

January 16, 2020

SRC Energy

Dave Castro

5400 W 11th Street

Greely

CO 80634

Project Name - UPRC 27-14C TB Vault Pit

Project Number - [none]

Attached are your analytical results for UPRC 27-14C TB Vault Pit received by Origins Laboratory, Inc. January 09, 2020. This project is associated with Origins project number Y001114-01.

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: UPRC 27-14C TB Vault Pit

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ESS @ 2.5'	Y001114-01	Soil	January 9, 2020 9:26	01/09/2020 15:54
BSS @ 6'	Y001114-02	Soil	January 9, 2020 9:32	01/09/2020 15:54

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: UPRC 27-14C TB Vault Pit

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 400114

Client: SRC Energy

Checklist Completed by: [Signature]

Client Project ID: UPRC 27-14C TB Vault Pit

Date/time completed: 1-9-20

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

Airbill #: NP

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

Cooler Number/Temperature: 136 °C / _____ °C / _____ °C (Describe)

Thermometer ID: 1023

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 1/10/20

Origins Laboratory, Inc.

[Signature]

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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

ESS @ 2.5'

1/9/2020 9:26:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y001114-01 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	B0A0901	KDK	01/09/2020	01/10/2020	U
Toluene	ND	0.0500	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.0500	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	39.5	5.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	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	B0A1003	KDK	01/10/2020	01/10/2020	U
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Surrogate: o-Terphenyl	76.0 %	50-150			"	"	"	"	
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Metals (Saturated Paste Prep)

Calcium	2.89		me/L	1	[none]		01/10/2020	01/15/2020	
Magnesium	1.40		"	"	"		"	"	
Sodium	0.57		"	"	"		"	"	

pH in Soil by EPA 9045D

pH	8.18		pH Units	1	B0A0909	KDK	01/09/2020	01/09/2020	
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SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

ESS @ 2.5'

1/9/2020 9:26:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.
 Y001114-01 (Soil)**

SAR by 20B Saturated Paste

SAR	0.39			1	[none]		01/10/2020	01/15/2020	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0518	0.00504	mmhos/cm	1	B0A0910	KDK	01/09/2020	01/09/2020	
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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

BSS @ 6'
1/9/2020 9:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y001114-02 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.0500	mg/kg	25	B0A0901	KDK	01/09/2020	01/10/2020	U
Toluene	0.208	0.0500	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.0500	"	"	"	KDK	"	"	U
Xylenes, total	0.791	0.0500	"	"	"	KDK	"	"	
Gasoline Range Hydrocarbons	41.1	5.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.0 %	70-130			"	"	"	"	

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

Diesel (C10-C28)	173	50.0	mg/kg	1	B0A1003	KDK	01/10/2020	01/10/2020	
Surrogate: o-Terphenyl	81.8 %	50-150			"	"	"	"	

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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A0901 - EPA 5030 (soil)

Blank (B0A0901-BLK1)

Prepared: 01/09/2020 Analyzed: 01/09/2020

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	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

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Jen Pellegrini, Project Manager

SRC Energy
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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A0901 - EPA 5030 (soil)

LCS (B0A0901-BS1)

Prepared: 01/09/2020 Analyzed: 01/09/2020

Benzene	0.0984	0.00200	mg/kg	0.100		98.4	70-130			
Toluene	0.106	0.00200	"	0.100		106	70-130			
Ethylbenzene	0.107	0.00200	"	0.100		107	70-130			
m,p-Xylene	0.214	0.00400	"	0.200		107	70-130			
o-Xylene	0.102	0.00200	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.1	70-130			

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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A0901 - EPA 5030 (soil)

Matrix Spike (B0A0901-MS1)	Source: Y001084-01			Prepared: 01/09/2020 Analyzed: 01/09/2020						
Benzene	0.116	0.00200	mg/kg	0.100	ND	116	70-130			
Toluene	0.116	0.00200	"	0.100	ND	116	70-130			
Ethylbenzene	0.114	0.00200	"	0.100	0.00350	110	70-130			
m,p-Xylene	0.232	0.00400	"	0.200	ND	116	70-130			
o-Xylene	0.113	0.00200	"	0.100	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Dave Castro
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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 B0A0901 - EPA 5030 (soil)

Matrix Spike Dup (B0A0901-MSD1)	Source: Y001084-01			Prepared: 01/09/2020 Analyzed: 01/09/2020						
Benzene	0.118	0.00200	mg/kg	0.100	ND	118	70-130	1.03	20	
Toluene	0.121	0.00200	"	0.100	ND	121	70-130	4.15	20	
Ethylbenzene	0.121	0.00200	"	0.100	0.00350	118	70-130	6.24	20	
m,p-Xylene	0.245	0.00400	"	0.200	ND	122	70-130	5.51	20	
o-Xylene	0.117	0.00200	"	0.100	ND	117	70-130	3.71	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A1003 - EPA 3580										
Blank (B0A1003-BLK1)										
					Prepared: 01/10/2020 Analyzed: 01/10/2020					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	34		"	50.0		68.3	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A1003 - EPA 3580

LCS (B0A1003-BS1)

Prepared: 01/10/2020 Analyzed: 01/10/2020

Diesel (C10-C28)	864	50.0	mg/kg	1000		86.4	70-130			
Surrogate: o-Terphenyl	44		"	50.0		88.6	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A1003 - EPA 3580

Matrix Spike (B0A1003-MS1)	Source: Y001113-01			Prepared: 01/10/2020 Analyzed: 01/10/2020						
Diesel (C10-C28)	963	50.0	mg/kg	1000	ND	96.3	70-130			
Surrogate: o-Terphenyl	45		"	50.0		90.2	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
 5400 W 11th Street
 Greely CO 80634

Dave Castro
 Project Number: [none]
 Project: UPRC 27-14C TB Vault Pit

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 B0A1003 - EPA 3580

Matrix Spike Dup (B0A1003-MSD1)	Source: Y001113-01		Prepared: 01/10/2020 Analyzed: 01/10/2020							
Diesel (C10-C28)	930	50.0	mg/kg	1000	ND	93.0	70-130	3.45	35	
Surrogate: o-Terphenyl	45		"	50.0		89.6	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

SRC Energy
5400 W 11th Street
Greely CO 80634

Dave Castro
Project Number: [none]
Project: UPRC 27-14C 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