	70-130			
o-Xylene	0.112	0.00200	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0413 - EPA 5030 (soil)**

Matrix Spike (B0H0413-MS1)		Source: Y008030-01			Prepared: 08/04/2020 Analyzed: 08/04/2020					
Benzene	0.108	0.00200	mg/kg	0.100	ND	108	70-130			
Toluene	0.111	0.00200	"	0.100	ND	111	70-130			
Ethylbenzene	0.115	0.00200	"	0.100	ND	115	70-130			
m,p-Xylene	0.231	0.00400	"	0.200	ND	115	70-130			
o-Xylene	0.113	0.00200	"	0.100	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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.*

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0413 - EPA 5030 (soil)**

Matrix Spike Dup (B0H0413-MSD1)		Source: Y008030-01			Prepared: 08/04/2020 Analyzed: 08/05/2020					
Benzene	0.117	0.00200	mg/kg	0.100	ND	117	70-130	8.32	20	
Toluene	0.120	0.00200	"	0.100	ND	120	70-130	7.65	20	
Ethylbenzene	0.121	0.00200	"	0.100	ND	121	70-130	5.29	20	
m,p-Xylene	0.244	0.00400	"	0.200	ND	122	70-130	5.39	20	
o-Xylene	0.121	0.00200	"	0.100	ND	121	70-130	7.49	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.5	70-130			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0506 - EPA 3580

Blank (B0H0506-BLK1)

Prepared: 08/05/2020 Analyzed: 08/05/2020

Diesel (C10-C28)	ND	25.0	mg/kg							U
Surrogate: o-Terphenyl	17		"	25.0		68.0	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0506 - EPA 3580

**LCS (B0H0506-BS1)**

Prepared: 08/05/2020 Analyzed: 08/05/2020

Diesel (C10-C28)	914	50.0	mg/kg	1000		91.4	70-130			
Surrogate: o-Terphenyl	39		"	50.0		77.8	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0506 - EPA 3580

Matrix Spike (B0H0506-MS1)		Source: Y008036-01			Prepared: 08/05/2020 Analyzed: 08/05/2020					
Diesel (C10-C28)	794	50.0	mg/kg	1000	ND	79.4	70-130			
Surrogate: o-Terphenyl	32		"	50.0		64.6	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0506 - EPA 3580

Matrix Spike Dup (B0H0506-MSD1)		Source: Y008036-01			Prepared: 08/05/2020 Analyzed: 08/05/2020					
Diesel (C10-C28)	902	50.0	mg/kg	1000	ND	90.2	70-130	12.7	35	
Surrogate: o-Terphenyl	38		"	50.0		76.5	50-150			

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Fremont Environmental  
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Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0510 - EPA 3580

Blank (B0H0510-BLK1)

Prepared: 08/05/2020 Analyzed: 08/05/2020

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	34		"	50.0		67.5	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
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Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0510 - EPA 3580

**LCS (B0H0510-BS1)**

Prepared: 08/05/2020 Analyzed: 08/05/2020

Diesel (C10-C28)	911	50.0	mg/kg	1000		91.1	70-130			
Surrogate: o-Terphenyl	36		"	50.0		72.6	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0510 - EPA 3580

Matrix Spike (B0H0510-MS1)		Source: Y008048-05			Prepared: 08/05/2020 Analyzed: 08/05/2020					
Diesel (C10-C28)	898	50.0	mg/kg	1000	ND	89.8	70-130			
Surrogate: o-Terphenyl	38		"	50.0		76.0	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0H0510 - EPA 3580

Matrix Spike Dup (B0H0510-MSD1)		Source: Y008048-05			Prepared: 08/05/2020 Analyzed: 08/05/2020					
Diesel (C10-C28)	984	50.0	mg/kg	1000	ND	98.4	70-130	9.09	35	
Surrogate: o-Terphenyl	39		"	50.0		78.3	50-150			

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

### 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 at a wet weight basis.

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.*



September 11, 2020

Fremont Environmental

Paul Henehan

8305 6th St, PO Box 1289

Wellington CO 80549

Project Name - GWOC - T & M

Project Number - [none]

Attached are your analytical results for GWOC - T & M received by Origins Laboratory, Inc. September 03, 2020. This project is associated with Origins project number Y009051-01.

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

Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - T & M

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-1 10 FT	Y009051-01	Soil	September 2, 2020 0:00	09/03/2020 10:30
SVE-1 16 FT	Y009051-02	Soil	September 2, 2020 0:00	09/03/2020 10:30
SVE-1 22 FT	Y009051-03	Soil	September 2, 2020 0:00	09/03/2020 10:30

Origins Laboratory, Inc.



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Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

www.originslaboratory.com

page 1 of 1

1009051

ORIGINS LABORATORY, INC

Client: FREMONT  
Address:  
Telephone Number:  
Email Address:

Project Manager: HENEHAN  
Project Name: GWOC - T & M PAD  
Project Number: 0020-063  
Samples Collected By: HENEHAN

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Suspended Particulate		
SYE-1 10 FT	9/2/20		1									1
SYE-1 16 FT	9/2/20		1									2
SYE-1 22 FT	9/2/20		1									3
												4
												5
												6
												7
												8
												9
												10

Requisitioned By: [Signature]  
Date: 9/3/20  
Time: 1:31

Received By: [Signature]  
Date: 9/3/20  
Time: 1:31

Turnaround Time:  
Same Day ☐ 24 Hr ☐  
48 Hr ☐ 72 Hr ☐  
Standard ☒

7.7 Date Results Needed

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

*Jordan A. Merrill*

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.



Fremont Environmental

8305 6th St, PO Box 1289

Wellington CO 80549

Paul Henehan

Project Number: [none]

Project: GWOC - T & M

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

Sample Receipt Checklist

Origins Work Order: Y009051 Client: Fremont  
Client Project ID: GWOC-T & M Pad

Checklist Completed by: KDK Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Date/time completed: 09-03-20 Airbill #: N/A

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

Cooler Number/Temperature: 1, 2.7 °C 1 °C 1 °C (Describe): \_\_\_\_\_  
Thermometer ID: T003

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> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" 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 checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
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 subcontracted 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 <sub>2</sub> -NaOH)			<input checked="" type="checkbox"/>	
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: pm (Project Manager) Date/Time Reviewed: 9-4-20

Origins Laboratory, Inc.

*Jordan A. Merrill*

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.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**SVE-1 10 FT**  
**9/2/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y009051-01 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.00200	mg/kg	1	B010308	KDK	09/03/2020	09/04/2020	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	89.7 %	70-130	"	"	"
Surrogate: Toluene-d8	93.4 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.3 %	70-130	"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B010407	TEM	09/04/2020	09/04/2020	U
Surrogate: o-Terphenyl	71.0 %	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.

Fremont Environmental  
8305 6th St, PO Box 1289  
Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**SVE-1 16 FT**  
**9/2/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y009051-02 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.00200	mg/kg	1	B010308	KDK	09/03/2020	09/04/2020	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	91.1 %	70-130	"	"	"
Surrogate: Toluene-d8	92.7 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.7 %	70-130	"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B010407	TEM	09/04/2020	09/04/2020	U
Surrogate: o-Terphenyl	71.0 %	50-150			"		"	"	

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Wellington CO 80549

Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**SVE-1 22 FT**  
**9/2/2020 12:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y009051-03 (Soil)**

**BTEX/TVPH by EPA 8260D**

Benzene	ND	0.00200	mg/kg	1	B010308	KDK	09/03/2020	09/04/2020	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	91.5 %	70-130			"	"	"
Surrogate: Toluene-d8	92.8 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	98.9 %	70-130			"	"	"

**Diesel Range Organics (DRO/TEPH) by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B010407	TEM	09/04/2020	09/04/2020	U
Surrogate: o-Terphenyl	71.6 %	50-150			"	"	"		

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**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 B0I0308 - EPA 5030 (soil)</b>										
<b>Blank (B0I0308-BLK1)</b>					Prepared: 09/03/2020 Analyzed: 09/03/2020					
Benzene	ND	0.00200	mg/kg							U
Toluene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.5	70-130			

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**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 B0I0308 - EPA 5030 (soil)**

**LCS (B0I0308-BS1)**

Prepared: 09/03/2020 Analyzed: 09/03/2020

Benzene	0.0506	0.00200	mg/kg	0.0500		101	70-130			
Toluene	0.0468	0.00200	"	0.0500		93.6	70-130			
Ethylbenzene	0.0469	0.00200	"	0.0500		93.9	70-130			
m,p-Xylene	0.0963	0.00400	"	0.100		96.3	70-130			
o-Xylene	0.0483	0.00200	"	0.0500		96.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B010308 - EPA 5030 (soil)**

Matrix Spike (B010308-MS1)		Source: Y009044-09			Prepared: 09/03/2020 Analyzed: 09/03/2020					
Benzene	0.0585	0.00200	mg/kg	0.0500	ND	117	70-130			
Toluene	0.0517	0.00200	"	0.0500	0.00200	99.4	70-130			
Ethylbenzene	0.0509	0.00200	"	0.0500	ND	102	70-130			
m,p-Xylene	0.103	0.00400	"	0.100	0.00200	101	70-130			
o-Xylene	0.0510	0.00200	"	0.0500	0.00100	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		82.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Project Number: [none]  
Project: GWOC - T & M

**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 B0I0308 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B0I0308-MSD1)</b>		<b>Source: Y009044-09</b>			Prepared: 09/03/2020 Analyzed: 09/03/2020					
Benzene	0.0562	0.00200	mg/kg	0.0500	ND	112	70-130	4.12	20	
Toluene	0.0484	0.00200	"	0.0500	0.00200	92.9	70-130	6.47	20	
Ethylbenzene	0.0493	0.00200	"	0.0500	ND	98.6	70-130	3.27	20	
m,p-Xylene	0.0990	0.00400	"	0.100	0.00200	97.0	70-130	4.27	20	
o-Xylene	0.0491	0.00200	"	0.0500	0.00100	96.2	70-130	3.79	20	
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		83.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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**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 B0I0407 - EPA 3550B

Blank (B0I0407-BLK1)

Prepared: 09/04/2020 Analyzed: 09/04/2020

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	41		"	50.0		81.6	50-150			

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Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

**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 B0I0407 - EPA 3550B

**LCS (B0I0407-BS1)**

Prepared: 09/04/2020 Analyzed: 09/04/2020

Diesel (C10-C28)	1110	50.0	mg/kg	1000		111	70-130			
Surrogate: o-Terphenyl	52		"	50.0		105	50-150			

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Paul Henehan  
Project Number: [none]  
Project: GWOC - T & M

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 B0I0407 - EPA 3550B

Matrix Spike (B0I0407-MS1)		Source: Y009054-01			Prepared: 09/04/2020 Analyzed: 09/04/2020					
Diesel (C10-C28)	991	50.0	mg/kg	1000	ND	99.1	70-130			
Surrogate: o-Terphenyl	44		"	50.0		88.0	50-150			

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Project Number: [none]  
Project: GWOC - T & M

**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 B0I0407 - EPA 3550B

Matrix Spike Dup (B0I0407-MSD1)		Source: Y009054-01			Prepared: 09/04/2020 Analyzed: 09/04/2020					
Diesel (C10-C28)	970	50.0	mg/kg	1000	ND	97.0	70-130	2.08	35	
Surrogate: o-Terphenyl	45		"	50.0		90.5	50-150			

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Project: GWOC - T & M

### 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 at a wet weight basis.

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