

June 06, 2018

SRC Energy
Dave Castro
5400 W 11th Street
Greely CO 80634

Project Name - McGlothlin TB Vault Pit

Project Number - [none]

Attached are your analytical results for McGlothlin TB Vault Pit received by Origins Laboratory, Inc. April 19, 2018. This project is associated with Origins project number Y804324-01.

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



SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: McGlothlin TB Vault Pit

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WSS @ 2.5'	Y804324-01	Soil	April 18, 2018 11:40	04/19/2018 16:24
BSS @ 6'	Y804324-02	Soil	April 18, 2018 11:49	04/19/2018 16:24

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greeley CO 80634

Dave Castro
 Project Number: [none]
 Project: McClothlin TB Vault Pit

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1804324

Client: SRC Energy

Client Project ID: McClothlin TB Vault Pit

Checklist Completed by: JG

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

Date/time completed: 4/19/12

Airbill #: D/A

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

Cooler Number/Temperature: 1 12.5 °C 1 °C 1 °C 1 °C

Thermometer ID: 2003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	/			
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 ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	/	X		U ₁₀ pH
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		/		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 4-20-12

Origins Laboratory, Inc.

Jefe Pellegrini

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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: McClothlin TB Vault Pit

WSS @ 2.5'
4/18/2018 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y804324-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8D1908	04/19/2018	04/19/2018	U
<i>Surrogate: o-Terphenyl</i>	74.2 %	59-131			"	"	"	

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8D1907	04/19/2018	04/19/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	83.9 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	98.6 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	94.5 %	70-130			"	"	"	

Metals (Saturated Paste Prep)

Calcium	1.5		me/L	1	'[none]'	04/23/2018	04/23/2018	
Magnesium	1.01		"	"	"	"	"	
Sodium	0.35		"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.75		pH Units	1	B8D1909	04/19/2018	04/19/2018	
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SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: McGlothlin TB Vault Pit

WSS @ 2.5'

4/18/2018 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y804324-01 (Soil)

SAR by 20B Saturated Paste

SAR	0.31			1	'[none]'	04/23/2018	04/23/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0658		mmhos/cm	1	B8D1910	04/19/2018	04/19/2018	
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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: McGlothlin TB Vault Pit

BSS @ 6'
4/18/2018 11:49:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y804324-02 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015C

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8D1908	04/19/2018	04/19/2018	U
<i>Surrogate: o-Terphenyl</i>	73.7 %	59-131			"	"	"	

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8D1907	04/19/2018	04/19/2018	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	88.3 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	98.4 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	95.5 %	70-130			"	"	"	

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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: McGlothlin TB Vault Pit

Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1907 - EPA 5030 (soil)

Blank (B8D1907-BLK1)

Prepared: 04/19/2018 Analyzed: 04/19/2018

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		84.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.2	70-130			

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Jen Pellegrini, Project Manager

SRC Energy
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Dave Castro
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Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1907 - EPA 5030 (soil)

LCS (B8D1907-BS1)

Prepared: 04/19/2018 Analyzed: 04/19/2018

Benzene	0.113	0.002	mg/kg	0.100		113	77.1-124			
Toluene	0.110	0.002	"	0.100		110	74.5-128			
Ethylbenzene	0.109	0.002	"	0.100		109	66.4-127			
m,p-Xylene	0.219	0.004	"	0.200		109	76.6-124			
o-Xylene	0.108	0.002	"	0.100		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		82.5	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		96.8	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1907 - EPA 5030 (soil)

Matrix Spike (B8D1907-MS1)	Source: Y804324-01			Prepared: 04/19/2018 Analyzed: 04/19/2018						
Benzene	0.122	0.002	mg/kg	0.100	ND	122	71.8-126			
Toluene	0.120	0.002	"	0.100	ND	120	65.1-130			
Ethylbenzene	0.119	0.002	"	0.100	ND	119	62.2-130			
m,p-Xylene	0.237	0.004	"	0.200	ND	118	46.5-137			
o-Xylene	0.116	0.002	"	0.100	ND	116	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		84.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.8	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1907 - EPA 5030 (soil)

Matrix Spike Dup (B8D1907-MSD1)	Source: Y804324-01			Prepared: 04/19/2018 Analyzed: 04/19/2018						
Benzene	0.113	0.002	mg/kg	0.100	ND	113	71.8-126	7.69	11.3	
Toluene	0.111	0.002	"	0.100	ND	111	65.1-130	7.50	15.4	
Ethylbenzene	0.112	0.002	"	0.100	ND	112	62.2-130	6.19	19.6	
m,p-Xylene	0.221	0.004	"	0.200	ND	110	46.5-137	7.04	19.2	
o-Xylene	0.110	0.002	"	0.100	ND	110	54.2-134	5.69	17.9	
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		83.6	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	70-130			

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 Project: McGlothlin TB Vault Pit

Volatile Organic Compounds by GC/MS SW846 8260C - 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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Extractable Petroleum Hydrocarbons by 8015C - 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 B8D1908 - EPA 3550B

Blank (B8D1908-BLK1)

Prepared: 04/19/2018 Analyzed: 04/20/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	37		"	50.0		73.6	59-131			

LCS (B8D1908-BS1)

Prepared: 04/19/2018 Analyzed: 04/19/2018

Diesel (C10-C28)	962	50.0	mg/kg	1000		96.2	64-121			
Surrogate: o-Terphenyl	51		"	50.0		101	59-131			

Matrix Spike (B8D1908-MS1)

Source: Y804324-01

Prepared: 04/19/2018 Analyzed: 04/19/2018

Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	53-125			
Surrogate: o-Terphenyl	45		"	50.0		89.2	59-131			

Matrix Spike Dup (B8D1908-MSD1)

Source: Y804324-01

Prepared: 04/19/2018 Analyzed: 04/19/2018

Diesel (C10-C28)	982	50.0	mg/kg	1000	ND	98.2	53-125	8.62	20	
Surrogate: o-Terphenyl	47		"	50.0		93.5	59-131			

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SRC Energy
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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: McGlothlin TB Vault Pit

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B8D1909 - NO PREP										
Duplicate (B8D1909-DUP1)		Source: Y804324-01			Prepared: 04/19/2018 Analyzed: 04/19/2018					
pH	8.56		pH Units		8.75			2.20	25	
Batch B8D1910 - NO PREP										
Blank (B8D1910-BLK1)		Prepared: 04/19/2018 Analyzed: 04/19/2018								
Specific Conductance (EC)	0.00350		mmhos/cm							
Duplicate (B8D1910-DUP1)		Source: Y804324-01			Prepared: 04/19/2018 Analyzed: 04/19/2018					
Specific Conductance (EC)	0.0716		mmhos/cm		0.0658			8.44	25	

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Jen Pellegrini, Project Manager

SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: McGlothlin TB Vault Pit

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.



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Jen Pellegrini, Project Manager