



July 10, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - [none]

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. July 06, 2015. This project is associated with Origins project number X507082-01.

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
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X507082-01	Water	July 6, 2015 9:59	07/06/2015 16:55
BH02	X507082-02	Water	July 6, 2015 10:20	07/06/2015 16:55
BH03	X507082-03	Water	July 6, 2015 10:22	07/06/2015 16:55
BH04	X507082-04	Water	July 6, 2015 10:34	07/06/2015 16:55
BH05	X507082-05	Water	July 6, 2015 10:39	07/06/2015 16:55

Origins Laboratory, Inc.



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Tasman Geosciences
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Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

www.originslaboratory.com

page 1 of 1

1507082

ORIGINS
LABORATORY, INC

Client: ARK/Tasman Inc.

Address:

Telephone Number:

Email Address: C.Wasko@Tasman-Geo.com

Project Manager: Christine Wasko

Project Name: Coughlin Red VV 22-1

Project Number:

Samples Collected By: Brandon Labovine, Tyler Brisson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
BH01	7/26/2015	09:59	3		X			X			BTEX (S260)	1
BH02		10:20										2
BH03		10:22										3
BH04		10:34										4
BH05		10:39										5
												6
												7
												8
												9
												10

Relinquished By: Tyler Brisson

Date: 07/06/2015

Received By: [Signature]

Date: 7/6/15

Turnaround Time:

Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒ 33

Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X507082

Client: Tasman

Client Project ID: Coughlin Red VV 22-1

Checklist Completed by: Jen Pellegrini

Shipped Via: H/D

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

Date/time completed: 7/7/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 3.3 °C / °C / °C / °C (Describe)

Thermometer ID: 1003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#CL
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.

Jen Pellegrini
Reviewed by (Project Manager)

7/7/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01

7/6/2015 9:59:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507082-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5G09007	07/09/2015	07/09/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	107 %	87.3-113			"	"	"
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	96.8 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02

7/6/2015 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507082-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5G09007	07/09/2015	07/09/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	108 %	87.3-113			"	"	"
Surrogate: Toluene-d8	98.2 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	98.8 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03

7/6/2015 10:22:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507082-03 (Water)

BTEX by EPA 8260C

Benzene	108	1.0	ug/L	1	5G09007	07/09/2015	07/09/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	29.4	1.0	"	"	"	"	"
Xylenes, total	6.3	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	111 %	87.3-113			"	"	"
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	96.0 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04

7/6/2015 10:34:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507082-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5G09007	07/09/2015	07/09/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	105 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.5 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	88.6-111			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05

7/6/2015 10:39:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X507082-05 (Water)

BTEX by EPA 8260C

Benzene	84.4	1.0	ug/L	1	5G09007	07/09/2015	07/09/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	2.5	1.0	"	"	"	"	"
Xylenes, total	4.8	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	"
Surrogate: Toluene-d8	97.7 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	88.6-111			"	"	"

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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

Blank (5G09007-BLK1)

Prepared: 07/09/2015 Analyzed: 07/09/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	69		"	62.5	111		87.3-113			
Surrogate: Toluene-d8	60		"	62.5	96.8		90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.4		88.6-111			

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Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

Blank (5G09007-BLK2)

Prepared: 07/09/2015 Analyzed: 07/09/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5	108		87.3-113			
Surrogate: Toluene-d8	61		"	62.5	97.2		90.9-108			
Surrogate: 4-Bromofluorobenzene	60		"	62.5	96.2		88.6-111			

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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

LCS (5G09007-BS1)

Prepared: 07/09/2015 Analyzed: 07/09/2015

Benzene	53.7	1.0	ug/L	50.0		107	75-126			
Toluene	54.0	1.0	"	50.0		108	78.7-126			
Ethylbenzene	53.3	1.0	"	50.0		107	80-130			
m,p-Xylene	109	2.0	"	100		109	77.2-133			
o-Xylene	53.9	1.0	"	50.0		108	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.1	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.9	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.4	88.6-111			

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Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

LCS (5G09007-BS2)

Prepared: 07/09/2015 Analyzed: 07/09/2015

Benzene	52.8	1.0	ug/L	50.0		106	75-126			
Toluene	52.4	1.0	"	50.0		105	78.7-126			
Ethylbenzene	54.6	1.0	"	50.0		109	80-130			
m,p-Xylene	112	2.0	"	100		112	77.2-133			
o-Xylene	55.0	1.0	"	50.0		110	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.9	88.6-111			

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Christine Wasko
Project Number: [none]
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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 5G09007 - EPA 5030B (Water)

Matrix Spike (5G09007-MS1)		Source: X507082-01			Prepared: 07/09/2015 Analyzed: 07/09/2015					
Benzene	51.2	1.0	ug/L	50.0	ND	102	74-130			
Toluene	50.4	1.0	"	50.0	ND	101	73-131			
Ethylbenzene	51.2	1.0	"	50.0	ND	102	76-132			
m,p-Xylene	105	2.0	"	100	ND	105	69-139			
o-Xylene	50.6	1.0	"	50.0	ND	101	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	87.3-113			
Surrogate: Toluene-d8	60		"	62.5		95.7	90.9-108			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.1	88.6-111			

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Christine Wasko
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Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

Matrix Spike (5G09007-MS2)		Source: X507082-02			Prepared: 07/09/2015 Analyzed: 07/09/2015					
Benzene	49.8	1.0	ug/L	50.0	ND	99.6	74-130			
Toluene	47.7	1.0	"	50.0	ND	95.5	73-131			
Ethylbenzene	49.2	1.0	"	50.0	ND	98.5	76-132			
m,p-Xylene	98.8	2.0	"	100	ND	98.8	69-139			
o-Xylene	48.5	1.0	"	50.0	ND	97.0	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	87.3-113			
Surrogate: Toluene-d8	61		"	62.5		97.5	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	88.6-111			

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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

Matrix Spike Dup (5G09007-MSD1)		Source: X507082-01			Prepared: 07/09/2015 Analyzed: 07/09/2015					
Benzene	52.7	1.0	ug/L	50.0	ND	105	74-130	2.93	20	
Toluene	50.0	1.0	"	50.0	ND	100	73-131	0.718	20	
Ethylbenzene	54.5	1.0	"	50.0	ND	109	76-132	6.26	20	
m,p-Xylene	109	2.0	"	100	ND	109	69-139	3.66	20	
o-Xylene	53.8	1.0	"	50.0	ND	108	74-131	6.23	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		103	87.3-113			
Surrogate: Toluene-d8	60		"	62.5		96.6	90.9-108			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	88.6-111			

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Christine Wasko
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 5G09007 - EPA 5030B (Water)

Matrix Spike Dup (5G09007-MSD2)		Source: X507082-02			Prepared: 07/09/2015 Analyzed: 07/09/2015					
Benzene	49.2	1.0	ug/L	50.0	ND	98.4	74-130	1.23	20	
Toluene	51.0	1.0	"	50.0	ND	102	73-131	6.72	20	
Ethylbenzene	49.5	1.0	"	50.0	ND	99.0	76-132	0.567	20	
m,p-Xylene	101	2.0	"	100	ND	101	69-139	2.42	20	
o-Xylene	49.4	1.0	"	50.0	ND	98.8	74-131	1.82	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.7	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	88.6-111			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - Coughlin Red VV 22-1, 22-2

Notes and Definitions

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 For Noelle Doyle Mathis, President



October 29, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - [none]

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. October 26, 2015. This project is associated with Origins project number X510298-01.

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X510298-01	Water	October 26, 2015 11:19	10/26/2015 17:00
BH02	X510298-02	Water	October 26, 2015 11:26	10/26/2015 17:00
BH03	X510298-03	Water	October 26, 2015 11:34	10/26/2015 17:00
BH04	X510298-04	Water	October 26, 2015 11:42	10/26/2015 17:00
BH05	X510298-05	Water	October 26, 2015 11:39	10/26/2015 17:00
BH06	X510298-06	Water	October 26, 2015 11:30	10/26/2015 17:00
BH07	X510298-07	Water	October 26, 2015 11:17	10/26/2015 17:00

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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

ORIGINS LABORATORY, INC

www.originslaboratory.com

page 1 of 1

XS10298

Client: Tasman Geosciences

Address:

Telephone Number: 352-262-9910

Email Address: bcornez@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Coughlin Red VV 22-1

Project Number:

Samples Collected By: Kate Foismark

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
BH01	10/20/15	1119	3	X				X			Bt x 8260	1
BH02		1126										2
BH03		1131										3
BH04		1142										4
BH05		1139										5
BH06		1130										6
BH07		1117										7
												8
												9
												10

Relinquished By: [Signature]

Relinquished By: [Signature]

Date: 10/20/15

Date: 10/20/15

Time: 1610

Time: 1700

Received By: [Signature]

Received By: [Signature]

Date: 10.26.15

Date: 10.26.15

Time: 1700

Time: 1700

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒ 4-2

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS10298

Client: Tasman

Client Project ID: KMG-Coughlin Rd

Checklist Completed by: Jeff Smith

Shipped Via: HD

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

Date/time completed: 10/27/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 4.2 °C 1 °C 1 °C 1 °C

Thermometer ID: TD03

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCL
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.

Jeff Smith
Reviewed by (Project Manager)

10/27/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jeff 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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Coughlin Red VV 22-1, 22-2

BH01

10/26/2015 11:19:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

X510298-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"
Surrogate: Toluene-d8	99.2 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	99.6 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02

10/26/2015 11:26:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"
Surrogate: Toluene-d8	102 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	99.3 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03

10/26/2015 11:34:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-03 (Water)

BTEX by EPA 8260C

Benzene	34.4	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	2.4	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"
Surrogate: Toluene-d8	99.9 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	97.7 %	84-114			"	"	"

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Coughlin Red VV 22-1, 22-2

BH04

10/26/2015 11:42:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"
Surrogate: Toluene-d8	99.4 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	99.7 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05

10/26/2015 11:39:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-05 (Water)

BTEX by EPA 8260C

Benzene	10.5	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	99.5 %	84-121			"	"	"
Surrogate: Toluene-d8	102 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	99.3 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06

10/26/2015 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"
Surrogate: Toluene-d8	99.2 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	98.9 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07

10/26/2015 11:17:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X510298-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	5J28007	10/28/2015	10/28/2015
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"
Surrogate: Toluene-d8	99.9 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	98.5 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5J28007 - EPA 5030B (Water)

Blank (5J28007-BLK1)

Prepared: 10/28/2015 Analyzed: 10/28/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	62		"	62.5	99.4		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.4		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5J28007 - EPA 5030B (Water)

LCS (5J28007-BS1)

Prepared: 10/28/2015 Analyzed: 10/28/2015

Benzene	43.4	1.0	ug/L	50.0		86.8	75-126			
Toluene	43.7	1.0	"	50.0		87.4	78.7-126			
Ethylbenzene	45.6	1.0	"	50.0		91.2	80-130			
m,p-Xylene	91.0	2.0	"	100		91.0	77.2-133			
o-Xylene	44.6	1.0	"	50.0		89.1	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.8	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 5J28007 - EPA 5030B (Water)

Matrix Spike (5J28007-MS1)		Source: X510298-01			Prepared: 10/28/2015 Analyzed: 10/28/2015					
Benzene	37.0	1.0	ug/L	50.0	ND	74.0	74-130			
Toluene	37.4	1.0	"	50.0	ND	74.8	73-131			
Ethylbenzene	38.8	1.0	"	50.0	ND	77.6	76-132			
m,p-Xylene	78.5	2.0	"	100	ND	78.5	69-139			
o-Xylene	38.9	1.0	"	50.0	ND	77.7	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.1	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 5J28007 - EPA 5030B (Water)

Matrix Spike Dup (5J28007-MSD1)		Source: X510298-01			Prepared: 10/28/2015 Analyzed: 10/28/2015					
Benzene	33.0	1.0	ug/L	50.0	ND	66.1	74-130	11.4	20	QM-07
Toluene	33.4	1.0	"	50.0	ND	66.8	73-131	11.4	20	QM-07
Ethylbenzene	34.7	1.0	"	50.0	ND	69.4	76-132	11.2	20	QM-07
m,p-Xylene	69.3	2.0	"	100	ND	69.3	69-139	12.4	20	QM-07
o-Xylene	34.4	1.0	"	50.0	ND	68.7	74-131	12.3	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.8	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Coughlin Red VV 22-1, 22-2

Notes and Definitions

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

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.

Jen Pellegrini For Noelle Doyle Mathis, President



January 29, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - [none]

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. January 25, 2016. This project is associated with Origins project number X601246-01.

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X601246-01	Water	January 25, 2016 13:05	01/25/2016 16:50
BH02	X601246-02	Water	January 25, 2016 13:25	01/25/2016 16:50
BH03	X601246-03	Water	January 25, 2016 13:26	01/25/2016 16:50
BH04	X601246-04	Water	January 25, 2016 13:18	01/25/2016 16:50
BH05	X601246-05	Water	January 25, 2016 13:42	01/25/2016 16:50
BH06	X601246-06	Water	January 25, 2016 13:59	01/25/2016 16:50
BH07	X601246-07	Water	January 25, 2016 13:36	01/25/2016 16:50

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

www.originslaboratory.com

page 1 of 1

ORIGINS LABORATORY, INC

Client: Tasman Geo

Address:

Telephone Number: 912 230 2807

Email Address: ccornet@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Coughlin Red VV 22-1, 22-2

Project Number:

Samples Collected By: Bruce Nelson

APL Truitt Phil Hamlin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As Summed	Other			
B101	1/25/16	1305	3					X					BTEX 8260	1
B102	1/25/16	1325	3					X						2
B103	1/25/16	1326	3					X						3
B104	1/25/16	1338	3					X						4
B105	1/25/16	1342	3					X						5
B106	1/25/16	1359	3					X						6
B107	1/25/16	1336	3					X						7
														8
														9
														10

Relinquished By: [Signature]

Relinquished By: [Signature]

Date: 1/25/16 Time: 1630

Date: 1/25/16 Time: 1630

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

9.3 Date Results Needed

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X601246

Client: Tasman

Client Project ID: KMG - Coughlin Red

Checklist Completed by: Jeff Smith

Shipped Via: 41D
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/26/16

Airbill #: N/A

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

Cooler Number/Temperature: 1 A-3 °C 1 °C 1 °C 1 °C

Thermometer ID: DOB

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		X		Sampled Same Day
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 ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	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 ⁽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)	X			HCL
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.

Jeff Smith
Reviewed by (Project Manager)

1/26/16
Date/Time Reviewed

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01

1/25/2016 1:05:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X601246-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121	"	"	"
Surrogate: Toluene-d8	99.1 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	98.2 %	84-114	"	"	"

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02

1/25/2016 1:25:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X601246-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121	"	"	"
Surrogate: Toluene-d8	99.7 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	97.2 %	84-114	"	"	"

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03

1/25/2016 1:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X601246-03 (Water)

BTEX by EPA 8260C

Benzene	11.3	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.9 %	84-114			"	"	"	

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04

1/25/2016 1:18:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X601246-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.5 %	84-121	"	"	"
Surrogate: Toluene-d8	98.6 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.5 %	84-114	"	"	"

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05

1/25/2016 1:42:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X601246-05 (Water)

BTEX by EPA 8260C

Benzene	4.8	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.8 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.9 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06

1/25/2016 1:59:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X601246-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121	"	"	"
Surrogate: Toluene-d8	99.2 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114	"	"	"

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07

1/25/2016 1:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X601246-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6A2602	01/26/2016	01/27/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6A2602 - EPA 5030B (Water)

Blank (B6A2602-BLK1)

Prepared: 01/26/2016 Analyzed: 01/27/2016

Benzene	ND	1.0	ug/L							U
Toluene	ND	1.0	"							U
Ethylbenzene	ND	1.0	"							U
Xylenes, total	ND	1.0	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.1		84-114			

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6A2602 - EPA 5030B (Water)

LCS (B6A2602-BS1)

Prepared: 01/26/2016 Analyzed: 01/27/2016

Benzene	51.3	1.0	ug/L	50.0		103	73.3-129			
Toluene	50.2	1.0	"	50.0		100	76.2-123			
Ethylbenzene	50.7	1.0	"	50.0		101	73.6-130			
m,p-Xylene	102	2.0	"	100		102	76.1-126			
o-Xylene	50.4	1.0	"	50.0		101	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6A2602 - EPA 5030B (Water)

Matrix Spike (B6A2602-MS1)		Source: X601246-01			Prepared: 01/26/2016 Analyzed: 01/27/2016					
Benzene	40.2	1.0	ug/L	50.0	ND	80.3	74-130			
Toluene	39.1	1.0	"	50.0	ND	78.1	73-131			
Ethylbenzene	38.2	1.0	"	50.0	ND	76.4	76-132			
m,p-Xylene	76.2	2.0	"	100	ND	76.2	69-139			
o-Xylene	40.4	1.0	"	50.0	ND	80.7	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6A2602 - EPA 5030B (Water)

Matrix Spike Dup (B6A2602-MSD1)		Source: X601246-01			Prepared: 01/26/2016 Analyzed: 01/27/2016					
Benzene	44.2	1.0	ug/L	50.0	ND	88.4	74-130	9.60	20	
Toluene	42.6	1.0	"	50.0	ND	85.3	73-131	8.74	20	
Ethylbenzene	42.8	1.0	"	50.0	ND	85.6	76-132	11.4	20	
m,p-Xylene	85.4	2.0	"	100	ND	85.4	69-139	11.4	20	
o-Xylene	44.5	1.0	"	50.0	ND	89.1	74-131	9.82	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.9	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Coughlin Red VV 22-1, 22-2

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.

Noelle Doyle Mathis, President



May 03, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. April 26, 2016. This project is associated with Origins project number X604282-01.

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 04/26/16	X604282-01	Water	April 26, 2016 12:28	04/26/2016 17:00
BH02 - 04/26/16	X604282-02	Water	April 26, 2016 12:11	04/26/2016 17:00
BH03 - 04/26/16	X604282-03	Water	April 26, 2016 12:36	04/26/2016 17:00
BH04 - 04/26/16	X604282-04	Water	April 26, 2016 12:42	04/26/2016 17:00
BH05 - 04/26/16	X604282-05	Water	April 26, 2016 12:35	04/26/2016 17:00
BH06 - 04/26/16	X604282-06	Water	April 26, 2016 12:51	04/26/2016 17:00
BH07 - 04/26/16	X604282-07	Water	April 26, 2016 12:57	04/26/2016 17:00

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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

www.originslaboratory.com

page 1 of 1

ORIGINS LABORATORY, INC

X604282

Client: Tasman Geosciences for APC

Address:

Telephone Number: (352) 262-9910

Email Address: Noelle22@Tasman-Geo.com

Project Manager: Bob Cornez

Project Name: Coughlin Red VV 22-1 22-2

Project Number: 88636316

Samples Collected By: Kate E. Brock

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summation	Other		
BH01 - 04/26/16	4/26/16	1228	3		X			X				STEX 8260	1
BH02 - 04/26/16	4/26/16	1211	3		X			X					2
BH03 - 04/26/16	4/26/16	1236	3		X			X					3
BH04 - 04/26/16	4/26/16	1242	3		X			X					4
BH05 - 04/26/16	4/26/16	1235	3		X			X					5
BH06 - 04/26/16	4/26/16	1251	3		X			X					6
BH07 - 04/26/16	4/26/16	1257	3		X			X					7
													8
													9
													10

Relinquished By: [Signature] Date: 4/26/16 Time: 1702

Relinquished By: [Signature] Date: 4/26/16 Time: 1708

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

Date Results Needed: 5/2

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X604282

Client: Tasman

Client Project ID: KMG - Coughlin Red VV 22-1, 22-2

Checklist Completed by: Jeff Smith

Shipped Via: HD

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

Date/time completed: 4/27/12

Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.0 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: TOB

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCL</u>
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) Jeff Smith

Date/Time Reviewed 4/27/12

Origins Laboratory, Inc.

Jeff 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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01 - 04/26/16

4/26/2016 12:28:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
X604282-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	93.3 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02 - 04/26/16

4/26/2016 12:11:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X604282-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.0 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	93.0 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03 - 04/26/16

4/26/2016 12:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X604282-03 (Water)

BTEX by EPA 8260C

Benzene	27.6	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	1.2	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.4 %	84-121			"	"	"
Surrogate: Toluene-d8	102 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	92.2 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04 - 04/26/16

4/26/2016 12:42:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X604282-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	92.6 %	84-114			"	"	"	

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

BH05 - 04/26/16

4/26/2016 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

X604282-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

96.3 % 84-121

"

"

"

Surrogate: Toluene-d8

102 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

92.0 % 84-114

"

"

"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06 - 04/26/16

4/26/2016 12:51:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X604282-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	91.5 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07 - 04/26/16

4/26/2016 12:57:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X604282-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.0	ug/L	1	B6D2705	04/27/2016	04/28/2016	U
Toluene	ND	1.0	"	"	"	"	"	U
Ethylbenzene	ND	1.0	"	"	"	"	"	U
Xylenes, total	ND	1.0	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.1 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	91.6 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B6D2705 - EPA 5030B (Water)										
Blank (B6D2705-BLK1)					Prepared: 04/27/2016 Analyzed: 04/27/2016					
Benzene	ND	1.0	ug/L							U
Toluene	ND	1.0	"							U
Ethylbenzene	ND	1.0	"							U
Xylenes, total	ND	1.0	"							U
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		93.7	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.0	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B6D2705 - EPA 5030B (Water)

LCS (B6D2705-BS1)

Prepared: 04/27/2016 Analyzed: 04/27/2016

Benzene	48.3	1.0	ug/L	50.0		96.5	73.3-129			
Toluene	47.6	1.0	"	50.0		95.2	76.2-123			
Ethylbenzene	48.9	1.0	"	50.0		97.7	73.6-130			
m,p-Xylene	97.6	2.0	"	100		97.6	76.1-126			
o-Xylene	48.8	1.0	"	50.0		97.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		89.0	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.7	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6D2705 - EPA 5030B (Water)

Matrix Spike (B6D2705-MS1)		Source: X604276-02			Prepared: 04/27/2016 Analyzed: 04/27/2016					
Benzene	47.6	1.0	ug/L	50.0	ND	95.2	74-130			
Toluene	47.3	1.0	"	50.0	ND	94.7	73-131			
Ethylbenzene	48.5	1.0	"	50.0	ND	97.1	76-132			
m,p-Xylene	97.2	2.0	"	100	ND	97.2	69-139			
o-Xylene	47.8	1.0	"	50.0	ND	95.7	74-131			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		88.8	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.3	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B6D2705 - EPA 5030B (Water)										
Matrix Spike Dup (B6D2705-MSD1)	Source: X604276-02				Prepared: 04/27/2016 Analyzed: 04/27/2016					
Benzene	63.6	1.0	ug/L	50.0	ND	127	74-130	28.9	20	QR-03
Toluene	62.8	1.0	"	50.0	ND	126	73-131	28.1	20	QR-03
Ethylbenzene	65.0	1.0	"	50.0	ND	130	76-132	29.0	20	QR-03
m,p-Xylene	130	2.0	"	100	ND	130	69-139	28.6	20	QR-03
o-Xylene	64.8	1.0	"	50.0	ND	130	74-131	30.1	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.0	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.6	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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.



July 18, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. July 12, 2016. This project is associated with Origins project number X607149-01.

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 7/12/16	X607149-01	Water	July 12, 2016 13:25	07/12/2016 15:10
BH02 - 7/12/16	X607149-02	Water	July 12, 2016 13:35	07/12/2016 15:10
BH03 - 7/12/16	X607149-03	Water	July 12, 2016 14:09	07/12/2016 15:10
BH04 - 7/12/16	X607149-04	Water	July 12, 2016 14:10	07/12/2016 15:10
BH05 - 7/12/16	X607149-05	Water	July 12, 2016 13:50	07/12/2016 15:10
BH06 - 7/12/16	X607149-06	Water	July 12, 2016 13:50	07/12/2016 15:10
BH07 - 7/12/16	X607149-07	Water	July 12, 2016 13:45	07/12/2016 15:10

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

ORIGINS
LABORATORY, INC

www.originslaboratory.com

X207149

page 1 of 1

Client: Anadarko / Tasman Geosciences
Address: 6899 Pecos St, Unit C
Denver, CO 80221
Telephone Number:
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Coughlin Red VV 22-1, 22-2
Project Number: 88636316
Samples Collected By: Mitch Weller

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air / Surface		
BH01-7/12/16	7-12-16	1325	3	X				X			BTEX	1
BH02-7/12/16		1335										2
BH03-7/12/16		1409										3
BH04-7/12/16		1410										4
BH05-7/12/16		1356										5
BH06-7/12/16		1350										6
BH07-7/12/16		1345										7
												8
												9
												10

Relinquished By: *Michael Weller* Date: 7-12-16 Time: 1510
Relinquished By: *[Signature]* Date: 7/12/16 Time: 1510

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

Date Results Needed

18.2

Temp Received

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X607149

Client: Tasman

Client Project ID: KMG - Coughlin Red

Checklist Completed by: Jen Pellegrini

Shipped Via: H-D

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

Date/time completed: 7/12/16

Airbill #: NA

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

Cooler Number/Temperature: 1 18.2 °C 1 °C 1 °C (Describe) °C

Thermometer ID: TC03

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"/>		<u>sampled same day</u>
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"/>		
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 HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			<u>HCL</u>
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: [Signature] (Project Manager)

Date/Time Reviewed: 7/13/16

Origins Laboratory, Inc.

Jen 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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01 - 7/12/16
7/12/2016 1:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
X607149-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.1 %	84-114			"	"	"	

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

BH02 - 7/12/16

7/12/2016 1:35:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

X607149-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

106 % 84-121

"

"

"

Surrogate: Toluene-d8

102 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

98.3 % 84-114

"

"

"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03 - 7/12/16

7/12/2016 2:09:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X607149-03 (Water)

BTEX by EPA 8260C

Benzene	1.95	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	105 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.5 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04 - 7/12/16

7/12/2016 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X607149-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.4 %	84-114			"	"	"	

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

BH05 - 7/12/16

7/12/2016 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

X607149-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

108 % 84-121

" " "

Surrogate: Toluene-d8

106 % 85-115

" " "

Surrogate: 4-Bromofluorobenzene

101 % 84-114

" " "

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06 - 7/12/16
7/12/2016 1:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X607149-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07 - 7/12/16
7/12/2016 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X607149-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G1403	07/14/2016	07/14/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.8 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B6G1403 - EPA 5030B (Water)										
Blank (B6G1403-BLK1)					Prepared: 07/14/2016 Analyzed: 07/14/2016					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		105	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

Blank (B6G1403-BLK2)

Prepared: 07/14/2016 Analyzed: 07/14/2016

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5	92.4		84-121			
Surrogate: Toluene-d8	62		"	62.5	99.3		85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	103		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

LCS (B6G1403-BS1)

Prepared: 07/14/2016 Analyzed: 07/14/2016

Benzene	42.2	1.00	ug/L	50.0		84.3	73.3-129
Toluene	43.8	1.00	"	50.0		87.6	76.2-123
Ethylbenzene	44.6	1.00	"	50.0		89.1	73.6-130
m,p-Xylene	92.5	2.00	"	100		92.5	76.1-126
o-Xylene	44.3	1.00	"	50.0		88.6	76.6-124
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121
Surrogate: Toluene-d8	62		"	62.5		99.9	85-115
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	84-114

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

LCS (B6G1403-BS2)

Prepared: 07/14/2016 Analyzed: 07/14/2016

Benzene	57.8	1.00	ug/L	50.0	116	73.3-129
Toluene	58.7	1.00	"	50.0	117	76.2-123
Ethylbenzene	57.1	1.00	"	50.0	114	73.6-130
m,p-Xylene	117	2.00	"	100	117	76.1-126
o-Xylene	55.5	1.00	"	50.0	111	76.6-124
Surrogate: 1,2-Dichloroethane-d4	53		"	62.5	85.0	84-121
Surrogate: Toluene-d8	63		"	62.5	101	85-115
Surrogate: 4-Bromofluorobenzene	66		"	62.5	105	84-114

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

Matrix Spike (B6G1403-MS1)		Source: X607149-01			Prepared: 07/14/2016 Analyzed: 07/14/2016					
Benzene	55.7	1.00	ug/L	50.0	ND	111	74-130			
Toluene	55.3	1.00	"	50.0	ND	111	73-131			
Ethylbenzene	57.5	1.00	"	50.0	ND	115	76-132			
m,p-Xylene	115	2.00	"	100	ND	115	69-139			
o-Xylene	55.8	1.00	"	50.0	ND	112	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

Matrix Spike (B6G1403-MS2)		Source: X607149-02			Prepared: 07/14/2016 Analyzed: 07/14/2016					
Benzene	52.3	1.00	ug/L	50.0	ND	105	74-130			
Toluene	52.5	1.00	"	50.0	ND	105	73-131			
Ethylbenzene	54.8	1.00	"	50.0	ND	110	76-132			
m,p-Xylene	111	2.00	"	100	ND	111	69-139			
o-Xylene	52.8	1.00	"	50.0	ND	106	74-131			
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		107	84-121			
Surrogate: Toluene-d8	65		"	62.5		105	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B6G1403 - EPA 5030B (Water)										
Matrix Spike Dup (B6G1403-MSD1)	Source: X607149-01				Prepared: 07/14/2016 Analyzed: 07/14/2016					
Benzene	44.9	1.00	ug/L	50.0	ND	89.8	74-130	21.5	20	QR-02
Toluene	45.4	1.00	"	50.0	ND	90.8	73-131	19.7	20	
Ethylbenzene	45.6	1.00	"	50.0	ND	91.3	76-132	23.0	20	QR-02
m,p-Xylene	93.6	2.00	"	100	ND	93.6	69-139	20.6	20	QR-02
o-Xylene	45.4	1.00	"	50.0	ND	90.7	74-131	20.7	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.1	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B6G1403 - EPA 5030B (Water)

Matrix Spike Dup (B6G1403-MSD2)		Source: X607149-02			Prepared: 07/14/2016 Analyzed: 07/14/2016					
Benzene	42.9	1.00	ug/L	50.0	ND	85.8	74-130	19.7	20	
Toluene	43.1	1.00	"	50.0	ND	86.2	73-131	19.7	20	
Ethylbenzene	45.9	1.00	"	50.0	ND	91.7	76-132	17.7	20	
m,p-Xylene	92.2	2.00	"	100	ND	92.2	69-139	18.4	20	
o-Xylene	44.6	1.00	"	50.0	ND	89.2	74-131	16.9	20	
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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.

October 07, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red

Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red received by Origins Laboratory, Inc. October 03, 2016. This project is associated with Origins project number X610018-01.

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



Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X610018-01	Water	October 3, 2016 13:28	10/03/2016 15:01
BH02	X610018-02	Water	October 3, 2016 13:30	10/03/2016 15:01
BH03	X610018-03	Water	October 3, 2016 13:45	10/03/2016 15:01
BH04	X610018-04	Water	October 3, 2016 13:45	10/03/2016 15:01
BH05	X610018-05	Water	October 3, 2016 13:57	10/03/2016 15:01
BH06	X610018-06	Water	October 3, 2016 14:00	10/03/2016 15:01
BH07	X610018-07	Water	October 3, 2016 14:10	10/03/2016 15:01

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

www.originslaboratory.com

X610018

page 4 of 7

ORIGINS
LABORATORY, INC

Client: Amador/Tasman
Address: 6899 Pecos Street
Project Manager: Bob Cornez
Project Name: Coughlin Red
Project Number: 88636316
Samples Collected By: Max Garcia

Telephone Number: _____
Email Address: PCORNEZ@TASMAN-geo.COM

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 ₃	Other	Groundwater	Soil	Air Summa #			
BH01	10/3/16	1328	3	X				X					1
BH02		1330	1										2
BH03		1345	1										3
BH04		1345	1										4
BH05		1357	1										5
BH06		1400	1										6
BH07		1410	1										7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>Max Garcia</u>	<u>10-3-16</u>	<u>1501</u>	<u>[Signature]</u>	<u>10/3/16</u>	<u>1501</u>	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: 0.7

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X610018

Client: Tasman

Client Project ID: Coughlin Red

Checklist Completed by: Jeff Smith

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

Date/time completed: 10/3/12

Airbill #: NA

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

Cooler Number/Temperature: 1 10.7 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: TD03

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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: [Signature] (Project Manager)

Date/Time Reviewed: 10/4/12

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH01

10/3/2016 1:28:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

X610018-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

101 % 84-121

"

"

"

Surrogate: Toluene-d8

101 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

101 % 84-114

"

"

"

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH02

10/3/2016 1:30:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
X610018-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121	"	"	"
Surrogate: Toluene-d8	102 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.7 %	84-114	"	"	"

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH03

10/3/2016 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X610018-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114			"	"	"	

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH04

10/3/2016 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X610018-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121	"	"	"
Surrogate: Toluene-d8	102 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.4 %	84-114	"	"	"

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH05

10/3/2016 1:57:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

X610018-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

102 % 84-121

"

"

"

Surrogate: Toluene-d8

100 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

96.3 % 84-114

"

"

"

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH06

10/3/2016 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

X610018-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

100 % 84-121

" " "

Surrogate: Toluene-d8

102 % 85-115

" " "

Surrogate: 4-Bromofluorobenzene

106 % 84-114

" " "

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

BH07

10/3/2016 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

X610018-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6J0603	10/06/2016	10/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

104 % 84-121

" " "

Surrogate: Toluene-d8

102 % 85-115

" " "

Surrogate: 4-Bromofluorobenzene

101 % 84-114

" " "

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B6J0603 - EPA 5030B (Water)

Blank (B6J0603-BLK1)

Prepared: 10/06/2016 Analyzed: 10/06/2016

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5	103		84-121			
Surrogate: Toluene-d8	64		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.2		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B6J0603 - EPA 5030B (Water)

LCS (B6J0603-BS1)

Prepared: 10/06/2016 Analyzed: 10/06/2016

Benzene	48.9	1.00	ug/L	50.0		97.9	73.3-129
Toluene	48.4	1.00	"	50.0		96.8	76.2-123
Ethylbenzene	49.0	1.00	"	50.0		98.0	73.6-130
m,p-Xylene	97.1	2.00	"	100		97.1	76.1-126
o-Xylene	48.5	1.00	"	50.0		97.0	76.6-124
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121
Surrogate: Toluene-d8	64		"	62.5		102	85-115
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	84-114

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

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 B6J0603 - EPA 5030B (Water)

Matrix Spike (B6J0603-MS1)		Source: X610034-01			Prepared: 10/06/2016 Analyzed: 10/06/2016					
Benzene	53.5	1.00	ug/L	50.0	ND	107	74-130			
Toluene	54.4	1.00	"	50.0	ND	109	73-131			
Ethylbenzene	54.5	1.00	"	50.0	ND	109	76-132			
m,p-Xylene	108	2.00	"	100	ND	108	69-139			
o-Xylene	52.9	1.00	"	50.0	ND	106	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.5	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B6J0603 - EPA 5030B (Water)

Matrix Spike Dup (B6J0603-MSD1)		Source: X610034-01			Prepared: 10/06/2016 Analyzed: 10/06/2016					
Benzene	52.7	1.00	ug/L	50.0	ND	105	74-130	1.49	20	
Toluene	53.0	1.00	"	50.0	ND	106	73-131	2.53	20	
Ethylbenzene	53.8	1.00	"	50.0	ND	108	76-132	1.16	20	
m,p-Xylene	107	2.00	"	100	ND	107	69-139	0.752	20	
o-Xylene	53.5	1.00	"	50.0	ND	107	74-131	1.11	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.3	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.2	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red

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.

Jen Pellegrini For Noelle Doyle Mathis, President



January 10, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. January 04, 2017. This project is associated with Origins project number X701063-01.

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-1/4/17	X701063-01	Water	January 4, 2017 9:45	01/04/2017 12:45
BH02-1/4/17	X701063-02	Water	January 4, 2017 9:54	01/04/2017 12:45
BH03-1/4/17	X701063-03	Water	January 4, 2017 10:05	01/04/2017 12:45
BH04-1/4/17	X701063-04	Water	January 4, 2017 10:07	01/04/2017 12:45
BH05-1/4/17	X701063-05	Water	January 4, 2017 10:35	01/04/2017 12:45
BH06-1/4/17	X701063-06	Water	January 4, 2017 10:30	01/04/2017 12:45
BH07-1/4/17	X701063-07	Water	January 4, 2017 10:41	01/04/2017 12:45

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

www.originslaboratory.com

X701063

page 1 of 1

ORIGINS
LABORATORY, INC

Client: Anadarko / Tasman
Address: 6899 Pecos St, Unit C
Denver, CO 80221
Telephone Number:
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Coughlin Red VV 22-1, 22-2
Project Number: 88636316
Samples Collected By: Mitch Weller, Max Garza

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
BH01 - 1/4/17	1-4-17	0945	3	X				X				1
BH02 - 1/4/17		0954										2
BH03 - 1/4/17		1005										3
BH04 - 1/4/17		1007										4
BH05 - 1/4/17		1035										5
BH06 - 1/4/17		1030										6
BH07 - 1/4/17		1041										7
												8
												9
												10

Relinquished By: Mitch Weller Date: 1-4-17 Time: 1245
Relinquished By: Date: Date: Time: 1345

Received By: Date: 1-4-17 Time: 1345
Received By: Date: Date: Time: 1345

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

Date Results Needed

Temp Received-

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X701063

Client: Tasman

Client Project ID: Coughlin Red VV 22-1, 22-2

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 1-4-12

Airbill #: NA

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

Cooler Number/Temperature: 1 13.6 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: T022

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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: [Signature] Project Manager)

Date/Time Reviewed: 01/05/12

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01-1/4/17
1/4/2017 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.8 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02-1/4/17
1/4/2017 9:54:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.2 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03-1/4/17
1/4/2017 10:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-03 (Water)

BTEX by EPA 8260C

Benzene	6.79	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U
Surrogate: 1,2-Dichloroethane-d4	99.9 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04-1/4/17
1/4/2017 10:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.7 %	84-114			"	"	"	

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

BH05-1/4/17

1/4/2017 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.9 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.3 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.3 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06-1/4/17
1/4/2017 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07-1/4/17
1/4/2017 10:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X701063-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7A0602	01/06/2017	01/06/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7A0602 - EPA 5030B (Water)										
Blank (B7A0602-BLK1)					Prepared: 01/06/2017 Analyzed: 01/06/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	102		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.2		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7A0602 - EPA 5030B (Water)

LCS (B7A0602-BS1)

Prepared: 01/06/2017 Analyzed: 01/06/2017

Benzene	49.0	1.00	ug/L	50.0		98.0	73.3-129			
Toluene	52.7	1.00	"	50.0		105	76.2-123			
Ethylbenzene	49.0	1.00	"	50.0		98.0	73.6-130			
m,p-Xylene	98.6	2.00	"	100		98.6	76.1-126			
o-Xylene	52.3	1.00	"	50.0		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7A0602 - EPA 5030B (Water)

Matrix Spike (B7A0602-MS1)		Source: X701066-02			Prepared: 01/06/2017 Analyzed: 01/06/2017					
Benzene	50.7	1.00	ug/L	50.0	ND	101	74-130			
Toluene	54.8	1.00	"	50.0	ND	110	73-131			
Ethylbenzene	51.7	1.00	"	50.0	ND	103	76-132			
m,p-Xylene	103	2.00	"	100	ND	103	69-139			
o-Xylene	53.5	1.00	"	50.0	ND	107	74-131			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.0	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7A0602 - EPA 5030B (Water)

Matrix Spike Dup (B7A0602-MSD1)		Source: X701066-02			Prepared: 01/06/2017 Analyzed: 01/06/2017					
Benzene	51.7	1.00	ug/L	50.0	ND	103	74-130	1.93	20	
Toluene	55.7	1.00	"	50.0	ND	111	73-131	1.63	20	
Ethylbenzene	52.7	1.00	"	50.0	ND	105	76-132	1.93	20	
m,p-Xylene	105	2.00	"	100	ND	105	69-139	2.03	20	
o-Xylene	55.2	1.00	"	50.0	ND	110	74-131	3.16	20	
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		106	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

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.

Jen Pellegrini For Noelle Doyle Mathis, President



April 24, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. April 17, 2017. This project is associated with Origins project number Y704193-01.

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-04/17/17	Y704193-01	Water	April 17, 2017 13:07	04/17/2017 14:39
BH02-04/17/17	Y704193-02	Water	April 17, 2017 13:10	04/17/2017 14:39
BH03-04/17/17	Y704193-03	Water	April 17, 2017 13:19	04/17/2017 14:39
BH04-04/17/17	Y704193-04	Water	April 17, 2017 13:22	04/17/2017 14:39
BH05-04/17/17	Y704193-05	Water	April 17, 2017 13:35	04/17/2017 14:39
BH06-04/17/17	Y704193-06	Water	April 17, 2017 13:36	04/17/2017 14:39
BH07-04/17/17	Y704193-07	Water	April 17, 2017 13:52	04/17/2017 14:39

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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1704143

page ☐ of ☐

ORIGINS
LABORATORY, INC

Client: Tasman Geosciences for APC
Address: _____
Telephone Number: (352) 262-9910
Email Address: bcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Coughlin Red VV 22-1, 22-2
Project Number: 88636316
Samples Collected By: Keith F. Mathis

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #		
BH01 - 04/17/17	4/17/17	1307	3	X				X			BTEX 8260	1
BH02 - 04/17/17	4/17/17	1310	3	X				X				2
BH03 - 04/17/17	4/17/17	1319	3	X				X				3
BH04 - 04/17/17	4/17/17	1322	3	X				X				4
BH05 - 04/17/17	4/17/17	1335	3	X				X				5
BH06 - 04/17/17	4/17/17	1336	3	X				X				6
BH07 - 04/17/17	4/17/17	1352	3	X				X				7
												8
												9
												10

Relinquished By:

Relinquished By: _____

Date: 4/17/17

Date: _____

Time: 1429

Time: _____

Received By:

Received By: _____

Date: 4-17-17

Date: _____

Time: 1439

Time: _____

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

1725 Elk Place

Denver, CO 80211

Phone: 303.433.1322

Fax: 303.265.9645

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y704193

Client: Tasman

Client Project ID: KMG - Coughlin Red VV 22-1, 22-2

Checklist Completed by: Don Lu

Shipped Via: HD

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

Date/time completed: 4-17-17 153

Airbill #: NA

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

Cooler Number/Temperature: 1 15.0 °C / °C / °C (Describe)

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<u>/</u>		<u>sampled same Day</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 ⁽¹⁾ ?	<u>/</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>/</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<u>/</u>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>/</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>/</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>/</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>/</u>			
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)		<u>/</u>		
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 QAP Project Manager

4/18/17
Date/Time Reviewed

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01-04/17/17
4/17/2017 1:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	107 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02-04/17/17
4/17/2017 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03-04/17/17
4/17/2017 1:19:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-03 (Water)

BTEX by EPA 8260C

Benzene	5.25	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"
Surrogate: Toluene-d8	102 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04-04/17/17
4/17/2017 1:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05-04/17/17

4/17/2017 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-05 (Water)

BTEX by EPA 8260C

Benzene	1.38	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	5.65	1.00	"	"	"	"	"	
Xylenes, total	4.70	1.00	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.8 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06-04/17/17
4/17/2017 1:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07-04/17/17
4/17/2017 1:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y704193-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7D2004	04/20/2017	04/21/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	109 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7D2004 - EPA 5030B (Water)										
Blank (B7D2004-BLK1)					Prepared: 04/20/2017 Analyzed: 04/21/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	70		"	62.5	111		84-121			
Surrogate: Toluene-d8	64		"	62.5	103		85-115			
Surrogate: 4-Bromofluorobenzene	67		"	62.5	107		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7D2004 - EPA 5030B (Water)										
LCS (B7D2004-BS1)					Prepared: 04/20/2017 Analyzed: 04/21/2017					
Benzene	43.4	1.00	ug/L	50.0		86.8	73.3-129			
Toluene	44.5	1.00	"	50.0		88.9	76.2-123			
Ethylbenzene	51.3	1.00	"	50.0		103	73.6-130			
m,p-Xylene	104	2.00	"	100		104	76.1-126			
o-Xylene	51.5	1.00	"	50.0		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		90.5	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7D2004 - EPA 5030B (Water)

Matrix Spike (B7D2004-MS1)		Source: Y704193-01			Prepared: 04/20/2017 Analyzed: 04/21/2017					
Benzene	46.0	1.00	ug/L	50.0	ND	92.1	74-130			
Toluene	49.0	1.00	"	50.0	ND	98.0	73-131			
Ethylbenzene	55.8	1.00	"	50.0	ND	112	76-132			
m,p-Xylene	113	2.00	"	100	ND	113	69-139			
o-Xylene	55.3	1.00	"	50.0	ND	111	74-131			
Surrogate: 1,2-Dichloroethane-d4	73		"	62.5		117	84-121			
Surrogate: Toluene-d8	65		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B7D2004 - EPA 5030B (Water)

Matrix Spike Dup (B7D2004-MSD1)		Source: Y704193-01			Prepared: 04/20/2017 Analyzed: 04/21/2017					
Benzene	44.1	1.00	ug/L	50.0	ND	88.1	74-130	4.35	20	
Toluene	46.5	1.00	"	50.0	ND	92.9	73-131	5.34	20	
Ethylbenzene	53.5	1.00	"	50.0	ND	107	76-132	4.26	20	
m,p-Xylene	108	2.00	"	100	ND	108	69-139	4.35	20	
o-Xylene	53.1	1.00	"	50.0	ND	106	74-131	4.02	20	
Surrogate: 1,2-Dichloroethane-d4	72		"	62.5		115	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

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.

Jen Pellegrini For Noelle Doyle Mathis, President



August 01, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. July 25, 2017. This project is associated with Origins project number Y707292-01.

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-7/25/2017	Y707292-01	Water	July 25, 2017 10:50	07/25/2017 14:15
BH02-7/25/2017	Y707292-02	Water	July 25, 2017 10:48	07/25/2017 14:15
BH03-7/25/2017	Y707292-03	Water	July 25, 2017 11:00	07/25/2017 14:15
BH04-7/25/2017	Y707292-04	Water	July 25, 2017 10:40	07/25/2017 14:15
BH05-7/25/2017	Y707292-05	Water	July 25, 2017 11:10	07/25/2017 14:15
BH06-7/25/2017	Y707292-06	Water	July 25, 2017 11:15	07/25/2017 14:15
BH07-7/25/2017	Y707292-07	Water	July 25, 2017 11:05	07/25/2017 14:15

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

www.originslaboratory.com

page 1 of 1

ORIGINS
LABORATORY, INC

1707292

Client: Amador/Tasman
Address: _____
Telephone Number: 979-255-4235
Email Address: rcornez@tasman-geo.com
Project Manager: Bob Cornez
Project Name: Coughlin Red VV 22-1
Project Number: 88636316
Samples Collected By: Max G. Mathis

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other	BTEX	
BH01-7/25/2017	7/25/2017	10:50	3	X				X					1
BH02-7/25/2017		10:48											2
BH03-7/25/2017		11:00											3
BH04-7/25/2017		10:40											4
BH05-7/25/2017		11:10											5
BH06-7/25/2017		11:15											6
BH07-7/25/2017		11:05											7
													8
													9
													10

Relinquished By: Max G. Mathis Date: 7/25/17 Time: 14:15
Relinquished By: _____ Date: _____ Time: _____

Received By: RL Date: 7-25-17 Time: 14:15
Received By: _____ Date: _____ Time: _____

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

Temp Received: 10.6 °C Date Results Needed: _____

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4707282

Client: Tasman

Client Project ID: MMB - Coughlin Red VV 22-1

Checklist Completed by: Don L

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

Date/time completed: 7-25-17 1441

Airbill #: NA

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

Cooler Number/Temperature: 1 / 10.6 °C 1 / 1 °C 1 / 1 °C 1 / 1 °C

Thermometer ID: 1003

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"/>		<u>sampled same day</u>
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"/>		
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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +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 7/26/17

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01-7/25/2017

7/25/2017 10:50:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y707292-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	84-121	"	"	"
Surrogate: Toluene-d8	100 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	107 %	84-114	"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02-7/25/2017

7/25/2017 10:48:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y707292-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"
Surrogate: Toluene-d8	97.2 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03-7/25/2017

7/25/2017 11:00:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y707292-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.8 %	84-121	"	"	"
Surrogate: Toluene-d8	99.2 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	84-114	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04-7/25/2017

7/25/2017 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y707292-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.4 %	84-121			"	"	"
Surrogate: Toluene-d8	99.1 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	91.3 %	84-114			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05-7/25/2017

7/25/2017 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y707292-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.5 %	84-121			"	"	"	
Surrogate: Toluene-d8	86.9 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06-7/25/2017

7/25/2017 11:15:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y707292-06 (Water)

BTEX by EPA 8260C

Benzene	2.26	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

91.4 % 84-121
98.9 % 85-115
98.6 % 84-114

" " "
" " "
" " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07-7/25/2017

7/25/2017 11:05:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y707292-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7G2609	07/26/2017	07/27/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	92.5 %	84-121	"	"	"
Surrogate: Toluene-d8	100 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	97.9 %	84-114	"	"	"

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7G2609 - EPA 5030B (Water)

Blank (B7G2609-BLK1)

Prepared: 07/26/2017 Analyzed: 07/27/2017

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5	108		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	103		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7G2609 - EPA 5030B (Water)										
LCS (B7G2609-BS1)					Prepared: 07/26/2017 Analyzed: 07/26/2017					
Benzene	46.1	1.00	ug/L	50.0		92.1	73.3-129			
Toluene	46.6	1.00	"	50.0		93.1	76.2-123			
Ethylbenzene	47.0	1.00	"	50.0		94.1	73.6-130			
m,p-Xylene	91.5	2.00	"	100		91.5	76.1-126			
o-Xylene	48.0	1.00	"	50.0		96.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B7G2609 - EPA 5030B (Water)

Matrix Spike (B7G2609-MS1)		Source: Y707291-08			Prepared: 07/26/2017 Analyzed: 07/26/2017					
Benzene	45.6	1.00	ug/L	50.0	ND	91.2	74-130			
Toluene	45.3	1.00	"	50.0	ND	90.6	73-131			
Ethylbenzene	45.4	1.00	"	50.0	ND	90.8	76-132			
m,p-Xylene	89.1	2.00	"	100	ND	89.1	69-139			
o-Xylene	46.2	1.00	"	50.0	ND	92.3	74-131			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.4	85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		103	84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B7G2609 - EPA 5030B (Water)

Matrix Spike Dup (B7G2609-MSD1)		Source: Y707291-08			Prepared: 07/26/2017 Analyzed: 07/27/2017					
Benzene	44.2	1.00	ug/L	50.0	ND	88.4	74-130	3.12	20	
Toluene	43.7	1.00	"	50.0	ND	87.4	73-131	3.59	20	
Ethylbenzene	43.6	1.00	"	50.0	ND	87.1	76-132	4.16	20	
m,p-Xylene	85.1	2.00	"	100	ND	85.1	69-139	4.61	20	
o-Xylene	45.3	1.00	"	50.0	ND	90.5	74-131	1.97	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

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.

Jen Pellegrini For Noelle Doyle Mathis, President



October 26, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1, 22-2 Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1, 22-2 received by Origins Laboratory, Inc. October 18, 2017. This project is associated with Origins project number Y710275-01.

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 10/18/2017	Y710275-01	Water	October 18, 2017 11:15	10/18/2017 17:15
BH02 10/18/2017	Y710275-02	Water	October 18, 2017 11:30	10/18/2017 17:15
BH03 10/18/2017	Y710275-03	Water	October 18, 2017 11:50	10/18/2017 17:15
BH05 10/18/2017	Y710275-04	Water	October 18, 2017 11:50	10/18/2017 17:15
BH06 10/18/2017	Y710275-05	Water	October 18, 2017 12:05	10/18/2017 17:15
BH07 10/18/2017	Y710275-06	Water	October 18, 2017 11:40	10/18/2017 17:15
BH04 - 10/19/2017	Y710295-01	Water	October 19, 2017 9:05	10/19/2017 16:01

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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page 1 of 1

ORIGINS
LABORATORY, INC

Client: Anadarko/Tasman
Address: 6899 N Pecos St
Telephone Number: 9704816909
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Coughlin Red VV 22-1
Project Number: 88636316
Samples Collected By: Max Bow24

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
BH01 10/18/2017	1115	10/18/2017	5	X				X			BTEX	1
BH02 10/18/2017	1130	1130	5	X				X				2
BH03 10/18/2017	1150	1150	5	X				X				3
BH05 10/18/2017	1150	1150	5	X				X				4
BH06 10/18/2017	1205	1205	5	X				X				5
BH07 10/18/2017	1147	1147	5	X				X				6
												7
												8
												9
												10

Relinquished By: *[Signature]*
Date: 10/18/2017
Time: 1115

Relinquished By: *[Signature]*
Date: 10/18/2017
Time: 1715

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

1725 Elk Place

Denver, CO 80211

Phone: 303.433.1322

Fax: 303.265.9645

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y710275

Client: Tasman

Client Project ID: Imperial Coughlin Red VV 22-1

Checklist Completed by: Dan L...

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

Date/time completed: 10-19-17 1006

Airbill #: NA

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

Cooler Number/Temperature: ✓ 1.3 °C ✓ °C ✓ °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? if yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 10/20/17

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4710295

Client: Tasman

Client Project ID: KMG - Coughlin Red

Checklist Completed by: Dan M

Shipped Via: HD in Pickup

Date/time completed: 10-20-12 1126

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.7 °C / °C / °C (Describe) °C

Thermometer ID: T05

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 10-20-12 1126

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH01 10/18/2017
10/18/2017 11:15:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y710275-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121	"	"	"
Surrogate: Toluene-d8	101 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.6 %	84-114	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH02 10/18/2017
10/18/2017 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710275-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.0 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.7 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH03 10/18/2017
10/18/2017 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710275-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.8 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH05 10/18/2017
10/18/2017 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710275-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.4 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH06 10/18/2017
10/18/2017 12:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710275-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH07 10/18/2017
10/18/2017 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710275-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2401	10/24/2017	10/24/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.7 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

BH04 - 10/19/2017

10/19/2017 9:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710295-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7J2601	10/26/2017	10/26/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	84-114			"	"	"	

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2401 - EPA 5030B (Water)

Blank (B7J2401-BLK1)

Prepared: 10/24/2017 Analyzed: 10/24/2017

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	103		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	98.8		84-114			

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B7J2401 - EPA 5030B (Water)

LCS (B7J2401-BS1)

Prepared: 10/24/2017 Analyzed: 10/24/2017

Benzene	48.3	1.00	ug/L	50.0		96.6	73.3-129
Toluene	52.1	1.00	"	50.0		104	76.2-123
Ethylbenzene	55.5	1.00	"	50.0		111	73.6-130
m,p-Xylene	97.7	2.00	"	100		97.7	76.1-126
o-Xylene	50.5	1.00	"	50.0		101	76.6-124
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		108	84-121
Surrogate: Toluene-d8	62		"	62.5		99.5	85-115
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2401 - EPA 5030B (Water)

Matrix Spike (B7J2401-MS1)		Source: Y710247-01			Prepared: 10/24/2017 Analyzed: 10/24/2017					
Benzene	53.5	1.00	ug/L	50.0	0.150	107	74-130			
Toluene	57.4	1.00	"	50.0	ND	115	73-131			
Ethylbenzene	62.9	1.00	"	50.0	ND	126	76-132			
m,p-Xylene	105	2.00	"	100	ND	105	69-139			
o-Xylene	53.8	1.00	"	50.0	ND	108	74-131			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.7	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.0	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2401 - EPA 5030B (Water)

Matrix Spike Dup (B7J2401-MSD1)		Source: Y710247-01			Prepared: 10/24/2017 Analyzed: 10/24/2017					
Benzene	53.6	1.00	ug/L	50.0	0.150	107	74-130	0.299	20	
Toluene	58.8	1.00	"	50.0	ND	118	73-131	2.43	20	
Ethylbenzene	61.9	1.00	"	50.0	ND	124	76-132	1.57	20	
m,p-Xylene	101	2.00	"	100	ND	101	69-139	3.26	20	
o-Xylene	52.6	1.00	"	50.0	ND	105	74-131	2.16	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.1	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

Blank (B7J2601-BLK1)

Prepared: 10/26/2017 Analyzed: 10/26/2017

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	102		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.0		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7J2601 - EPA 5030B (Water)										
Blank (B7J2601-BLK2)					Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.8	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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
Batch B7J2601 - EPA 5030B (Water)										
LCS (B7J2601-BS1)					Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	53.2	1.00	ug/L	50.0		106	73.3-129			
Toluene	53.4	1.00	"	50.0		107	76.2-123			
Ethylbenzene	52.6	1.00	"	50.0		105	73.6-130			
m,p-Xylene	105	2.00	"	100		105	76.1-126			
o-Xylene	54.6	1.00	"	50.0		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.8	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

LCS (B7J2601-BS2)

Prepared: 10/26/2017 Analyzed: 10/26/2017

Benzene	57.5	1.00	ug/L	50.0	115	73.3-129
Toluene	59.2	1.00	"	50.0	118	76.2-123
Ethylbenzene	59.4	1.00	"	50.0	119	73.6-130
m,p-Xylene	115	2.00	"	100	115	76.1-126
o-Xylene	57.2	1.00	"	50.0	114	76.6-124
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5	91.1	84-121
Surrogate: Toluene-d8	63		"	62.5	101	85-115
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102	84-114

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

Matrix Spike (B7J2601-MS1)		Source: Y710382-01			Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	312	4.00	ug/L	200	56.4	128	74-130			
Toluene	484	4.00	"	200	231	127	73-131			
Ethylbenzene	285	4.00	"	200	16.4	134	76-132			QM-07
m,p-Xylene	725	8.00	"	400	198	132	69-139			
o-Xylene	299	4.00	"	200	47.3	126	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.6	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

Matrix Spike (B7J2601-MS2)		Source: Y710295-01			Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	58.1	1.00	ug/L	50.0	ND	116	74-130			
Toluene	61.6	1.00	"	50.0	ND	123	73-131			
Ethylbenzene	59.4	1.00	"	50.0	ND	119	76-132			
m,p-Xylene	115	2.00	"	100	ND	115	69-139			
o-Xylene	58.0	1.00	"	50.0	ND	116	74-131			
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.1	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

Matrix Spike Dup (B7J2601-MSD1)		Source: Y710382-01			Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	297	4.00	ug/L	200	56.4	120	74-130	4.89	20	
Toluene	467	4.00	"	200	231	118	73-131	3.60	20	
Ethylbenzene	269	4.00	"	200	16.4	126	76-132	5.62	20	
m,p-Xylene	693	8.00	"	400	198	124	69-139	4.50	20	
o-Xylene	286	4.00	"	200	47.3	120	74-131	4.28	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.5	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1, 22-2

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 B7J2601 - EPA 5030B (Water)

Matrix Spike Dup (B7J2601-MSD2)		Source: Y710295-01			Prepared: 10/26/2017 Analyzed: 10/26/2017					
Benzene	62.8	1.00	ug/L	50.0	ND	126	74-130	7.79	20	
Toluene	67.5	1.00	"	50.0	ND	135	73-131	9.06	20	QM-07
Ethylbenzene	66.0	1.00	"	50.0	ND	132	76-132	10.5	20	
m,p-Xylene	128	2.00	"	100	ND	128	69-139	10.6	20	
o-Xylene	63.5	1.00	"	50.0	ND	127	74-131	9.10	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1, 22-2

Notes and Definitions

U Sample is Non-Detect.

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

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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January 29, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Coughlin Red VV 22-1

Project Number - 88636316

Attached are your analytical results for KMG - Coughlin Red VV 22-1 received by Origins Laboratory, Inc. January 23, 2018. This project is associated with Origins project number Y801324-01.

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

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 1/23/18	Y801324-01	Water	January 23, 2018 10:35	01/23/2018 17:00
BH02 - 1/23/18	Y801324-02	Water	January 23, 2018 10:15	01/23/2018 17:00
BH03 - 1/23/18	Y801324-03	Water	January 23, 2018 10:25	01/23/2018 17:00
BH04 - 1/23/18	Y801324-04	Water	January 23, 2018 10:15	01/23/2018 17:00
BH05 - 1/23/18	Y801324-05	Water	January 23, 2018 10:05	01/23/2018 17:00
BH06 - 1/23/18	Y801324-06	Water	January 23, 2018 10:00	01/23/2018 17:00
BH07 - 1/23/18	Y801324-07	Water	January 23, 2018 9:55	01/23/2018 17:00

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

www.originslaboratory.com

page 1 of 1

ORIGINS
LABORATORY, INC

Client: APC/TASMAN

Address: 6899 N Pecos St.

Telephone Number: 970-4816909





Project Manager/Send Report To: Bob Cornez

Email Address: rcornez@tasman-geo.com

Project Name/Number: Coughlin Red VV22-1/88636316

Samples Collected By: Max Delgado

Y801324

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other		
BH01 - 1/23/18	1/23/18	1035	3	X				X				BTEX	1
BH02 - 1/23/18		1015											2
BH03 - 1/23/18		1015											3
BH04 - 1/23/18		1015											4
BH05 - 1/23/18		1005											5
BH06 - 1/23/18		1000											6
BH07 - 1/23/18		0955											7
													8
													9
													10
Relinquished By: 	Date: 1/23/18	Time: 1700	Received By: 	Date: 1/23/18	Time: 1700	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							
Relinquished By: 	Date: 1/23/18	Time: 1700	Received By: 	Date: 1/23/18	Time: 1700	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							

Prints Result Naardart

Comments:

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

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
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y801324

Client: Tasman

Client Project ID: KMG-Coughlin Red VV 22-1

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 1/24/18

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.0 °C 1 / 1 °C 1 / 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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) JG

Date/Time Reviewed 1/25/18

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH01 - 1/23/18

1/23/2018 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-01 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.9 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.0 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH02 - 1/23/18

1/23/2018 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-02 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH03 - 1/23/18

1/23/2018 10:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-03 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH04 - 1/23/18

1/23/2018 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-04 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.3 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.3 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH05 - 1/23/18

1/23/2018 10:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-05 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.9 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.4 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH06 - 1/23/18

1/23/2018 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-06 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.9 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

BH07 - 1/23/18
1/23/2018 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y801324-07 (Water)

BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8A2403	01/24/2018	01/25/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.4 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

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
Batch B8A2403 - EPA 5030B (Water)										
Blank (B8A2403-BLK1)					Prepared: 01/24/2018 Analyzed: 01/24/2018					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.8		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

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 B8A2403 - EPA 5030B (Water)

LCS (B8A2403-BS1)

Prepared: 01/24/2018 Analyzed: 01/24/2018

Benzene	51.2	1.00	ug/L	50.0		102	73.3-129			
Toluene	48.5	1.00	"	50.0		97.1	76.2-123			
Ethylbenzene	47.7	1.00	"	50.0		95.4	73.6-130			
m,p-Xylene	98.1	2.00	"	100		98.1	76.1-126			
o-Xylene	48.7	1.00	"	50.0		97.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		103	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.3	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

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 B8A2403 - EPA 5030B (Water)

Matrix Spike (B8A2403-MS1)		Source: Y801322-01			Prepared: 01/24/2018 Analyzed: 01/24/2018					
Benzene	61.7	1.00	ug/L	50.0	12.1	99.3	74-130			
Toluene	52.0	1.00	"	50.0	ND	104	73-131			
Ethylbenzene	53.2	1.00	"	50.0	5.56	95.3	76-132			
m,p-Xylene	107	2.00	"	100	9.26	98.2	69-139			
o-Xylene	51.4	1.00	"	50.0	0.920	101	74-131			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		105	84-121			
Surrogate: Toluene-d8	63		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 88636316
Project: KMG - Coughlin Red VV 22-1

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
Batch B8A2403 - EPA 5030B (Water)										
Matrix Spike Dup (B8A2403-MSD1)		Source: Y801322-01			Prepared: 01/24/2018 Analyzed: 01/24/2018					
Benzene	63.8	1.00	ug/L	50.0	12.1	103	74-130	3.28	20	
Toluene	52.5	1.00	"	50.0	ND	105	73-131	0.842	20	
Ethylbenzene	56.1	1.00	"	50.0	5.56	101	76-132	5.27	20	
m,p-Xylene	113	2.00	"	100	9.26	104	69-139	5.18	20	
o-Xylene	53.1	1.00	"	50.0	0.920	104	74-131	3.21	20	
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.7	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	84-114			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88636316

Project: KMG - Coughlin Red VV 22-1

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 For Noelle Doyle Mathis, President