

**PDC Energy, Inc.**  
**First Quarter 2021 Remediation Summary**

February 26, 2021

Former Booth 11, 12, 21-31U & 31AU Tank Battery  
NWNW Section 31 T4N R63W  
Remediation # 4826

This remediation summary has been prepared by Tasman Geosciences, Inc. (Tasman) on behalf of PDC Energy, Inc. (PDC) to summarize remediation and sampling activities conducted during 2020 and the first quarter 2021 at the former Booth 11, 12, 21-31U & 31AU tank battery (Site).

**Site Background**

On July 28, 2008, petroleum hydrocarbon impacts were discovered below the dump lines during routine maintenance at the Booth 11, 12, 21, 22-31U & 31AU tank battery. Following the discovery, an estimated 3,800 cubic yards of impacted material was removed from the source area and transported to a licensed disposal facility under PDC waste manifests. The approximate dimensions of the excavation were 40 feet wide by 50 feet long with a depth of 35 feet below ground surface (bgs). Excavation oversight and sampling were conducted by LT Environmental (LTE). Soil sample results indicated that organic compound concentrations were in exceedance of COGCC Table 910-1 standards within the final extent of the excavation.

Following initial excavation activities, a site investigation was conducted by LTE to delineate the extent of remaining hydrocarbon impacts and install a passive soil vapor extraction (SVE) well. The 2008 excavation extent and SVE well location are illustrated on Figure 1. A Form 27 Site Investigation and Remediation Work Plan was submitted to the COGCC on March 3, 2009, and Remediation Number 4826 was issued to the project.

A supplemental site investigation was conducted by Tasman Geosciences between May 6 and June 4, 2019, to determine the extent of potential hydrocarbon impacts and evaluate lithologic conditions adjacent to the 2008 release. Based on the data collected during the assessment, PDC has selected monitored natural attenuation (MNA) as the remedial strategy for this site.

### **Current Remediation Activities**

Quarterly vapor samples are collected from the existing SVE well to monitor VOC concentrations and evaluate the passive system operation and efficacy. Vapor samples are submitted for laboratory analysis of benzene and TPH – GRO by EPA Method TO-15. Analytical results are summarized in Table 1 and laboratory reports are included in Attachment A.

### **Path Forward**



Monitored natural attenuation (MNA) was selected as the remediation strategy during the second quarter 2019 and will continue as the selected remediation strategy through the second quarter 2021.

Second quarter 2021 vapor sampling will be conducted during May 2021.





**Legend**

-  Excavation Extent (LTE – 2008)
-  8-Inch Passive SVE Well (LTE – 2008)

**Notes**

All locations are approximate unless otherwise noted.

Excavation extent approximated based on March 31, 2009, LT Environmental, Inc. (LTE) report.

SVE – Soil Vapor Extraction

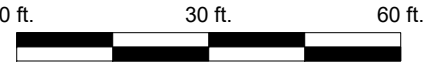


Image Source: Google Earth; 2017 Google  
Projection: WGS 84 UTM Zone 13 North



DATE: February 26, 2021

DESIGNED BY: B. Nelson

DRAWN BY: B. Nelson



**Tasman Geosciences, Inc.**  
6899 Pecos Street – Unit C  
Denver, CO 80221

**PDC Energy, Inc. – DJ Basin**  
**Booth 11, 12, 21, 22-31U & 31AU Tank Battery**  
NWNW, Section 31, Township 4 North, Range 63 West  
Weld County, Colorado

REMEDIATION WELL  
LOCATION MAP

FIGURE  
1



**TABLE 1**  
**BOOTH 11, 12, 21, 22, 31U 31AU**  
**VAPOR ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Benzene ( $\mu\text{g}/\text{m}^3$ )	Toluene ( $\mu\text{g}/\text{m}^3$ )	Ethylbenzene ( $\mu\text{g}/\text{m}^3$ )	Total Xylenes ( $\mu\text{g}/\text{m}^3$ )	TVPH - GRO ( $\mu\text{g}/\text{m}^3$ )
V001	7/25/2019	<5.66	14.2	<10.1	43.7	3,570
V001	10/17/2019	3,510	2,810	<193	5,040	1,460,000
V001	1/24/2020	163	212	<125	2,195	542,000
V001	4/27/2020	328	1,320	385	4,568	199,000
V001	8/19/2020	57.8	50.9	<10.0	416.3	22,400
V001	11/11/2020	72.7	42.1	10.2	116.0	2,550
V001	2/4/2021	12,800	18,500	<1,50	37,620	3,650,000

**Notes:**

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics (C6 - C10)

$\mu\text{g}/\text{m}^3$  = Micrograms per cubic meter

## **ATTACHMENT A**



January 30, 2020

Tasman Geosciences

Brock Nelson

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - PDC - Booth H11,12,21-31U &  
31AU**

**Project Number - [none]**

Attached are your analytical results for PDC - Booth H11,12,21-31U & 31AU received by Origins Laboratory, Inc. January 27, 2020. This project is associated with Origins project number Y001357-01.

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V001	Y001357-01	Air	January 24, 2020 12:15	01/27/2020 08:50

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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**ORIGINS** LABORATORY, INC

www.originslaboratory.com

page 1 of 1

1001357

Client: PDC/Tasman  
Address: 6855 W 119th Ave  
Broomfield CO

Project Manager: Brock Nelson  
Project Name: Booth H11,12,21-31U & 31AU  
Project Number:  
Samples Collected By: Ty G.

Telephone Number:  
Email Address: Brock.Nelson@tasman-geo.com

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			
1001	1-24-20	12:15	1	X										

Relinquished By: [Signature]

Relinquished By: [Signature]

Date: 1-27-20

Date: 02-20-20

Time: 8:52

Time: 8:52

Received By: [Signature]

Received By: [Signature]

Date: 01-27-20

Date: 01-27-20

Time: 08:50

Time: 08:50

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

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y001357

Client: Tasman

Client Project ID: Booth H11,12,21,31U + 31AU

Checklist Completed by: JG

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

Date/time completed: 1/27/2020

Airbill #: N/A

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

Cooler Number/Temperature: 1 / - °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> ?			<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+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 (Project Manager) [Signature]

Date/Time Reviewed 1/28/20

Origins Laboratory, Inc.

[Signature]

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

V001

1/24/2020 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y001357-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	542000	50000	ug/m <sup>3</sup> Air	250	B0A2711	DJL	01/27/2020	01/27/2020	
Benzene	163	70.0	"	25	"	DJL	"	01/27/2020	
Toluene	212	125	"	"	"	DJL	"	"	
Ethylbenzene	ND	125	"	"	"	DJL	"	"	U
m,p-Xylene	2030	475	"	"	"	DJL	"	"	
o-Xylene	165	118	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	145 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0A2711 - Default Prep - Air</b>										
<b>Blank (B0A2711-BLK1)</b>					Prepared: 01/27/2020 Analyzed: 01/27/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	11.0		ppbv	10.0		110	70-130			
Surrogate: Toluene-d8	9.66		"	10.0		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	9.40		"	10.0		94.0	70-130			
<b>LCS (B0A2711-BS1)</b>					Prepared: 01/27/2020 Analyzed: 01/27/2020					T
Benzene	35.1	2.80	ug/m <sup>3</sup> Air	31.9		110	70-130			
Toluene	44.3	5.00	"	37.7		118	70-130			
Ethylbenzene	42.6	5.00	"	43.4		98.0	70-130			
m,p-Xylene	191	19.0	"	174		110	70-130			
o-Xylene	40.9	4.70	"	43.4		94.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.24		ppbv	10.0		92.4	70-130			
Surrogate: Toluene-d8	9.99		"	10.0		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	9.69		"	10.0		96.9	70-130			
<b>LCS Dup (B0A2711-BSD1)</b>					Prepared: 01/27/2020 Analyzed: 01/27/2020					T
Benzene	34.5	2.80	ug/m <sup>3</sup> Air	31.9		108	70-130	1.83	25	
Toluene	43.9	5.00	"	37.7		116	70-130	1.03	25	
Ethylbenzene	43.0	5.00	"	43.4		99.1	70-130	1.12	25	
m,p-Xylene	194	19.0	"	174		112	70-130	1.62	25	
o-Xylene	43.5	4.70	"	43.4		100	70-130	6.07	25	
Surrogate: 1,2-Dichloroethane-d4	9.28		ppbv	10.0		92.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**Volatile Organic Compounds by TO-15 in Air - 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 B0A2711 - Default Prep - Air

LCS Dup (B0A2711-BSD1)

Prepared: 01/27/2020 Analyzed: 01/27/2020

T

Surrogate: Toluene-d8	10.2		ppbv	10.0		102	70-130			
Surrogate: 4-Bromofluorobenzene	9.20		"	10.0		92.0	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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### Notes and Definitions

- U Sample is Non-Detect.
- T The TO-15 analysis is not part of the NELAC accreditation
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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.*



May 05, 2020

Tasman Geosciences

Brock Nelson

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - PDC - Booth H11,12,21-31U &  
31AU**

**Project Number - [none]**

Attached are your analytical results for PDC - Booth H11,12,21-31U & 31AU received by Origins Laboratory, Inc. April 28, 2020. This project is associated with Origins project number Y004379-01.

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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V001	Y004379-01	Air	April 27, 2020 14:00	04/28/2020 12:00

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

[www.originslaboratory.com](http://www.originslaboratory.com)

Y004379


Project Manager: Eric Nelson  
Project Name: Booth 117, 21, 22-31u & 31Au  
Project Number: \_\_\_\_\_  
Samples Collected By: Ty Callaway

Telephone Number: 710.246-2792

Email Address: Brielson@farnham-qld.com.au

Client: PDL/Tisman  
Address: 1955 W 19th AVE  
Greenfield Colorado  
Number: 710-244-2292  
Address: Bielefeld Tazman-960,0000

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | 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			
VCO1	4-27-20	1400	1	X						10393		Other	7	1
														2
														3
														4
														5
														6
														7
														8
														9
														10
Relinquished By: Ty Colby	Date: 4-28-20	Time: 11:56	Received By: 	Date: 4/28/20	Time: 1200	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>								

Date Results Needed

Temp Received- 1/14

Origins Laboratory, Inc.

Intent

*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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y004379

Client: Tasman

Client Project ID: PDC Booth 11,12,21,22-31U & 31AU

Checklist Completed by: JB KDK

Shipped Via: HD

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

Date/time completed: 04/29/2020

Airbill #: N/A

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

Cooler Number/Temperature: 1 N/A °C 1 °C 1 °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> ?			<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+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 (Project Manager) JB

4-30-20  
Date/Time Reviewed

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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

V001

4/27/2020 2:00:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y004379-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	199000	50000	ug/m <sup>3</sup> Air	250	B0D2901	DJL	04/29/2020	05/01/2020
Benzene	328	70.0	"	25	"	DJL	"	05/01/2020
Toluene	1320	125	"	"	"	DJL	"	"
Ethylbenzene	385	125	"	"	"	DJL	"	"
m,p-Xylene	3740	475	"	"	"	DJL	"	"
o-Xylene	828	118	"	"	"	DJL	"	"
Surrogate: 1,2-Dichloroethane-d4	98.2 %	70-130			"	"		"
Surrogate: Toluene-d8	100 %	70-130			"	"		05/01/2020
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"		05/01/2020

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0D2901 - Default Prep - Air</b>										
<b>Blank (B0D2901-BLK1)</b>					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.3		ppbv	10.0		103	70-130			
Surrogate: Toluene-d8	9.97		"	10.0		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	9.71		"	10.0		97.1	70-130			
<b>LCS (B0D2901-BS1)</b>					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Benzene	29.8	2.80	ug/m <sup>3</sup> Air	31.9		93.4	70-130			
Toluene	31.5	5.00	"	37.7		83.6	70-130			
Ethylbenzene	37.4	5.00	"	43.4		86.2	70-130			
m,p-Xylene	158	19.0	"	174		90.8	70-130			
o-Xylene	37.3	4.70	"	43.4		86.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.26		ppbv	10.0		92.6	70-130			
Surrogate: Toluene-d8	9.47		"	10.0		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	70-130			
<b>LCS Dup (B0D2901-BSD1)</b>					Prepared: 04/29/2020 Analyzed: 04/30/2020					T
Benzene	30.4	2.80	ug/m <sup>3</sup> Air	31.9		95.3	70-130	2.01	25	
Toluene	31.8	5.00	"	37.7		84.4	70-130	0.952	25	
Ethylbenzene	38.7	5.00	"	43.4		89.1	70-130	3.31	25	
m,p-Xylene	165	19.0	"	174		94.8	70-130	4.36	25	
o-Xylene	39.6	4.70	"	43.4		91.2	70-130	5.87	25	
Surrogate: 1,2-Dichloroethane-d4	9.41		ppbv	10.0		94.1	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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**Volatile Organic Compounds by TO-15 in Air - 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 B0D2901 - Default Prep - Air

LCS Dup (B0D2901-BSD1)

Prepared: 04/29/2020 Analyzed: 04/30/2020

T

Surrogate: Toluene-d8	9.39		ppbv	10.0		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.*



August 26, 2020

Tasman Geosciences

Brock Nelson

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - PDC - Booth H11,12,21-31U &  
31AU**

**Project Number - [none]**

Attached are your analytical results for PDC - Booth H11,12,21-31U & 31AU received by Origins Laboratory, Inc. August 19, 2020. This project is associated with Origins project number Y008261-01.

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V001	Y008261-01	Air	August 19, 2020 12:05	08/19/2020 13:25

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.*

Page 3 of 8



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

Origins Laboratory

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

### Sample Receipt Checklist

Origins Work Order: Y008261

Client: Tasman  
Client Project ID: Booth H11,12,21, 22-31U & 31A

Checklist Completed by: JG  
Date/time completed: 8/19/20

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: N/A

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

Cooler Number/Temperature: 1 / - °C 1 / - °C 1 / - °C 1 / - °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> ?			<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+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 JM (Project Manager)

Date/Time Reviewed 8-20-20

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

V001

8/19/2020 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y008261-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	22400	5000	ug/m <sup>3</sup> Air	25	B0H2112	DJL	08/21/2020	08/24/2020	
Benzene	57.8	5.60	"	2	"	DJL	"	08/25/2020	
Toluene	50.9	10.0	"	"	"	DJL	"	"	
Ethylbenzene	ND	10.0	"	"	"	DJL	"	"	U
m,p-Xylene	368	38.0	"	"	"	DJL	"	"	
o-Xylene	48.3	9.40	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	98.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	122 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	177 %	70-130			"	"	"	"	S-04

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0H2112 - Default Prep - Air</b>										
<b>Blank (B0H2112-BLK1)</b>					Prepared: 08/21/2020 Analyzed: 08/21/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.6		ppbv	10.0		106	70-130			
Surrogate: Toluene-d8	9.60		"	10.0		96.0	70-130			
Surrogate: 4-Bromofluorobenzene	10.1		"	10.0		101	70-130			
<b>LCS (B0H2112-BS1)</b>					Prepared: 08/21/2020 Analyzed: 08/21/2020					T
Benzene	28.4	2.80	ug/m <sup>3</sup> Air	31.9		88.9	70-130			
Toluene	30.5	5.00	"	37.7		80.9	70-130			
Ethylbenzene	36.6	5.00	"	43.4		84.4	70-130			
m,p-Xylene	162	19.0	"	174		93.1	70-130			
o-Xylene	37.4	4.70	"	43.4		86.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.3		ppbv	10.0		103	70-130			
Surrogate: Toluene-d8	9.39		"	10.0		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	11.4		"	10.0		114	70-130			
<b>LCS Dup (B0H2112-BSD1)</b>					Prepared: 08/21/2020 Analyzed: 08/21/2020					T
Benzene	27.8	2.80	ug/m <sup>3</sup> Air	31.9		86.9	70-130	2.28	25	
Toluene	29.6	5.00	"	37.7		78.5	70-130	3.01	25	
Ethylbenzene	35.7	5.00	"	43.4		82.1	70-130	2.76	25	
m,p-Xylene	157	19.0	"	174		90.4	70-130	2.83	25	
o-Xylene	36.5	4.70	"	43.4		84.0	70-130	2.59	25	
Surrogate: 1,2-Dichloroethane-d4	10.1		ppbv	10.0		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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**Volatile Organic Compounds by TO-15 in Air - 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 B0H2112 - Default Prep - Air

LCS Dup (B0H2112-BSD1)

Prepared: 08/21/2020 Analyzed: 08/21/2020

T

Surrogate: Toluene-d8	8.96		ppbv	10.0		89.6	70-130			
Surrogate: 4-Bromofluorobenzene	10.8		"	10.0		108	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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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.*



November 19, 2020

Tasman Geosciences

Brock Nelson

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - PDC - Booth H11,12,21-31U &  
31AU**

**Project Number - [none]**

Attached are your analytical results for PDC - Booth H11,12,21-31U & 31AU received by Origins Laboratory, Inc. November 12, 2020. This project is associated with Origins project number Y011183-01.

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V001	Y011183-01	Air	November 11, 2020 9:30	11/12/2020 14:35

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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

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page 1 of 1

**ORIGINS**  
LABORATORY, INC

Y011183

Client: PDC / Tasman  
Address: \_\_\_\_\_  
Project Manager: Brock Nelson  
Project Name: Booth H11,12,21-31U & 31AU  
Project Number: \_\_\_\_\_  
Samples Collected By: Dillon Sade  
Telephone Number: 785-554-7578  
Email Address: Brock.Nelson@tasman-geo.com

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	
1001	11/11/20	930	1	X								1
												2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>Brock Nelson</u>	11/11/20	1700	<u>Dr. Sade</u>	11/11/20	1700	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/>
<u>Dr. Sade</u>	11/12/20	1435	<u>Dr. Sade</u>	11/12/20	1435	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Temp Received: \_\_\_\_\_ 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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

Origins Laboratory

Sample Receipt Checklist

Origins Work Order: Y011183

Client: Tasman

Client Project ID: Booth

Checklist Completed by: SGK KDK

Date/time completed: 11/12/20

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

Airbill #: N/A

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

Cooler Number/Temperature: 1 / - °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> ?			<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.				
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)			<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 (Project Manager) Jm

11-13-20  
Date/Time Reviewed

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

V001

11/11/2020 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y011183-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	2550	400	ug/m <sup>3</sup> Air	2	B0K1603	DJL	11/16/2020	11/17/2020
Benzene	72.7	5.60	"	"	"	DJL	"	"
Toluene	42.1	10.0	"	"	"	DJL	"	"
Ethylbenzene	10.2	10.0	"	"	"	DJL	"	"
m,p-Xylene	104	38.0	"	"	"	DJL	"	"
o-Xylene	12.0	9.40	"	"	"	DJL	"	"

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"
Surrogate: Toluene-d8	105 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	128 %	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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B0K1603 - Default Prep - Air</b>										
<b>Blank (B0K1603-BLK1)</b>					Prepared: 11/16/2020 Analyzed: 11/16/2020					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.1		ppbv	10.0		101	70-130			
Surrogate: Toluene-d8	10.4		"	10.0		104	70-130			
Surrogate: 4-Bromofluorobenzene	11.8		"	10.0		118	70-130			
<b>LCS (B0K1603-BS1)</b>					Prepared: 11/16/2020 Analyzed: 11/16/2020					T
Benzene	33.6	2.80	ug/m <sup>3</sup> Air	31.9		105	70-130			
Toluene	35.1	5.00	"	37.7		93.2	70-130			
Ethylbenzene	46.3	5.00	"	43.4		107	70-130			
m,p-Xylene	212	19.0	"	174		122	70-130			
o-Xylene	45.8	4.70	"	43.4		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.13		ppbv	10.0		91.3	70-130			
Surrogate: Toluene-d8	9.16		"	10.0		91.6	70-130			
Surrogate: 4-Bromofluorobenzene	8.08		"	10.0		80.8	70-130			
<b>LCS Dup (B0K1603-BSD1)</b>					Prepared: 11/16/2020 Analyzed: 11/16/2020					T
Benzene	32.3	2.80	ug/m <sup>3</sup> Air	31.9		101	70-130	3.97	25	
Toluene	34.7	5.00	"	37.7		92.1	70-130	1.19	25	
Ethylbenzene	46.9	5.00	"	43.4		108	70-130	1.12	25	
m,p-Xylene	210	19.0	"	174		121	70-130	0.700	25	
o-Xylene	47.6	4.70	"	43.4		110	70-130	4.00	25	
Surrogate: 1,2-Dichloroethane-d4	9.15		ppbv	10.0		91.5	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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**Volatile Organic Compounds by TO-15 in Air - 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 B0K1603 - Default Prep - Air**

**LCS Dup (B0K1603-BSD1)**

Prepared: 11/16/2020 Analyzed: 11/16/2020

T

Surrogate: Toluene-d8	9.23		ppbv	10.0		92.3	70-130			
Surrogate: 4-Bromofluorobenzene	8.20		"	10.0		82.0	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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

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.*





February 11, 2021

Tasman Geosciences

Brock Nelson

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - PDC - Booth H11,12,21-31U &  
31AU**

**Project Number - [none]**

Attached are your analytical results for PDC - Booth H11,12,21-31U & 31AU received by Origins Laboratory, Inc. February 04, 2021. This project is associated with Origins project number Y102092-01.

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V001	Y102092-01	Air	January 30, 2021 13:45	02/04/2021 11:00

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

# ORIGINS

LABORATORY, INC

www.originslaboratory.com

Y102092

page 1 of 1

Client: POC / Tasman

Address: \_\_\_\_\_

Telephone Number: 785-594-7598

Email Address: Kristin.Ptasman-gco.com

Project Manager: Black Nelson

Project Name: Beach 11, 12, 21, 22, 31A + 31Aa

Project Number: \_\_\_\_\_

Samples Collected By: Kevin Walter

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis				Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Sampled	Other	Analysis	Analysis	Analysis	Analysis	
1001	11/30/21	1345	1	X								10347			6015X	
																1
																2
																3
																4
																5
																6
																7
																8
																9
																10
Relinquished By: <u>[Signature]</u>	Date: <u>2/14/21</u>	Time: <u>1100</u>	Time: <u>1100</u>	Received By: <u>[Signature]</u>	Date: <u>2/14/21</u>	Time: <u>1100</u>	Date: <u>2/14/21</u>	Time: <u>1100</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 type="checkbox"/> Standard <input checked="" type="checkbox"/>							
Relinquished By: <u>[Signature]</u>	Date: _____	Time: _____	Time: _____	Received By: _____	Date: _____	Time: _____	Date: _____	Time: _____								

Temp Received: \_\_\_\_\_

Date Results Needed

Origins Laboratory, Inc.

Intent

*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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

Origins Laboratory

## Sample Receipt Checklist

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

Origins Work Order: Y102092

Client: Tasman

Client Project ID: PDC-Booth

Checklist Completed by: Jm

Shipped Via: HTD

Date/time completed: 2-4-21

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

Airbill #: N/A

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

Water X Other: air

Cooler Number/Temperature: 1 / - °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 ≤ 5°C <sup>(1)</sup> ?			X	
Is there ice present (document if blue ice is used)			X	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			X	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			X	
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?			X	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
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)			X	
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 2/5/21

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

V001

1/30/2021 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y102092-01 (Air)

## GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	3650000	367000	ug/m³ Air	1834	B1B0904	DJL	02/05/2021	02/09/2021	
Benzene	12800	700	"	250	"	DJL	"	02/08/2021	
Toluene	18500	1250	"	"	"	DJL	"	"	
Ethylbenzene	ND	1250	"	"	"	DJL	"	"	U
m,p-Xylene	30600	4750	"	"	"	DJL	"	"	
o-Xylene	7020	1180	"	"	"	DJL	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	152 %	70-130			"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	110 %	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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

## Volatile Organic Compounds by TO-15 in Air - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1B0904 - Default Prep - Air</b>										
<b>Blank (B1B0904-BLK1)</b>					Prepared: 02/05/2021 Analyzed: 02/05/2021					T
Gasoline Range Hydrocarbons	ND	200	ug/m <sup>3</sup> Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.2		ppbv	10.0		102	70-130			
Surrogate: Toluene-d8	9.88		"	10.0		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	12.1		"	10.0		121	70-130			
<b>LCS (B1B0904-BS1)</b>					Prepared: 02/05/2021 Analyzed: 02/05/2021					T
Benzene	29.8	2.80	ug/m <sup>3</sup> Air	31.9		93.4	70-130			
Toluene	35.1	5.00	"	37.7		93.1	70-130			
Ethylbenzene	39.1	5.00	"	43.4		90.0	70-130			
m,p-Xylene	173	19.0	"	174		99.6	70-130			
o-Xylene	38.5	4.70	"	43.4		88.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.30		ppbv	10.0		93.0	70-130			
Surrogate: Toluene-d8	9.31		"	10.0		93.1	70-130			
Surrogate: 4-Bromofluorobenzene	8.12		"	10.0		81.2	70-130			
<b>LCS Dup (B1B0904-BSD1)</b>					Prepared: 02/05/2021 Analyzed: 02/05/2021					T
Benzene	31.1	2.80	ug/m <sup>3</sup> Air	31.9		97.2	70-130	3.99	25	
Toluene	34.9	5.00	"	37.7		92.6	70-130	0.538	25	
Ethylbenzene	39.4	5.00	"	43.4		90.7	70-130	0.775	25	
m,p-Xylene	175	19.0	"	174		101	70-130	1.30	25	
o-Xylene	39.6	4.70	"	43.4		91.3	70-130	3.00	25	
Surrogate: 1,2-Dichloroethane-d4	9.43		ppbv	10.0		94.3	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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

**Volatile Organic Compounds by TO-15 in Air - 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 B1B0904 - Default Prep - Air**

**LCS Dup (B1B0904-BSD1)**

Prepared: 02/05/2021 Analyzed: 02/05/2021

T

Surrogate: Toluene-d8	9.15		ppbv	10.0		91.5	70-130			
Surrogate: 4-Bromofluorobenzene	8.25		"	10.0		82.5	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Brock Nelson  
Project Number: [none]  
Project: PDC - Booth H11,12,21-31U & 31AU

### Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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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