



February 14, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 13, 2019. This project is associated with Origins project number Y902161-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@13'	Y902161-01	Soil	February 13, 2019 14:04	02/13/2019 16:30
B02@14'	Y902161-02	Soil	February 13, 2019 14:10	02/13/2019 16:30

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

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page 1 of 1

4902161

**ORIGINS**  
LABORATORY, INC

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: rcornez@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 <sub>3</sub>	Other	Groundwater	Soil	Other			
Bole 13'	2/13/19	2:04	1									1	Same Day
Bole 14'	2/13/19	2:10	1									2	
												3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	
Relinquished By: [Signature]	Date: 2/13/19	Time: 1630	Time: 1630	Received By: [Signature]	Date: 2/13/19	Time: 1630	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>						
Relinquished By:	Date:	Time:	Time:	Received By:	Date:	Time:							

Date Results Needed

4/9

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4902161

Client: Tasman

Client Project ID: KMG-Tuttle L 17-6

Checklist Completed by: Dan L...

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

Date/time completed: 2-13-12

Airbill #: N/A

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

Cooler Number/Temperature: ✓ / 4.9 °C ✓ / \_\_\_\_\_ °C ✓ / \_\_\_\_\_ °C ✓ / \_\_\_\_\_ °C (Describe)

Thermometer ID: 6063

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

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 2-13-12

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**B01@13'**

**2/13/2019 2:04:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902161-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	<b>256</b>	25.0	mg/kg	1	B9B1302	JTD	02/13/2019	02/13/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 82.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>143</b>	5.00	mg/kg	25	B9B1301	KDK	02/13/2019	02/13/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	<b>0.132</b>	0.050	"	"	"	KDK	"	"	
Xylenes, total	<b>3.00</b>	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.8 % 70-130 " " "  
Surrogate: Toluene-d8 97.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.2 % 70-130 " " "

Origins Laboratory, Inc.



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Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**B02@14'**

**2/13/2019 2:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902161-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	133	25.0	mg/kg	1	B9B1302	JTD	02/13/2019	02/13/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	64.1	5.00	mg/kg	25	B9B1301	KDK	02/13/2019	02/13/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.179	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 92.2 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

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Tasman Geosciences  
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Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1301 - EPA 5030 (soil)</b>										
<b>Blank (B9B1301-BLK1)</b>					Prepared: 02/13/2019 Analyzed: 02/13/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.6	70-130			

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Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1301 - EPA 5030 (soil)</b>										
<b>LCS (B9B1301-BS1)</b>					Prepared: 02/13/2019 Analyzed: 02/13/2019					
Benzene	0.093	0.002	mg/kg	0.100		93.0	77.1-124			
Toluene	0.089	0.002	"	0.100		88.6	74.5-128			
Ethylbenzene	0.080	0.002	"	0.100		80.5	66.4-127			
m,p-Xylene	0.169	0.004	"	0.200		84.5	76.6-124			
o-Xylene	0.083	0.002	"	0.100		82.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Project Number: 89156407  
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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 B9B1301 - EPA 5030 (soil)**

Matrix Spike (B9B1301-MS1)		Source: Y902147-01			Prepared: 02/13/2019 Analyzed: 02/13/2019					
Benzene	0.082	0.002	mg/kg	0.100	ND	81.5	71.8-126			
Toluene	0.079	0.002	"	0.100	ND	78.6	65.1-130			
Ethylbenzene	0.072	0.002	"	0.100	ND	71.7	62.2-130			
m,p-Xylene	0.151	0.004	"	0.200	ND	75.7	46.5-137			
o-Xylene	0.073	0.002	"	0.100	0.0003	73.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B1301 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1301-MSD1)		Source: Y902147-01			Prepared: 02/13/2019 Analyzed: 02/13/2019					
Benzene	0.091	0.002	mg/kg	0.100	ND	91.2	71.8-126	11.3	11.3	
Toluene	0.091	0.002	"	0.100	ND	91.5	65.1-130	15.1	15.4	
Ethylbenzene	0.084	0.002	"	0.100	ND	83.9	62.2-130	15.7	19.6	
m,p-Xylene	0.178	0.004	"	0.200	ND	89.2	46.5-137	16.3	19.2	
o-Xylene	0.086	0.002	"	0.100	0.0003	86.4	54.2-134	16.6	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B1302 - EPA 3580**

**Blank (B9B1302-BLK1)**

Prepared: 02/13/2019 Analyzed: 02/13/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	40		"	50.0		79.1	59-131			

**LCS (B9B1302-BS1)**

Prepared: 02/13/2019 Analyzed: 02/13/2019

Diesel (C10-C28)	986	50.0	mg/kg	1000		98.6	64-121			
Residual Range Organics (C28-C40)	932	200	"	1000		93.2	58-124			
Surrogate: o-Terphenyl	49		"	50.0		97.7	59-131			

**Matrix Spike (B9B1302-MS1)**

**Source: Y902147-01**

Prepared: 02/13/2019 Analyzed: 02/13/2019

Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	53-125			
Residual Range Organics (C28-C40)	843	200	"	1000	ND	84.3	47-133			
Surrogate: o-Terphenyl	42		"	50.0		84.6	59-131			

**Matrix Spike Dup (B9B1302-MSD1)**

**Source: Y902147-01**

Prepared: 02/13/2019 Analyzed: 02/13/2019

Diesel (C10-C28)	977	50.0	mg/kg	1000	ND	97.7	53-125	4.86	20	
Residual Range Organics (C28-C40)	928	200	"	1000	ND	92.8	47-133	9.61	20	
Surrogate: o-Terphenyl	46		"	50.0		91.1	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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

February 18, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 15, 2019. This project is associated with Origins project number Y902206-01.

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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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@13'	Y902206-01	Soil	February 15, 2019 9:26	02/15/2019 17:00
E01@13'	Y902206-02	Soil	February 15, 2019 9:33	02/15/2019 17:00
B03@14'	Y902206-03	Soil	February 15, 2019 9:54	02/15/2019 17:00
E03@13'	Y902206-04	Soil	February 15, 2019 10:32	02/15/2019 17:00
N03@13'	Y902206-05	Soil	February 15, 2019 12:53	02/15/2019 17:00
B04@14'	Y902206-06	Soil	February 15, 2019 13:00	02/15/2019 17:00
E05@13'	Y902206-07	Soil	February 15, 2019 13:07	02/15/2019 17:00
B05@15'	Y902206-08	Soil	February 15, 2019 13:42	02/15/2019 17:00
N05@13'	Y902206-09	Soil	February 15, 2019 13:44	02/15/2019 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

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page 1 of 1

**ORIGINS**  
LABORATORY, INC

7902206

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: R2014200.Tasman@geos.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 <sub>3</sub>	Other	Groundwater	Soil	At Summa #		
N01@13'	2/15/19	9:26	1								GRX	1
E01@13'		9:33	1								GRX	2
B03@14'		9:54	1								GRX	3
E03@13'		10:32	1								GRX	4
N03@13'		12:53	1								GRX	5
B04@14'		1:00	1								GRX	6
E05@13'		1:07	1								GRX	7
B05@15'		1:42	1								GRX	8
N05@13'		1:44	1								GRX	9
											GRX	10
Separate Report												
Relinquished By:	Date: 2/15/19	Time: 1700	Received By:	Date: 2/15/19	Time: 1700	Turnaround Time:						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Same Day <input type="checkbox"/>			24 Hr <input type="checkbox"/>			
						48 Hr <input type="checkbox"/>			72 Hr <input type="checkbox"/>			
						Standard <input type="checkbox"/>						

Date Results Needed

5.2

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902206

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/15/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.2 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C (Describe)

Thermometer ID: T003

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

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

Reviewed by: [Signature] (Project Manager)

2/15/19  
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: [none]  
Project: KMG - Tuttle L 17-6

N01@13'

2/15/2019 9:26:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	34.7	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 82.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	50.1	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/16/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.066	0.050	"	"	"	JTD	"	"	
Xylenes, total	0.668	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 96.2 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.0 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E01@13'

2/15/2019 9:33:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	34.4	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.186	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 96.3 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.0 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

B03@14'

2/15/2019 9:54:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902206-03 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 72.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 96.0 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 94.2 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E03@13'

2/15/2019 10:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	35.7	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	119	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	0.148	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.156	0.050	"	"	"	JTD	"	"	
Xylenes, total	1.03	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.4 % 70-130 " " "  
Surrogate: Toluene-d8 106 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 120 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N03@13'

2/15/2019 12:53:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902206-05 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	28.6	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 89.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	22.5	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.3 % 70-130 " " "  
Surrogate: Toluene-d8 102 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.4 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B04@14'**

**2/15/2019 1:00:00PM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-06 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 80.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 93.7 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 94.6 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E05@13'

2/15/2019 1:07:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-07 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	27.0	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/15/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.7 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	37.3	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.106	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 96.8 % 70-130 " " "  
Surrogate: Toluene-d8 102 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

B05@15'

2/15/2019 1:42:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902206-08 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 67.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	15.2	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	0.106	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.238	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 92.2 % 70-130 " " "

Surrogate: Toluene-d8 106 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 91.4 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N05@13'

2/15/2019 1:44:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902206-09 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1508	JTD	02/15/2019	02/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	18.0	5.00	mg/kg	25	B9B1507	JTD	02/15/2019	02/15/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.146	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.9 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.6 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1507 - EPA 5030 (soil)</b>										
<b>Blank (B9B1507-BLK1)</b>					Prepared: 02/15/2019 Analyzed: 02/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.1	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1507 - EPA 5030 (soil)**

**LCS (B9B1507-BS1)**

Prepared: 02/15/2019 Analyzed: 02/15/2019

Benzene	0.096	0.002	mg/kg	0.100		95.9	77.1-124			
Toluene	0.095	0.002	"	0.100		95.1	74.5-128			
Ethylbenzene	0.095	0.002	"	0.100		95.3	66.4-127			
m,p-Xylene	0.185	0.004	"	0.200		92.7	76.6-124			
o-Xylene	0.084	0.002	"	0.100		84.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.9	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1507 - EPA 5030 (soil)**

Matrix Spike (B9B1507-MS1)		Source: Y902211-02			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	2.97	0.050	mg/kg	2.50	ND	119	71.8-126			
Toluene	3.05	0.050	"	2.50	ND	122	65.1-130			
Ethylbenzene	3.15	0.050	"	2.50	ND	126	62.2-130			
m,p-Xylene	6.17	0.100	"	5.00	ND	123	46.5-137			
o-Xylene	3.00	0.050	"	2.50	ND	120	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1507 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1507-MSD1)		Source: Y902211-02			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	2.75	0.050	mg/kg	2.50	ND	110	71.8-126	7.55	11.3	
Toluene	2.74	0.050	"	2.50	ND	110	65.1-130	10.6	15.4	
Ethylbenzene	2.79	0.050	"	2.50	ND	112	62.2-130	12.0	19.6	
m,p-Xylene	5.58	0.100	"	5.00	ND	112	46.5-137	10.1	19.2	
o-Xylene	2.76	0.050	"	2.50	ND	111	54.2-134	8.31	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		89.5	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B1508 - EPA 3580**

**Blank (B9B1508-BLK1)**

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		75.6	59-131			

**LCS (B9B1508-BS1)**

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	902	50.0	mg/kg	1000		90.2	64-121			
Residual Range Organics (C28-C40)	847	200	"	1000		84.7	58-124			
Surrogate: o-Terphenyl	44		"	50.0		87.8	59-131			

**Matrix Spike (B9B1508-MS1)**

**Source: Y902211-02**

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	909	50.0	mg/kg	1000	ND	90.9	53-125			
Residual Range Organics (C28-C40)	866	200	"	1000	ND	86.6	47-133			
Surrogate: o-Terphenyl	42		"	50.0		84.1	59-131			

**Matrix Spike Dup (B9B1508-MSD1)**

**Source: Y902211-02**

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	952	50.0	mg/kg	1000	ND	95.2	53-125	4.65	20	
Residual Range Organics (C28-C40)	895	200	"	1000	ND	89.5	47-133	3.30	20	
Surrogate: o-Terphenyl	43		"	50.0		86.8	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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

February 18, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6****Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 15, 2019. This project is associated with Origins project number Y902207-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02@9'	Y902207-01	Soil	February 15, 2019 9:30	02/15/2019 17:00
E02@9'	Y902207-02	Soil	February 15, 2019 9:38	02/15/2019 17:00
E04@9'	Y902207-03	Soil	February 15, 2019 10:35	02/15/2019 17:00
N04@9'	Y902207-04	Soil	February 15, 2019 12:55	02/15/2019 17:00
E06@9'	Y902207-05	Soil	February 15, 2019 13:10	02/15/2019 17:00
N06@9'	Y902207-06	Soil	February 15, 2019 13:48	02/15/2019 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 - Tuttle L 17-6

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page 1 of 1

# ORIGINS

LABORATORY, INC

4902207

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Christ

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: Rcornez@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa			Other
N02091	2/15/19	9:30	1									1	
E02091		9:38	1									2	
E04091		10:35	1									3	
N04091		12:55	1									4	
E06091		1:10	1									5	
N06091		1:48	1									6	
												7	Separate
												8	Report
												9	
												10	

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Christ	2/15/19	1700	[Signature]	2/15/19	1700	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/>
						48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>
						Standard <input type="checkbox"/>

Date Results Needed

5.2

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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4902207 Client: Tasman  
Client Project ID: KMG - Tuttle L 17-6  
Checklist Completed by: JG Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Date/time completed: 2/15/2019 Airbill #: N/A  
Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)  
Cooler Number/Temperature: 1 5.2 °C 1 °C 1 °C 1 °C  
Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed 2/15/19

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 - Tuttle L 17-6

N02@9'

2/15/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902207-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 72.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "  
Surrogate: Toluene-d8 97.6 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E02@9'

2/15/2019 9:38:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902207-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	39.6	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 82.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "  
Surrogate: Toluene-d8 98.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E04@9'

2/15/2019 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902207-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 117 % 70-130 " " "  
Surrogate: Toluene-d8 94.4 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.6 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N04@9'

2/15/2019 12:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902207-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 74.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 110 % 70-130 " " "  
Surrogate: Toluene-d8 95.4 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.7 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E06@9'

2/15/2019 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902207-05 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 79.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " "  
Surrogate: Toluene-d8 95.7 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.7 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N06@9'

2/15/2019 1:48:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902207-06 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1502	JTD	02/15/2019	02/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 71.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1.00	0.200	mg/kg	1	B9B1501	JTD	02/15/2019	02/15/2019	
Benzene	0.003	0.002	"	"	"	JTD	"	"	
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	0.016	0.002	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " "  
Surrogate: Toluene-d8 97.7 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1501 - EPA 5030 (soil)</b>										
<b>Blank (B9B1501-BLK1)</b>					Prepared: 02/15/2019 Analyzed: 02/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1501 - EPA 5030 (soil)</b>										
<b>Blank (B9B1501-BLK2)</b>					Prepared: 02/15/2019 Analyzed: 02/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1501 - EPA 5030 (soil)</b>										
<b>LCS (B9B1501-BS1)</b>					Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.100	0.002	mg/kg	0.100		100	77.1-124			
Toluene	0.098	0.002	"	0.100		97.6	74.5-128			
Ethylbenzene	0.083	0.002	"	0.100		82.5	66.4-127			
m,p-Xylene	0.180	0.004	"	0.200		89.8	76.6-124			
o-Xylene	0.085	0.002	"	0.100		84.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.5	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1501 - EPA 5030 (soil)</b>										
<b>LCS (B9B1501-BS2)</b>					Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.101	0.002	mg/kg	0.100		101	77.1-124			
Toluene	0.097	0.002	"	0.100		97.3	74.5-128			
Ethylbenzene	0.088	0.002	"	0.100		87.8	66.4-127			
m,p-Xylene	0.187	0.004	"	0.200		93.7	76.6-124			
o-Xylene	0.088	0.002	"	0.100		88.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Tuttle L 17-6

**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 B9B1501 - EPA 5030 (soil)**

Matrix Spike (B9B1501-MS1)		Source: Y902194-01			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.098	0.002	mg/kg	0.100	ND	98.2	71.8-126			
Toluene	0.099	0.002	"	0.100	ND	98.5	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	88.2	62.2-130			
m,p-Xylene	0.191	0.004	"	0.200	ND	95.3	46.5-137			
o-Xylene	0.090	0.002	"	0.100	ND	90.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1501 - EPA 5030 (soil)**

Matrix Spike (B9B1501-MS2)		Source: Y902207-01			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.107	0.002	mg/kg	0.100	ND	107	71.8-126			
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	92.1	62.2-130			
m,p-Xylene	0.197	0.004	"	0.200	ND	98.4	46.5-137			
o-Xylene	0.093	0.002	"	0.100	0.0003	92.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1501 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1501-MSD1)		Source: Y902194-01			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.093	0.002	mg/kg	0.100	ND	93.3	71.8-126	5.12	11.3	
Toluene	0.094	0.002	"	0.100	ND	93.6	65.1-130	5.18	15.4	
Ethylbenzene	0.082	0.002	"	0.100	ND	82.4	62.2-130	6.87	19.6	
m,p-Xylene	0.177	0.004	"	0.200	ND	88.3	46.5-137	7.58	19.2	
o-Xylene	0.085	0.002	"	0.100	ND	84.5	54.2-134	6.41	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1501 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1501-MSD2)		Source: Y902207-01			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126	0.391	11.3	
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	0.787	15.4	
Ethylbenzene	0.091	0.002	"	0.100	ND	90.9	62.2-130	1.33	19.6	
m,p-Xylene	0.195	0.004	"	0.200	ND	97.4	46.5-137	1.08	19.2	
o-Xylene	0.092	0.002	"	0.100	0.0003	91.7	54.2-134	1.24	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9B1502 - EPA 3550B

#### Blank (B9B1502-BLK1)

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.6	59-131			

#### Blank (B9B1502-BLK2)

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		75.3	59-131			

#### LCS (B9B1502-BS1)

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	1120	50.0	mg/kg	1000		112	64-121			
Residual Range Organics (C28-C40)	1100	200	"	1000		110	58-124			
Surrogate: o-Terphenyl	55		"	50.0		110	59-131			

#### LCS (B9B1502-BS2)

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	874	50.0	mg/kg	1000		87.4	64-121			
Residual Range Organics (C28-C40)	872	200	"	1000		87.2	58-124			
Surrogate: o-Terphenyl	43		"	50.0		85.1	59-131			

#### Matrix Spike (B9B1502-MS1)

Source: Y902183-01

Prepared: 02/15/2019 Analyzed: 02/15/2019

Diesel (C10-C28)	976	50.0	mg/kg	1000	21.6	95.4	53-125			
Residual Range Organics (C28-C40)	935	200	"	1000	7.14	92.8	47-133			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B1502 - EPA 3550B</b>										
<b>Matrix Spike (B9B1502-MS1)</b>		<b>Source: Y902183-01</b>			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Surrogate: o-Terphenyl	46		mg/kg	50.0		91.3	59-131			
<b>Matrix Spike (B9B1502-MS2)</b>		<b>Source: Y902194-01</b>			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Diesel (C10-C28)	923	50.0	mg/kg	1000	ND	92.3	53-125			
Residual Range Organics (C28-C40)	909	200	"	1000	13.9	89.5	47-133			
Surrogate: o-Terphenyl	45		"	50.0		89.0	59-131			
<b>Matrix Spike Dup (B9B1502-MSD1)</b>		<b>Source: Y902183-01</b>			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Diesel (C10-C28)	989	50.0	mg/kg	1000	21.6	96.8	53-125	1.41	20	
Residual Range Organics (C28-C40)	962	200	"	1000	7.14	95.5	47-133	2.93	20	
Surrogate: o-Terphenyl	47		"	50.0		93.4	59-131			
<b>Matrix Spike Dup (B9B1502-MSD2)</b>		<b>Source: Y902194-01</b>			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Diesel (C10-C28)	927	50.0	mg/kg	1000	ND	92.7	53-125	0.417	20	
Residual Range Organics (C28-C40)	896	200	"	1000	13.9	88.2	47-133	1.41	20	
Surrogate: o-Terphenyl	43		"	50.0		85.0	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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



February 20, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 19, 2019. This project is associated with Origins project number Y902252-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B06@15'	Y902252-01	Soil	February 19, 2019 10:41	02/19/2019 17:15
B07@15'	Y902252-02	Soil	February 19, 2019 11:24	02/19/2019 17:15

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.*



Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**

LABORATORY, INC

www.originslaboratory.com

4900252

page 1 of 1

Client: Tasman (on APC's behalf)

Address:

6899 Picross St

Telephone Number:

Email Address:

destined@tasmangeo.com

Project Manager:

R. Cornez

Project Name:

Tuttle L 17-6

Project Number:

89156407

Samples Collected By:

Chris A

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Sampled	Other	TPH-DRO		GP-TX
B06@15'	2/19/19	10:41	1	X					X		X	X	1	
B07@15'	✓	11:24	1	X					X		X	X	2	
													3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	
Relinquished By:	Date: 2/19/19	Time: 1715	Received By:	Date: 2/19/19	Time: 1715	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>								
Relinquished By:	Date: 2/19/19	Time: 1715	Received By:	Date: 2/19/19	Time: 1715	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>								

Date Results Needed

2.7

Origins Laboratory, Inc.

Jeff Pellipini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902252 Client: Tasman  
Client Project ID: KMG - Tuttle L 17-6  
Checklist Completed by: JG Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Date/time completed: 2/19/2019 Airbill #: N/A  
Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)  
Cooler Number/Temperature: 1 12.7°C 1°C 1°C 1°C  
Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed 2/19/19

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 - Tuttle L 17-6

B06@15'

2/19/2019 10:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902252-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1903	KDK	02/19/2019	02/19/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 73.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	38.4	5.00	mg/kg	25	B9B1902	KDK	02/19/2019	02/19/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.624	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 82.2 % 70-130 " " "  
Surrogate: Toluene-d8 98.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.1 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

B07@15'

2/19/2019 11:24:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902252-02 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B1903	KDK	02/19/2019	02/19/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 78.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	16.1	5.00	mg/kg	25	B9B1902	KDK	02/19/2019	02/19/2019	
Benzene	0.118	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.354	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 81.1 % 70-130 " " "  
Surrogate: Toluene-d8 98.1 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1902 - EPA 5030 (soil)</b>										
<b>Blank (B9B1902-BLK1)</b>					Prepared: 02/19/2019 Analyzed: 02/19/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.7	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1902 - EPA 5030 (soil)</b>										
<b>Blank (B9B1902-BLK2)</b>					Prepared: 02/19/2019 Analyzed: 02/19/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1902 - EPA 5030 (soil)**

**LCS (B9B1902-BS1)**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.098	0.002	"	0.100		97.7	74.5-128			
Ethylbenzene	0.088	0.002	"	0.100		88.2	66.4-127			
m,p-Xylene	0.187	0.004	"	0.200		93.5	76.6-124			
o-Xylene	0.089	0.002	"	0.100		88.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B1902 - EPA 5030 (soil)</b>										
<b>LCS (B9B1902-BS2)</b>					Prepared: 02/19/2019 Analyzed: 02/19/2019					
Benzene	0.101	0.002	mg/kg	0.100		101	77.1-124			
Toluene	0.099	0.002	"	0.100		98.6	74.5-128			
Ethylbenzene	0.089	0.002	"	0.100		89.1	66.4-127			
m,p-Xylene	0.187	0.004	"	0.200		93.3	76.6-124			
o-Xylene	0.088	0.002	"	0.100		88.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		86.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1902 - EPA 5030 (soil)**

Matrix Spike (B9B1902-MS1)		Source: Y902228-01			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Benzene	0.098	0.002	mg/kg	0.100	ND	98.1	71.8-126			
Toluene	0.092	0.002	"	0.100	ND	91.7	65.1-130			
Ethylbenzene	0.082	0.002	"	0.100	ND	81.7	62.2-130			
m,p-Xylene	0.170	0.004	"	0.200	ND	84.8	46.5-137			
o-Xylene	0.082	0.002	"	0.100	ND	82.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1902 - EPA 5030 (soil)**

Matrix Spike (B9B1902-MS2)		Source: Y902228-08			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Benzene	0.112	0.002	mg/kg	0.100	ND	112	71.8-126			
Toluene	0.110	0.002	"	0.100	ND	110	65.1-130			
Ethylbenzene	0.099	0.002	"	0.100	ND	99.0	62.2-130			
m,p-Xylene	0.208	0.004	"	0.200	ND	104	46.5-137			
o-Xylene	0.098	0.002	"	0.100	ND	98.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1902 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1902-MSD1)		Source: Y902228-01			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Benzene	0.096	0.002	mg/kg	0.100	ND	95.6	71.8-126	2.56	11.3	
Toluene	0.088	0.002	"	0.100	ND	88.1	65.1-130	3.96	15.4	
Ethylbenzene	0.079	0.002	"	0.100	ND	79.4	62.2-130	2.88	19.6	
m,p-Xylene	0.165	0.004	"	0.200	ND	82.4	46.5-137	2.80	19.2	
o-Xylene	0.079	0.002	"	0.100	ND	79.2	54.2-134	3.47	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B1902 - EPA 5030 (soil)**

Matrix Spike Dup (B9B1902-MSD2)		Source: Y902228-08			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Benzene	0.104	0.002	mg/kg	0.100	ND	104	71.8-126	7.71	11.3	
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130	8.84	15.4	
Ethylbenzene	0.093	0.002	"	0.100	ND	93.1	62.2-130	6.14	19.6	
m,p-Xylene	0.195	0.004	"	0.200	ND	97.5	46.5-137	6.30	19.2	
o-Xylene	0.094	0.002	"	0.100	ND	94.2	54.2-134	4.42	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B1903 - EPA 3550B**

**Blank (B9B1903-BLK1)**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.4	59-131			

**Blank (B9B1903-BLK2)**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		75.9	59-131			

**LCS (B9B1903-BS1)**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Diesel (C10-C28)	982	50.0	mg/kg	1000		98.2	64-121			
Residual Range Organics (C28-C40)	939	200	"	1000		93.9	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.3	59-131			

**LCS (B9B1903-BS2)**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000		104	64-121			
Residual Range Organics (C28-C40)	1000	200	"	1000		100	58-124			
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			

**Matrix Spike (B9B1903-MS1)**

**Source: Y902228-01**

Prepared: 02/19/2019 Analyzed: 02/19/2019

Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	53-125			
Residual Range Organics (C28-C40)	987	200	"	1000	15.6	97.1	47-133			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B1903 - EPA 3550B</b>										
<b>Matrix Spike (B9B1903-MS1)</b>		<b>Source: Y902228-01</b>			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Surrogate: o-Terphenyl	50		mg/kg	50.0		100	59-131			
<b>Matrix Spike (B9B1903-MS2)</b>		<b>Source: Y902228-08</b>			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Diesel (C10-C28)	922	50.0	mg/kg	1000	ND	92.2	53-125			
Residual Range Organics (C28-C40)	884	200	"	1000	17.6	86.6	47-133			
Surrogate: o-Terphenyl	43		"	50.0		86.4	59-131			
<b>Matrix Spike Dup (B9B1903-MSD1)</b>		<b>Source: Y902228-01</b>			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Diesel (C10-C28)	976	50.0	mg/kg	1000	ND	97.6	53-125	4.97	20	
Residual Range Organics (C28-C40)	930	200	"	1000	15.6	91.4	47-133	6.04	20	
Surrogate: o-Terphenyl	47		"	50.0		94.8	59-131			
<b>Matrix Spike Dup (B9B1903-MSD2)</b>		<b>Source: Y902228-08</b>			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	53-125	8.50	20	
Residual Range Organics (C28-C40)	992	200	"	1000	17.6	97.4	47-133	11.7	20	
Surrogate: o-Terphenyl	47		"	50.0		94.3	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

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### 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



February 22, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 21, 2019. This project is associated with Origins project number Y902288-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N07@13'	Y902288-01	Soil	February 21, 2019 13:32	02/21/2019 17:00
E07@13'	Y902288-02	Soil	February 21, 2019 13:49	02/21/2019 17:00
B08@15'	Y902288-03	Soil	February 21, 2019 14:07	02/21/2019 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

page 1 of 1



4902288

**ORIGINS**  
LABORATORY, INC

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: T.G. Cornez@OriginsLab.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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other		
N07013	2/21/19	1:32	1	X					X		X	TPH-DRO 5 BTX 5 RO-DRO	1
E07013		1:49	1	X					X		X		2
B07015		2:07	1	X					X		X		3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: 	Date: 2/21/19	Time: 1700							Received By: 	Date: 2/21/19	Time: 1700	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished By:	Date:	Time:							Received By:	Date:	Time:		

Date Results Needed

4-5

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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902286

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/21/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.5 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

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

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

Reviewed by (Project Manager) [Signature]

2/21/19  
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N07@13'

2/21/2019 1:32:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902288-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2102	JTD	02/21/2019	02/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	0.349	0.200	mg/kg	1	B9B2101	KDK	02/21/2019	02/21/2019	
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E07@13'

2/21/2019 1:49:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902288-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	159	25.0	mg/kg	1	B9B2102	JTD	02/21/2019	02/21/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 78.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1.07	0.200	mg/kg	1	B9B2101	KDK	02/21/2019	02/21/2019	
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "  
Surrogate: Toluene-d8 96.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 114 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B08@15'**

**2/21/2019 2:07:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902288-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2102	JTD	02/21/2019	02/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	5.41	0.200	mg/kg	1	B9B2101	KDK	02/21/2019	02/21/2019	
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "  
Surrogate: Toluene-d8 98.5 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 107 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2101 - EPA 5030 (soil)</b>										
<b>Blank (B9B2101-BLK1)</b>					Prepared: 02/21/2019 Analyzed: 02/21/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.6	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2101 - EPA 5030 (soil)</b>										
<b>LCS (B9B2101-BS1)</b>					Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.089	0.002	mg/kg	0.100		88.7	77.1-124			
Toluene	0.087	0.002	"	0.100		86.6	74.5-128			
Ethylbenzene	0.080	0.002	"	0.100		80.5	66.4-127			
m,p-Xylene	0.198	0.004	"	0.200		98.8	76.6-124			
o-Xylene	0.089	0.002	"	0.100		89.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2101 - EPA 5030 (soil)**

Matrix Spike (B9B2101-MS1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.100	0.002	"	0.100	ND	99.8	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	93.2	62.2-130			
m,p-Xylene	0.228	0.004	"	0.200	ND	114	46.5-137			
o-Xylene	0.103	0.002	"	0.100	ND	103	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2101 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2101-MSD1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.4	71.8-126	11.3	11.3	
Toluene	0.090	0.002	"	0.100	ND	89.5	65.1-130	10.9	15.4	
Ethylbenzene	0.081	0.002	"	0.100	ND	81.5	62.2-130	13.4	19.6	
m,p-Xylene	0.200	0.004	"	0.200	ND	99.9	46.5-137	13.4	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	90.4	54.2-134	12.9	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2102 - EPA 3580**

**Blank (B9B2102-BLK1)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			

**Blank (B9B2102-BLK2)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	40		"	50.0		80.7	59-131			

**LCS (B9B2102-BS1)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	962	50.0	mg/kg	1000		96.2	64-121			
Residual Range Organics (C28-C40)	922	200	"	1000		92.2	58-124			
Surrogate: o-Terphenyl	47		"	50.0		94.8	59-131			

**LCS (B9B2102-BS2)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	964	50.0	mg/kg	1000		96.4	64-121			
Residual Range Organics (C28-C40)	957	200	"	1000		95.7	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.3	59-131			

**Matrix Spike (B9B2102-MS1)**

**Source: Y902261-02**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	910	50.0	mg/kg	1000	ND	91.0	53-125			
Residual Range Organics (C28-C40)	898	200	"	1000	108	79.0	47-133			

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 - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B2102 - EPA 3580</b>										
<b>Matrix Spike (B9B2102-MS1)</b>		<b>Source: Y902261-02</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Surrogate: o-Terphenyl	44		mg/kg	50.0		87.8	59-131			
<b>Matrix Spike (B9B2102-MS2)</b>		<b>Source: Y902291-04</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	973	50.0	mg/kg	1000	ND	97.3	53-125			
Residual Range Organics (C28-C40)	927	200	"	1000	ND	92.7	47-133			
Surrogate: o-Terphenyl	47		"	50.0		93.6	59-131			
<b>Matrix Spike Dup (B9B2102-MSD1)</b>		<b>Source: Y902261-02</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	941	50.0	mg/kg	1000	ND	94.1	53-125	3.32	20	
Residual Range Organics (C28-C40)	939	200	"	1000	108	83.1	47-133	5.05	20	
Surrogate: o-Terphenyl	45		"	50.0		89.3	59-131			
<b>Matrix Spike Dup (B9B2102-MSD2)</b>		<b>Source: Y902291-04</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	988	50.0	mg/kg	1000	ND	98.8	53-125	1.52	20	
Residual Range Organics (C28-C40)	932	200	"	1000	ND	93.2	47-133	0.552	20	
Surrogate: o-Terphenyl	47		"	50.0		94.2	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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



February 22, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 21, 2019. This project is associated with Origins project number Y902289-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N08@9'	Y902289-01	Soil	February 21, 2019 13:35	02/21/2019 17:00
E08@9'	Y902289-02	Soil	February 21, 2019 13:53	02/21/2019 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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

Y902289

**ORIGINS**  
LABORATORY, INC

page 1 of 1

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: rcornez@tasman-geo.com

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Alt. Summary		
N08091	2/21/19	1:35	1	X				X			TRH DRG	1
F08091	2/21/19	1:53	1	X				X			TRH DRG	2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Chris A	2/21/19	1:00	[Signature]	2/21/19	1:00	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Date Results Needed

4.5

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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902289

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/21/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.5 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) / (pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 2/21/19

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 - Tuttle L 17-6

N08@9'

2/21/2019 1:35:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902289-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2102	JTD	02/21/2019	02/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 75.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2101	KDK	02/21/2019	02/21/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "  
Surrogate: Toluene-d8 98.9 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

E08@9'

2/21/2019 1:53:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902289-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2102	JTD	02/21/2019	02/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 80.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2101	KDK	02/21/2019	02/21/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 107 % 70-130 " " "  
Surrogate: Toluene-d8 99.3 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.5 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2101 - EPA 5030 (soil)</b>										
<b>Blank (B9B2101-BLK1)</b>					Prepared: 02/21/2019 Analyzed: 02/21/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.6	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2101 - EPA 5030 (soil)</b>										
<b>LCS (B9B2101-BS1)</b>					Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.089	0.002	mg/kg	0.100		88.7	77.1-124			
Toluene	0.087	0.002	"	0.100		86.6	74.5-128			
Ethylbenzene	0.080	0.002	"	0.100		80.5	66.4-127			
m,p-Xylene	0.198	0.004	"	0.200		98.8	76.6-124			
o-Xylene	0.089	0.002	"	0.100		89.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2101 - EPA 5030 (soil)**

Matrix Spike (B9B2101-MS1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.100	0.002	"	0.100	ND	99.8	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	93.2	62.2-130			
m,p-Xylene	0.228	0.004	"	0.200	ND	114	46.5-137			
o-Xylene	0.103	0.002	"	0.100	ND	103	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2101 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2101-MSD1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.4	71.8-126	11.3	11.3	
Toluene	0.090	0.002	"	0.100	ND	89.5	65.1-130	10.9	15.4	
Ethylbenzene	0.081	0.002	"	0.100	ND	81.5	62.2-130	13.4	19.6	
m,p-Xylene	0.200	0.004	"	0.200	ND	99.9	46.5-137	13.4	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	90.4	54.2-134	12.9	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2102 - EPA 3580**

**Blank (B9B2102-BLK1)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			

**Blank (B9B2102-BLK2)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	40		"	50.0		80.7	59-131			

**LCS (B9B2102-BS1)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	962	50.0	mg/kg	1000		96.2	64-121			
Residual Range Organics (C28-C40)	922	200	"	1000		92.2	58-124			
Surrogate: o-Terphenyl	47		"	50.0		94.8	59-131			

**LCS (B9B2102-BS2)**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	964	50.0	mg/kg	1000		96.4	64-121			
Residual Range Organics (C28-C40)	957	200	"	1000		95.7	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.3	59-131			

**Matrix Spike (B9B2102-MS1)**

**Source: Y902261-02**

Prepared: 02/21/2019 Analyzed: 02/21/2019

Diesel (C10-C28)	910	50.0	mg/kg	1000	ND	91.0	53-125			
Residual Range Organics (C28-C40)	898	200	"	1000	108	79.0	47-133			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B2102 - EPA 3580</b>										
<b>Matrix Spike (B9B2102-MS1)</b>		<b>Source: Y902261-02</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Surrogate: o-Terphenyl	44		mg/kg	50.0		87.8	59-131			
<b>Matrix Spike (B9B2102-MS2)</b>		<b>Source: Y902291-04</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	973	50.0	mg/kg	1000	ND	97.3	53-125			
Residual Range Organics (C28-C40)	927	200	"	1000	ND	92.7	47-133			
Surrogate: o-Terphenyl	47		"	50.0		93.6	59-131			
<b>Matrix Spike Dup (B9B2102-MSD1)</b>		<b>Source: Y902261-02</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	941	50.0	mg/kg	1000	ND	94.1	53-125	3.32	20	
Residual Range Organics (C28-C40)	939	200	"	1000	108	83.1	47-133	5.05	20	
Surrogate: o-Terphenyl	45		"	50.0		89.3	59-131			
<b>Matrix Spike Dup (B9B2102-MSD2)</b>		<b>Source: Y902291-04</b>			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Diesel (C10-C28)	988	50.0	mg/kg	1000	ND	98.8	53-125	1.52	20	
Residual Range Organics (C28-C40)	932	200	"	1000	ND	93.2	47-133	0.552	20	
Surrogate: o-Terphenyl	47		"	50.0		94.2	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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





February 25, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 22, 2019. This project is associated with Origins project number Y902319-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01@9'	Y902319-01	Soil	February 22, 2019 11:20	02/22/2019 16:46
E10@9'	Y902319-02	Soil	February 22, 2019 11:01	02/22/2019 16:46

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: 89156407  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

page 1 of 1

9902319

# ORIGINS

LABORATORY, INC

Client: APC/Tasman Geosciences  
Address: 6899 Pecos Street, Denver, CO  
Telephone Number: 970-927-0393  
Email Address: RCornez@tasman-geo.com

Project Manager: Robert Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Zander Hamilton - CHSA

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ. #			Other
S10091	2/22/19	11:20	1	X					X			GR9000	1
E10091	2/22/19	11:01	1	X					X			GR9000	2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	2/22/19	11:46	<i>[Signature]</i>	2-22-19	11:46	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

24

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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 7902319

Client: Tasman

Client Project ID: KMG-Tuttle

Checklist Completed by: Don Lu

Shipped Via: Re-up

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

Date/time completed: 2-22-19

Airbill #: \_\_\_\_\_

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

(Describe)

Cooler Number/Temperature: 1 / 2.4 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C

Thermometer ID: 6603

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

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

Reviewed by (Project Manager) \_\_\_\_\_

Date/Time Reviewed 2-22-19

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: 89156407  
Project: KMG - Tuttle L 17-6

S01@9'

2/22/2019 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902319-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2202	JTD	02/22/2019	02/22/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 88.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2201	KDK	02/22/2019	02/22/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 110 % 70-130 " " "  
Surrogate: Toluene-d8 101 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

E10@9'

2/22/2019 11:01:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902319-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2202	JTD	02/22/2019	02/22/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 80.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2201	KDK	02/22/2019	02/22/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2201 - EPA 5030 (soil)</b>										
<b>Blank (B9B2201-BLK1)</b>					Prepared: 02/22/2019 Analyzed: 02/22/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2201 - EPA 5030 (soil)**

**LCS (B9B2201-BS1)**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Benzene	0.091	0.002	mg/kg	0.100		91.0	77.1-124			
Toluene	0.091	0.002	"	0.100		90.8	74.5-128			
Ethylbenzene	0.082	0.002	"	0.100		82.0	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2201 - EPA 5030 (soil)**

Matrix Spike (B9B2201-MS1)		Source: Y902302-02			Prepared: 02/22/2019 Analyzed: 02/22/2019					
Benzene	0.085	0.002	mg/kg	0.100	ND	85.3	71.8-126			
Toluene	0.086	0.002	"	0.100	ND	85.7	65.1-130			
Ethylbenzene	0.077	0.002	"	0.100	ND	77.2	62.2-130			
m,p-Xylene	0.191	0.004	"	0.200	ND	95.7	46.5-137			
o-Xylene	0.086	0.002	"	0.100	ND	86.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2201 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2201-MSD1)		Source: Y902302-02			Prepared: 02/22/2019 Analyzed: 02/22/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	99.3	71.8-126	15.1	11.3	QR-02
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	17.4	15.4	QR-02
Ethylbenzene	0.095	0.002	"	0.100	ND	95.0	62.2-130	20.7	19.6	QR-02
m,p-Xylene	0.234	0.004	"	0.200	ND	117	46.5-137	20.2	19.2	QR-02
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134	20.9	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2202 - EPA 3580**

**Blank (B9B2202-BLK1)**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	40		"	50.0		79.0	59-131			

**LCS (B9B2202-BS1)**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	970	200	"	1000		97.0	58-124			
Surrogate: o-Terphenyl	50		"	50.0		101	59-131			

**Matrix Spike (B9B2202-MS1)**

**Source: Y902302-02**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	53-125			
Residual Range Organics (C28-C40)	866	200	"	1000	ND	86.6	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.6	59-131			

**Matrix Spike Dup (B9B2202-MSD1)**

**Source: Y902302-02**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	914	50.0	mg/kg	1000	ND	91.4	53-125	1.90	20	
Residual Range Organics (C28-C40)	898	200	"	1000	ND	89.8	47-133	3.65	20	
Surrogate: o-Terphenyl	44		"	50.0		87.3	59-131			

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: 89156407

Project: KMG - Tuttle L 17-6

### 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.*

Jen Pellegrini For Noelle Doyle Mathis, President



February 25, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 22, 2019. This project is associated with Origins project number Y902320-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B09@15'	Y902320-01	Soil	February 22, 2019 11:12	02/22/2019 16:46
S02@13'	Y902320-02	Soil	February 22, 2019 11:25	02/22/2019 16:46
E09@13'	Y902320-03	Soil	February 22, 2019 11:05	02/22/2019 16:46

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.*



Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

page  of

4902320

Project Manager: Robert Comez

Project Name: T.H.L. L 17-6

Project Number: 09156407

Samples Collected By: Zander Hamilton  
CHISA

Client: APC/ Tasman Geosciences

Address: 6899 Pecos Street, Denver, CO

Telephone Number: 970-927-0393

Email Address: R.Cornuez@tasman-geo.com

[illegible]

Date Results Needed

Jeff Pellgrini

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 7902320

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: De Lu

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

Date/time completed: 2-22-19

Airbill #: N/A

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

Cooler Number/Temperature: 1 2.4 °C 1 °C 1 °C 1 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

DL  
3/22-19  
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: 89156407  
Project: KMG - Tuttle L 17-6

B09@15'

2/22/2019 11:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902320-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2202	JTD	02/22/2019	02/22/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 69.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B2201	KDK	02/22/2019	02/22/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.4 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

S02@13'

2/22/2019 11:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902320-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2202	JTD	02/22/2019	02/22/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 86.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2201	KDK	02/22/2019	02/22/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 117 % 70-130 " " "  
Surrogate: Toluene-d8 99.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

E09@13'

2/22/2019 11:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902320-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2202	JTD	02/22/2019	02/22/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 72.9 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2201	KDK	02/22/2019	02/22/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 116 % 70-130 " " "  
Surrogate: Toluene-d8 99.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.6 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2201 - EPA 5030 (soil)</b>										
<b>Blank (B9B2201-BLK1)</b>					Prepared: 02/22/2019 Analyzed: 02/22/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2201 - EPA 5030 (soil)</b>										
<b>LCS (B9B2201-BS1)</b>					Prepared: 02/22/2019 Analyzed: 02/22/2019					
Benzene	0.091	0.002	mg/kg	0.100		91.0	77.1-124			
Toluene	0.091	0.002	"	0.100		90.8	74.5-128			
Ethylbenzene	0.082	0.002	"	0.100		82.0	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2201 - EPA 5030 (soil)**

Matrix Spike (B9B2201-MS1)		Source: Y902302-02			Prepared: 02/22/2019 Analyzed: 02/22/2019					
Benzene	0.085	0.002	mg/kg	0.100	ND	85.3	71.8-126			
Toluene	0.086	0.002	"	0.100	ND	85.7	65.1-130			
Ethylbenzene	0.077	0.002	"	0.100	ND	77.2	62.2-130			
m,p-Xylene	0.191	0.004	"	0.200	ND	95.7	46.5-137			
o-Xylene	0.086	0.002	"	0.100	ND	86.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2201 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2201-MSD1)		Source: Y902302-02			Prepared: 02/22/2019 Analyzed: 02/22/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	99.3	71.8-126	15.1	11.3	QR-02
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	17.4	15.4	QR-02
Ethylbenzene	0.095	0.002	"	0.100	ND	95.0	62.2-130	20.7	19.6	QR-02
m,p-Xylene	0.234	0.004	"	0.200	ND	117	46.5-137	20.2	19.2	QR-02
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134	20.9	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2202 - EPA 3580**

**Blank (B9B2202-BLK1)**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	40		"	50.0		79.0	59-131			

**LCS (B9B2202-BS1)**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	970	200	"	1000		97.0	58-124			
Surrogate: o-Terphenyl	50		"	50.0		101	59-131			

**Matrix Spike (B9B2202-MS1)**

**Source: Y902302-02**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	53-125			
Residual Range Organics (C28-C40)	866	200	"	1000	ND	86.6	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.6	59-131			

**Matrix Spike Dup (B9B2202-MSD1)**

**Source: Y902302-02**

Prepared: 02/22/2019 Analyzed: 02/22/2019

Diesel (C10-C28)	914	50.0	mg/kg	1000	ND	91.4	53-125	1.90	20	
Residual Range Organics (C28-C40)	898	200	"	1000	ND	89.8	47-133	3.65	20	
Surrogate: o-Terphenyl	44		"	50.0		87.3	59-131			

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: 89156407

Project: KMG - Tuttle L 17-6

### 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.*



February 26, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 25, 2019. This project is associated with Origins project number Y902333-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S03@13'	Y902333-01	Soil	February 25, 2019 11:29	02/25/2019 16:50
B10@15'	Y902333-02	Soil	February 25, 2019 10:19	02/25/2019 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.*

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

1902333

page 1 of 1

**ORIGINS**  
LABORATORY, INC

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: rcornez@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summ #	Other			
S03@13'	2/25/19	11:29	1	X					X				X	1
B10@15'	11	10:19	1	X					X				X	2
														3
														4
														5
														6
														7
														8
														9
														10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:	
						Same Day	Standard
Chris A	2/25/19	1650	Chris A	2/25/19	1650	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

Date Results Needed

17

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902333

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

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

Date/time completed: 2/25/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1.7 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

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

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

Reviewed by (Project Manager) [Signature]

2/25/19  
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

S03@13'

2/25/2019 11:29:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902333-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2502	JTD	02/25/2019	02/25/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	8.79	5.00	mg/kg	25	B9B2501	JTD	02/25/2019	02/25/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 95.6 % 70-130 " " "

Surrogate: Toluene-d8 102 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

B10@15'

2/25/2019 10:19:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902333-02 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2502	JTD	02/25/2019	02/25/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 74.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B2501	KDK	02/25/2019	02/26/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 123 % 70-130 " " "  
Surrogate: Toluene-d8 98.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 95.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2501 - EPA 5030 (soil)</b>										
<b>Blank (B9B2501-BLK1)</b>					Prepared: 02/25/2019 Analyzed: 02/25/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2501 - EPA 5030 (soil)**

**LCS (B9B2501-BS1)**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Benzene	0.098	0.002	mg/kg	0.100		97.5	77.1-124			
Toluene	0.100	0.002	"	0.100		99.6	74.5-128			
Ethylbenzene	0.088	0.002	"	0.100		88.0	66.4-127			
m,p-Xylene	0.231	0.004	"	0.200		116	76.6-124			
o-Xylene	0.102	0.002	"	0.100		102	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2501 - EPA 5030 (soil)**

Matrix Spike (B9B2501-MS1)		Source: Y902310-06			Prepared: 02/25/2019 Analyzed: 02/25/2019					
Benzene	2.03	0.050	mg/kg	2.50	ND	81.1	71.8-126			
Toluene	2.04	0.050	"	2.50	ND	81.5	65.1-130			
Ethylbenzene	1.86	0.050	"	2.50	ND	74.6	62.2-130			
m,p-Xylene	4.71	0.100	"	5.00	ND	94.2	46.5-137			
o-Xylene	2.07	0.050	"	2.50	ND	82.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2501 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2501-MSD1)		Source: Y902310-06			Prepared: 02/25/2019 Analyzed: 02/25/2019					
Benzene	2.01	0.050	mg/kg	2.50	ND	80.4	71.8-126	0.966	11.3	
Toluene	2.02	0.050	"	2.50	ND	80.7	65.1-130	0.912	15.4	
Ethylbenzene	1.86	0.050	"	2.50	ND	74.6	62.2-130	0.00	19.6	
m,p-Xylene	4.68	0.100	"	5.00	ND	93.6	46.5-137	0.596	19.2	
o-Xylene	2.07	0.050	"	2.50	ND	82.9	54.2-134	0.121	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2502 - EPA 3580**

**Blank (B9B2502-BLK1)**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	59		"	50.0		119	59-131			

**LCS (B9B2502-BS1)**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	968	50.0	mg/kg	1000		96.8	64-121			
Residual Range Organics (C28-C40)	910	200	"	1000		91.0	58-124			
Surrogate: o-Terphenyl	47		"	50.0		94.7	59-131			

**Matrix Spike (B9B2502-MS1)**

**Source: Y902310-06**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000	142	89.7	53-125			
Residual Range Organics (C28-C40)	783	200	"	1000	ND	78.3	47-133			
Surrogate: o-Terphenyl	47		"	50.0		93.4	59-131			

**Matrix Spike Dup (B9B2502-MSD1)**

**Source: Y902310-06**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000	142	89.6	53-125	0.0772	20	
Residual Range Organics (C28-C40)	779	200	"	1000	ND	77.9	47-133	0.548	20	
Surrogate: o-Terphenyl	50		"	50.0		99.9	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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



March 04, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 25, 2019. This project is associated with Origins project number Y902334-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S04@9'	Y902334-01	Soil	February 25, 2019 11:31	02/25/2019 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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

[illegible]

Origins Laboratory, Inc.

Jeff Pellipini

*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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902334

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/25/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1.7 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

2/25/19  
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: 89156407  
Project: KMG - Tuttle L 17-6

S04@9'

2/25/2019 11:31:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902334-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2502	JTD	02/25/2019	02/25/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 74.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2501	JTD	02/25/2019	02/25/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "  
Surrogate: Toluene-d8 99.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2501 - EPA 5030 (soil)</b>										
<b>Blank (B9B2501-BLK1)</b>					Prepared: 02/25/2019 Analyzed: 02/25/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2501 - EPA 5030 (soil)</b>										
<b>LCS (B9B2501-BS1)</b>					Prepared: 02/25/2019 Analyzed: 02/25/2019					
Benzene	0.098	0.002	mg/kg	0.100		97.5	77.1-124			
Toluene	0.100	0.002	"	0.100		99.6	74.5-128			
Ethylbenzene	0.088	0.002	"	0.100		88.0	66.4-127			
m,p-Xylene	0.231	0.004	"	0.200		116	76.6-124			
o-Xylene	0.102	0.002	"	0.100		102	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2501 - EPA 5030 (soil)**

Matrix Spike (B9B2501-MS1)		Source: Y902310-06			Prepared: 02/25/2019 Analyzed: 02/25/2019					
Benzene	2.03	0.050	mg/kg	2.50	ND	81.1	71.8-126			
Toluene	2.04	0.050	"	2.50	ND	81.5	65.1-130			
Ethylbenzene	1.86	0.050	"	2.50	ND	74.6	62.2-130			
m,p-Xylene	4.71	0.100	"	5.00	ND	94.2	46.5-137			
o-Xylene	2.07	0.050	"	2.50	ND	82.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2501 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2501-MSD1)		Source: Y902310-06			Prepared: 02/25/2019 Analyzed: 02/25/2019					
Benzene	2.01	0.050	mg/kg	2.50	ND	80.4	71.8-126	0.966	11.3	
Toluene	2.02	0.050	"	2.50	ND	80.7	65.1-130	0.912	15.4	
Ethylbenzene	1.86	0.050	"	2.50	ND	74.6	62.2-130	0.00	19.6	
m,p-Xylene	4.68	0.100	"	5.00	ND	93.6	46.5-137	0.596	19.2	
o-Xylene	2.07	0.050	"	2.50	ND	82.9	54.2-134	0.121	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2502 - EPA 3580**

**Blank (B9B2502-BLK1)**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	59		"	50.0		119	59-131			

**LCS (B9B2502-BS1)**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	968	50.0	mg/kg	1000		96.8	64-121			
Residual Range Organics (C28-C40)	910	200	"	1000		91.0	58-124			
Surrogate: o-Terphenyl	47		"	50.0		94.7	59-131			

**Matrix Spike (B9B2502-MS1)**

**Source: Y902310-06**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000	142	89.7	53-125			
Residual Range Organics (C28-C40)	783	200	"	1000	ND	78.3	47-133			
Surrogate: o-Terphenyl	47		"	50.0		93.4	59-131			

**Matrix Spike Dup (B9B2502-MSD1)**

**Source: Y902310-06**

Prepared: 02/25/2019 Analyzed: 02/25/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000	142	89.6	53-125	0.0772	20	
Residual Range Organics (C28-C40)	779	200	"	1000	ND	77.9	47-133	0.548	20	
Surrogate: o-Terphenyl	50		"	50.0		99.9	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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



February 27, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 26, 2019. This project is associated with Origins project number Y902355-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B11@15'	Y902355-01	Soil	February 26, 2019 11:12	02/26/2019 16:50
S05@13'	Y902355-02	Soil	February 26, 2019 11:17	02/26/2019 16:50

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: 89156407  
Project: KMG - Tuttle L 17-6

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page 1 of 1

**ORIGINS**  
LABORATORY, INC

1902355

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: Cornez2@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
B1015'	2/26/19	11:12	1	X				X			GREX TPH, DRC GREX	1
S05013'	↓	11:17	1	X				X			X	2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Chris A	2/26/19	14:00	Bob Cornez	2/26/19	16:50	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

5.6 Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y90235

Client: Tasman  
Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

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

Date/time completed: 2/26/2019

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

Cooler Number/Temperature: 1 5.6 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

2/26/19  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

B11@15'

2/26/2019 11:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902355-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	32.9	25.0	mg/kg	1	B9B2603	JTD	02/26/2019	02/26/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 75.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	34.5	5.00	mg/kg	25	B9B2608	KDK	02/26/2019	02/26/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.8 % 70-130 " " "  
Surrogate: Toluene-d8 98.5 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

S05@13'

2/26/2019 11:17:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902355-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	54.3	25.0	mg/kg	1	B9B2603	JTD	02/26/2019	02/26/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	18.0	5.00	mg/kg	25	B9B2608	KDK	02/26/2019	02/26/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.4 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2608 - EPA 5030 (soil)</b>										
<b>Blank (B9B2608-BLK1)</b>					Prepared: 02/26/2019 Analyzed: 02/26/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2608 - EPA 5030 (soil)**

**LCS (B9B2608-BS1)**

Prepared: 02/26/2019 Analyzed: 02/26/2019

Benzene	0.100	0.002	mg/kg	0.100		100	77.1-124			
Toluene	0.095	0.002	"	0.100		95.0	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.202	0.004	"	0.200		101	76.6-124			
o-Xylene	0.108	0.002	"	0.100		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Bob Cornez  
Project Number: 89156407  
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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 B9B2608 - EPA 5030 (soil)**

Matrix Spike (B9B2608-MS1)		Source: Y902350-01			Prepared: 02/26/2019 Analyzed: 02/26/2019					
Benzene	0.088	0.002	mg/kg	0.100	ND	88.3	71.8-126			
Toluene	0.081	0.002	"	0.100	ND	81.3	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	87.8	62.2-130			
m,p-Xylene	0.176	0.004	"	0.200	ND	87.8	46.5-137			
o-Xylene	0.093	0.002	"	0.100	0.0003	93.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2608 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2608-MSD1)		Source: Y902350-01			Prepared: 02/26/2019 Analyzed: 02/26/2019					
Benzene	0.092	0.002	mg/kg	0.100	ND	92.0	71.8-126	4.06	11.3	
Toluene	0.086	0.002	"	0.100	ND	85.5	65.1-130	5.08	15.4	
Ethylbenzene	0.091	0.002	"	0.100	ND	90.8	62.2-130	3.31	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	90.8	46.5-137	3.32	19.2	
o-Xylene	0.097	0.002	"	0.100	0.0003	96.7	54.2-134	3.39	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9B2603 - EPA 3580

#### Blank (B9B2603-BLK1)

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	39		"	50.0		77.5	59-131			

#### LCS (B9B2603-BS1)

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	973	50.0	mg/kg	1000		97.3	64-121			
Residual Range Organics (C28-C40)	835	200	"	1000		83.5	58-124			
Surrogate: o-Terphenyl	46		"	50.0		92.1	59-131			

#### Matrix Spike (B9B2603-MS1)

Source: Y902336-01

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	938	50.0	mg/kg	1000	ND	93.8	53-125			
Residual Range Organics (C28-C40)	857	200	"	1000	9.59	84.7	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			

#### Matrix Spike Dup (B9B2603-MSD1)

Source: Y902336-01

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	894	50.0	mg/kg	1000	ND	89.4	53-125	4.82	20	
Residual Range Organics (C28-C40)	824	200	"	1000	9.59	81.5	47-133	3.92	20	
Surrogate: o-Terphenyl	40		"	50.0		79.0	59-131			

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: 89156407

Project: KMG - Tuttle L 17-6

### 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



February 27, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 26, 2019. This project is associated with Origins project number Y902356-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S06@9'	Y902356-01	Soil	February 26, 2019 11:21	02/26/2019 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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

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1902356

page 1 of 1

**ORIGINS**  
LABORATORY, INC

Client: Tasman (on APC's behalf)

Address: 6899 Pecos St

Telephone Number:

Email Address: jpell@tasman-geo.com

Project Manager: R. Cornez

Project Name: Tuttle L 17-6

Project Number: 89156407

Samples Collected By: Chris A

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #		
89156407	2/26	11:21	1	X				X			X	GRZ, GRZ, GRZ, GRZ
Relinquished By:	Date: 2/26/19	Time: 1400	Received By:	Date: 2/26/19	Time: 1650	Turnaround Time:						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Same Day: <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr		Standard <input type="checkbox"/>				

Date Results Needed: 5.6

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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y902356

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/26/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.6 °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 ≤ 8°C <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

2/26/19  
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: 89156407  
Project: KMG - Tuttle L 17-6

S06@9'

2/26/2019 11:21:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902356-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2603	JTD	02/26/2019	02/26/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 70.9 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2608	KDK	02/26/2019	02/26/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

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

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2608 - EPA 5030 (soil)</b>										
<b>Blank (B9B2608-BLK1)</b>					Prepared: 02/26/2019 Analyzed: 02/26/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2608 - EPA 5030 (soil)</b>										
<b>LCS (B9B2608-BS1)</b>					Prepared: 02/26/2019 Analyzed: 02/26/2019					
Benzene	0.100	0.002	mg/kg	0.100		100	77.1-124			
Toluene	0.095	0.002	"	0.100		95.0	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.202	0.004	"	0.200		101	76.6-124			
o-Xylene	0.108	0.002	"	0.100		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2608 - EPA 5030 (soil)**

Matrix Spike (B9B2608-MS1)		Source: Y902350-01			Prepared: 02/26/2019 Analyzed: 02/26/2019					
Benzene	0.088	0.002	mg/kg	0.100	ND	88.3	71.8-126			
Toluene	0.081	0.002	"	0.100	ND	81.3	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	87.8	62.2-130			
m,p-Xylene	0.176	0.004	"	0.200	ND	87.8	46.5-137			
o-Xylene	0.093	0.002	"	0.100	0.0003	93.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2608 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2608-MSD1)		Source: Y902350-01			Prepared: 02/26/2019 Analyzed: 02/26/2019					
Benzene	0.092	0.002	mg/kg	0.100	ND	92.0	71.8-126	4.06	11.3	
Toluene	0.086	0.002	"	0.100	ND	85.5	65.1-130	5.08	15.4	
Ethylbenzene	0.091	0.002	"	0.100	ND	90.8	62.2-130	3.31	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	90.8	46.5-137	3.32	19.2	
o-Xylene	0.097	0.002	"	0.100	0.0003	96.7	54.2-134	3.39	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2603 - EPA 3580**

**Blank (B9B2603-BLK1)**

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	39		"	50.0		77.5	59-131			

**LCS (B9B2603-BS1)**

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	973	50.0	mg/kg	1000		97.3	64-121			
Residual Range Organics (C28-C40)	835	200	"	1000		83.5	58-124			
Surrogate: o-Terphenyl	46		"	50.0		92.1	59-131			

**Matrix Spike (B9B2603-MS1)**

**Source: Y902336-01**

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	938	50.0	mg/kg	1000	ND	93.8	53-125			
Residual Range Organics (C28-C40)	857	200	"	1000	9.59	84.7	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			

**Matrix Spike Dup (B9B2603-MSD1)**

**Source: Y902336-01**

Prepared: 02/26/2019 Analyzed: 02/26/2019

Diesel (C10-C28)	894	50.0	mg/kg	1000	ND	89.4	53-125	4.82	20	
Residual Range Organics (C28-C40)	824	200	"	1000	9.59	81.5	47-133	3.92	20	
Surrogate: o-Terphenyl	40		"	50.0		79.0	59-131			

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: 89156407

Project: KMG - Tuttle L 17-6

### 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



March 04, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 27, 2019. This project is associated with Origins project number Y902371-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W01@13'	Y902371-01	Soil	February 27, 2019 12:35	02/27/2019 16:45
N11@13'	Y902371-02	Soil	February 27, 2019 13:11	02/27/2019 16:45

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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**ORIGINS**  
LABORATORY, INC

Client: ISMAAN GENESISES

Address: 6894 Pecos St  
Denver, CO 80221

Telephone Number: \_\_\_\_\_

Project Manager/Send Report To: Robert Lopez

Email Address: lopezr2@thismay-geo.com





Project Name/Number: Title L 17-6

Samples Collected By: Chris A

page 1 of 1

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Y902371

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative						Matrix			Analyte/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sampling Container #	Other			
W01 Q13'	02/27/19	12:55	1	X					X			GFTX TPH, DOB GRB, ORB	Sample ID changed per the email from Epicor 3/4/19. yo	
<del>W11 A27</del> Q13'	↓	13:11	1	X					X			X		
													5	
													6	
													7	
													8	
													9	
													10	
Reinquished By: 	Date: 02/27/19		Time: 1:40	Received By: 	Date: 02/12/19	Time: 16:45	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard							
Reinquished By: 	Date:		Time:	Received By: 	Date: 2/7/19	Time: 16:45								

Date Results Needed:

Comments:

Origins Laboratory, Inc.

Jeff Pellgrini

*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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 7902371

Client: Tasman

Client Project ID: KMG-Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 2/27/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 50 °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °C

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed 2/27/19

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: 89156407  
Project: KMG - Tuttle L 17-6

W01@13'

2/27/2019 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902371-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	94.5	25.0	mg/kg	1	B9B2703	KDK	02/27/2019	02/27/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 76.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	95.2	5.00	mg/kg	25	B9B2702	KDK	"	02/27/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.177	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 96.8 % 70-130 " " "  
Surrogate: Toluene-d8 96.4 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.7 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

N11@13'  
2/27/2019 1:11:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902371-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	44.9	25.0	mg/kg	1	B9B2703	KDK	02/27/2019	02/27/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 83.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	40.7	5.00	mg/kg	25	B9B2702	KDK	"	02/27/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.6 % 70-130 " " "  
Surrogate: Toluene-d8 98.6 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 96.3 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2702 - EPA 5030 (soil)</b>										
<b>Blank (B9B2702-BLK1)</b>					Prepared: 02/27/2019 Analyzed: 02/27/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2702 - EPA 5030 (soil)**

**LCS (B9B2702-BS1)**

Prepared: 02/27/2019 Analyzed: 02/27/2019

Benzene	0.104	0.002	mg/kg	0.100		104	77.1-124			
Toluene	0.099	0.002	"	0.100		99.0	74.5-128			
Ethylbenzene	0.106	0.002	"	0.100		106	66.4-127			
m,p-Xylene	0.211	0.004	"	0.200		106	76.6-124			
o-Xylene	0.110	0.002	"	0.100		110	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2702 - EPA 5030 (soil)**

Matrix Spike (B9B2702-MS1)		Source: Y902357-01			Prepared: 02/27/2019 Analyzed: 02/27/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.1	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	89.5	65.1-130			
Ethylbenzene	0.102	0.002	"	0.100	ND	102	62.2-130			
m,p-Xylene	0.211	0.004	"	0.200	0.007	102	46.5-137			
o-Xylene	0.109	0.002	"	0.100	0.0005	108	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		114	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9B2702 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2702-MSD1)		Source: Y902357-01			Prepared: 02/27/2019 Analyzed: 02/27/2019					
Benzene	0.113	0.002	mg/kg	0.100	ND	113	71.8-126	18.4	11.3	QR-02
Toluene	0.106	0.002	"	0.100	ND	106	65.1-130	16.8	15.4	QR-02
Ethylbenzene	0.112	0.002	"	0.100	ND	112	62.2-130	9.44	19.6	
m,p-Xylene	0.224	0.004	"	0.200	0.007	108	46.5-137	5.81	19.2	
o-Xylene	0.119	0.002	"	0.100	0.0005	119	54.2-134	9.15	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2703 - EPA 3580**

**Blank (B9B2703-BLK1)**

Prepared: 02/27/2019 Analyzed: 02/27/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	42		"	50.0		83.2	59-131			

**LCS (B9B2703-BS1)**

Prepared: 02/27/2019 Analyzed: 02/27/2019

Diesel (C10-C28)	948	50.0	mg/kg	1000		94.8	64-121			
Residual Range Organics (C28-C40)	903	200	"	1000		90.3	58-124			
Surrogate: o-Terphenyl	45		"	50.0		90.3	59-131			

**Matrix Spike (B9B2703-MS1)**

**Source: Y902357-01**

Prepared: 02/27/2019 Analyzed: 02/27/2019

Diesel (C10-C28)	1020	50.0	mg/kg	1000	14.7	101	53-125			
Residual Range Organics (C28-C40)	938	200	"	1000	7.29	93.1	47-133			
Surrogate: o-Terphenyl	50		"	50.0		100	59-131			

**Matrix Spike Dup (B9B2703-MSD1)**

**Source: Y902357-01**

Prepared: 02/27/2019 Analyzed: 02/27/2019

Diesel (C10-C28)	931	50.0	mg/kg	1000	14.7	91.6	53-125	9.61	20	
Residual Range Organics (C28-C40)	848	200	"	1000	7.29	84.1	47-133	10.2	20	
Surrogate: o-Terphenyl	43		"	50.0		85.2	59-131			

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: 89156407

Project: KMG - Tuttle L 17-6

## 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.*

Jen Pellegrini For Noelle Doyle Mathis, President



March 01, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 28, 2019. This project is associated with Origins project number Y902392-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S08@9'	Y902392-01	Soil	February 28, 2019 9:46	02/28/2019 16:50
W03@9'	Y902392-02	Soil	February 28, 2019 9:37	02/28/2019 16:50
W04@9'	Y902392-03	Soil	February 28, 2019 10:21	02/28/2019 16:50
N09@9'	Y902392-04	Soil	February 28, 2019 12:35	02/28/2019 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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

page 1 of 1

4902392

Client: TASMANI GEMS/EXCISES

Address: 6899 Pecos St  
Denver, CO 80221


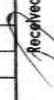
Telephone Number: \_\_\_\_\_

Project Manager/Send Report To: Robert Cortez

Email Address: SCORPZ@tasmin-gem.com

Project Name/Number: Juttle 617-6

Samples Collected By: Chris A

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis/Method		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other			
S08 @ 9'	2/28/19	9:46	1	X					X			X	7PH, GPO, DPO, GBTEX	1
W03 @ 9'	1	9:37	1	↓					↓			X	X	2
W04 @ 9'	↓	10:21	↓	↓					↓			X	X	3
N09 @ 9'	↓	12:35	↓	↓					↓			X	X	4
														5
														6
														7
														8
														9
														10
Relinquished By: 	Date: 2-28-19	Time: 1:00	Received By: 	Date: 2-28-19	Time: 1:50	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input type="checkbox"/>								
Relinquished By:	Date:	Time:	Received By:	Date:	Time:									

**Comments:**

Date Results Needed:

6/4

Jeff Pellgrini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4902392 Client: Tasman  
Client Project ID: KMG - Tuttle L 17-6  
Checklist Completed by: Dr. Lee Shipped Via: HD  
Date/time completed: 2-28-19 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: NA  
Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
Cooler Number/Temperature: 1 / 4.9 °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °C (Describe)  
Thermometer ID: 203

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>if yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 2-28-19

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 - Tuttle L 17-6

S08@9'

2/28/2019 9:46:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902392-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 80.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B2802	KDK	"	02/28/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.2 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W03@9'

2/28/2019 9:37:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902392-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 72.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2802	KDK	"	02/28/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "  
Surrogate: Toluene-d8 97.6 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.8 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W04@9'

2/28/2019 10:21:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902392-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 81.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2802	KDK	"	02/28/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "  
Surrogate: Toluene-d8 96.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.9 % 70-130 " " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N09@9'

2/28/2019 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902392-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 79.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9B2802	KDK	"	02/28/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "  
Surrogate: Toluene-d8 97.3 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.6 % 70-130 " " "

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2802 - EPA 5030 (soil)</b>										
<b>Blank (B9B2802-BLK1)</b>					Prepared: 02/28/2019 Analyzed: 02/28/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.0	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2802 - EPA 5030 (soil)</b>										
<b>Blank (B9B2802-BLK2)</b>					Prepared: 02/28/2019 Analyzed: 02/28/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

**LCS (B9B2802-BS1)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Benzene	0.103	0.002	mg/kg	0.100		103	77.1-124			
Toluene	0.098	0.002	"	0.100		98.0	74.5-128			
Ethylbenzene	0.104	0.002	"	0.100		104	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		103	76.6-124			
o-Xylene	0.109	0.002	"	0.100		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

**LCS (B9B2802-BS2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.218	0.004	"	0.200		109	76.6-124			
o-Xylene	0.115	0.002	"	0.100		115	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike (B9B2802-MS1)		Source: Y902367-01			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126			
Toluene	0.097	0.002	"	0.100	ND	96.7	65.1-130			
Ethylbenzene	0.106	0.002	"	0.100	ND	106	62.2-130			
m,p-Xylene	0.212	0.004	"	0.200	ND	106	46.5-137			
o-Xylene	0.114	0.002	"	0.100	ND	114	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike (B9B2802-MS2)		Source: Y902386-02			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.097	0.002	mg/kg	0.100	ND	96.9	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	89.3	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	93.3	62.2-130			
m,p-Xylene	0.188	0.004	"	0.200	ND	94.0	46.5-137			
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2802-MSD1)		Source: Y902367-01			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126	10.4	11.3	
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130	8.53	15.4	
Ethylbenzene	0.111	0.002	"	0.100	ND	111	62.2-130	4.66	19.6	
m,p-Xylene	0.221	0.004	"	0.200	ND	111	46.5-137	4.26	19.2	
o-Xylene	0.119	0.002	"	0.100	ND	119	54.2-134	4.23	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2802-MSD2)		Source: Y902386-02			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	98.6	71.8-126	1.74	11.3	
Toluene	0.092	0.002	"	0.100	ND	91.5	65.1-130	2.43	15.4	
Ethylbenzene	0.095	0.002	"	0.100	ND	95.1	62.2-130	1.87	19.6	
m,p-Xylene	0.191	0.004	"	0.200	ND	95.4	46.5-137	1.49	19.2	
o-Xylene	0.103	0.002	"	0.100	ND	103	54.2-134	1.53	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2803 - EPA 3580**

**Blank (B9B2803-BLK1)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.4	59-131			

**Blank (B9B2803-BLK2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.5	59-131			

**LCS (B9B2803-BS1)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	959	200	"	1000		95.9	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.5	59-131			

**LCS (B9B2803-BS2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	1060	50.0	mg/kg	1000		106	64-121			
Residual Range Organics (C28-C40)	1000	200	"	1000		100	58-124			
Surrogate: o-Terphenyl	54		"	50.0		109	59-131			

**Matrix Spike (B9B2803-MS1)**

**Source: Y902367-03**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	812	50.0	mg/kg	1000	ND	81.2	53-125			
Residual Range Organics (C28-C40)	1080	200	"	1000	50.2	103	47-133			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B2803 - EPA 3580</b>										
<b>Matrix Spike (B9B2803-MS1)</b>		<b>Source: Y902367-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Surrogate: o-Terphenyl	41		mg/kg	50.0		82.5	59-131			
<b>Matrix Spike (B9B2803-MS2)</b>		<b>Source: Y902392-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	973	50.0	mg/kg	1000	ND	97.3	53-125			
Residual Range Organics (C28-C40)	885	200	"	1000	ND	88.5	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.9	59-131			
<b>Matrix Spike Dup (B9B2803-MSD1)</b>		<b>Source: Y902367-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	989	50.0	mg/kg	1000	ND	98.9	53-125	19.7	20	
Residual Range Organics (C28-C40)	1030	200	"	1000	50.2	97.7	47-133	4.97	20	
Surrogate: o-Terphenyl	46		"	50.0		92.5	59-131			
<b>Matrix Spike Dup (B9B2803-MSD2)</b>		<b>Source: Y902392-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	53-125	7.73	20	
Residual Range Organics (C28-C40)	845	200	"	1000	ND	84.5	47-133	4.64	20	
Surrogate: o-Terphenyl	43		"	50.0		86.8	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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



March 04, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. February 28, 2019. This project is associated with Origins project number Y902393-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N10@13'	Y902393-01	Soil	February 28, 2019 13:01	02/28/2019 16:50
S07@13'	Y902393-02	Soil	February 28, 2019 9:41	02/28/2019 16:50
W02@13'	Y902393-03	Soil	February 28, 2019 9:33	02/28/2019 16:50
B12@15'	Y902393-04	Soil	February 28, 2019 9:30	02/28/2019 16:50
N12@13'	Y902393-05	Soil	February 28, 2019 12:32	02/28/2019 16:50
B13@15'	Y902393-06	Soil	February 28, 2019 12:30	02/28/2019 16:50

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com page 1 of 1

**ORIGINS** LABORATORY, INC

Client: TASMAN GEOSCIENCES Project Manager/Send Report To: Robert Cornez

Address: 6899 Pecos St Email Address: rcornez@tasman-geo.com

Denver, CO 80221 Project Name/Number: Tuttle L 17-6

Telephone Number: \_\_\_\_\_ Samples Collected By: Chris A

**9902393**

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/Method	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil			Air Summa #
N10 @ 13'	02/28/19	13:01	1	X				X		X GB TEX	1 PH, GAO	1
S07 @ 13'		09:41	1									2
W02 @ 13'		09:33	1									3
B12 @ 15'		04:20										4
N12 @ 13'		12:32										5
B13 @ 15'		12:30										6
												7
												8
												9
												10

Sample ID changed for the email from Eric on 3/14/19.

Relinquished By: [Signature] Date: 02/28/19 Time: 16:50

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: [Signature] Date: 2-28-19 Time: 16:50

Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

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

Date Results Needed:

4.9

Comments:

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 7902393

Client: Tasman

Client Project ID: under Tuttle L17-6

Checklist Completed by: D. Lee

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

Date/time completed: 2-28-19

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.9 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C 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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 2-28-19

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N10@13'

2/28/2019 1:01:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902393-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	124	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 83.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	188	5.00	mg/kg	25	B9B2802	KDK	"	03/01/2019	
Benzene	1.29	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.296	0.050	"	"	"	KDK	"	"	
Xylenes, total	3.77	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 87.3 % 70-130 " " "  
Surrogate: Toluene-d8 96.9 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.2 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

S07@13'

2/28/2019 9:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902393-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	02/28/2019	U

Surrogate: o-Terphenyl 59.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9B2802	KDK	"	02/28/2019	U
Benzene	0.224	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.498	"	250	"	KDK	"	02/28/2019	R-01, U
Xylenes, total	ND	0.498	"	"	"	KDK	"	"	R-01, U

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
Surrogate: Toluene-d8 99.4 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W02@13'  
2/28/2019 9:33:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y902393-03 (Soil)

### DRO/RRO by EPA8015C

Diesel (C10-C28)	81.2	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 79.6 % 59-131 " " "

### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	310	50.0	mg/kg	250	B9B2802	KDK	"	02/28/2019	
Benzene	1.20	0.050	"	25	"	KDK	"	03/01/2019	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.143	0.050	"	"	"	KDK	"	"	
Xylenes, total	4.08	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 94.4 % 70-130 " " "  
Surrogate: Toluene-d8 94.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 119 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B12@15'**

**2/28/2019 9:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902393-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 82.9 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	5.17	0.200	mg/kg	1	B9B2802	KDK	"	02/28/2019	
Benzene	0.174	0.002	"	"	"	KDK	"	"	
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	0.008	0.002	"	"	"	KDK	"	"	
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "

Surrogate: Toluene-d8 95.6 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N12@13'

2/28/2019 12:32:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y902393-05 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	153	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 86.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	139	5.00	mg/kg	25	B9B2802	KDK	"	02/28/2019	
Benzene	1.30	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.246	0.050	"	"	"	KDK	"	"	
Xylenes, total	2.69	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 97.3 % 70-130 " " "

Surrogate: Toluene-d8 97.5 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 112 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B13@15'**

**2/28/2019 12:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902393-06 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9B2803	KDK	02/28/2019	02/28/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 78.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	14.5	5.00	mg/kg	25	B9B2802	KDK	"	02/28/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 90.8 % 70-130 " " "  
Surrogate: Toluene-d8 99.9 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2802 - EPA 5030 (soil)</b>										
<b>Blank (B9B2802-BLK1)</b>					Prepared: 02/28/2019 Analyzed: 02/28/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2802 - EPA 5030 (soil)</b>										
<b>Blank (B9B2802-BLK2)</b>					Prepared: 02/28/2019 Analyzed: 02/28/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9B2802 - EPA 5030 (soil)</b>										
<b>LCS (B9B2802-BS1)</b>					Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.103	0.002	mg/kg	0.100		103	77.1-124			
Toluene	0.098	0.002	"	0.100		98.0	74.5-128			
Ethylbenzene	0.104	0.002	"	0.100		104	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		103	76.6-124			
o-Xylene	0.109	0.002	"	0.100		109	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

**LCS (B9B2802-BS2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.218	0.004	"	0.200		109	76.6-124			
o-Xylene	0.115	0.002	"	0.100		115	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike (B9B2802-MS1)		Source: Y902367-01			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126			
Toluene	0.097	0.002	"	0.100	ND	96.7	65.1-130			
Ethylbenzene	0.106	0.002	"	0.100	ND	106	62.2-130			
m,p-Xylene	0.212	0.004	"	0.200	ND	106	46.5-137			
o-Xylene	0.114	0.002	"	0.100	ND	114	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike (B9B2802-MS2)		Source: Y902386-02			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.097	0.002	mg/kg	0.100	ND	96.9	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	89.3	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	93.3	62.2-130			
m,p-Xylene	0.188	0.004	"	0.200	ND	94.0	46.5-137			
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2802-MSD1)		Source: Y902367-01			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126	10.4	11.3	
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130	8.53	15.4	
Ethylbenzene	0.111	0.002	"	0.100	ND	111	62.2-130	4.66	19.6	
m,p-Xylene	0.221	0.004	"	0.200	ND	111	46.5-137	4.26	19.2	
o-Xylene	0.119	0.002	"	0.100	ND	119	54.2-134	4.23	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9B2802 - EPA 5030 (soil)**

Matrix Spike Dup (B9B2802-MSD2)		Source: Y902386-02			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	98.6	71.8-126	1.74	11.3	
Toluene	0.092	0.002	"	0.100	ND	91.5	65.1-130	2.43	15.4	
Ethylbenzene	0.095	0.002	"	0.100	ND	95.1	62.2-130	1.87	19.6	
m,p-Xylene	0.191	0.004	"	0.200	ND	95.4	46.5-137	1.49	19.2	
o-Xylene	0.103	0.002	"	0.100	ND	103	54.2-134	1.53	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B2803 - EPA 3580**

**Blank (B9B2803-BLK1)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.4	59-131			

**Blank (B9B2803-BLK2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.5	59-131			

**LCS (B9B2803-BS1)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	959	200	"	1000		95.9	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.5	59-131			

**LCS (B9B2803-BS2)**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	1060	50.0	mg/kg	1000		106	64-121			
Residual Range Organics (C28-C40)	1000	200	"	1000		100	58-124			
Surrogate: o-Terphenyl	54		"	50.0		109	59-131			

**Matrix Spike (B9B2803-MS1)**

**Source: Y902367-03**

Prepared: 02/28/2019 Analyzed: 02/28/2019

Diesel (C10-C28)	812	50.0	mg/kg	1000	ND	81.2	53-125			
Residual Range Organics (C28-C40)	1080	200	"	1000	50.2	103	47-133			

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 - Tuttle L 17-6

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9B2803 - EPA 3580</b>										
<b>Matrix Spike (B9B2803-MS1)</b>		<b>Source: Y902367-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Surrogate: o-Terphenyl	41		mg/kg	50.0		82.5	59-131			
<b>Matrix Spike (B9B2803-MS2)</b>		<b>Source: Y902392-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	973	50.0	mg/kg	1000	ND	97.3	53-125			
Residual Range Organics (C28-C40)	885	200	"	1000	ND	88.5	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.9	59-131			
<b>Matrix Spike Dup (B9B2803-MSD1)</b>		<b>Source: Y902367-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	989	50.0	mg/kg	1000	ND	98.9	53-125	19.7	20	
Residual Range Organics (C28-C40)	1030	200	"	1000	50.2	97.7	47-133	4.97	20	
Surrogate: o-Terphenyl	46		"	50.0		92.5	59-131			
<b>Matrix Spike Dup (B9B2803-MSD2)</b>		<b>Source: Y902392-03</b>			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	53-125	7.73	20	
Residual Range Organics (C28-C40)	845	200	"	1000	ND	84.5	47-133	4.64	20	
Surrogate: o-Terphenyl	43		"	50.0		86.8	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### Notes and Definitions

U Sample is Non-Detect.

R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.

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.*

March 04, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 01, 2019. This project is associated with Origins project number Y903025-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B14@15'	Y903025-01	Soil	March 1, 2019 8:50	03/01/2019 16:50
B15@15'	Y903025-02	Soil	March 1, 2019 11:24	03/01/2019 16:50
S09@13'	Y903025-03	Soil	March 1, 2019 8:55	03/01/2019 16:50
W07@13'	Y903025-04	Soil	March 1, 2019 10:00	03/01/2019 16:50
W08@13'	Y903025-05	Soil	March 1, 2019 11:21	03/01/2019 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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**

LABORATORY, INC

www.originslaboratory.com

903025

page 1 of 1

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

Client: Tasman (on APC's behalf)  
Address:  
Telephone Number:  
Email Address: [LDONNEZ@TASMAN-LOG.COM](mailto:LDONNEZ@TASMAN-LOG.COM)

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: M. Renda

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Summed Consider #	Other			
B14 @ 15'	03/01/19	08:50	1 X						X		X	GBTEX TPH, DRD DRD, GFD	S	1
B15 @ 15'		11:24	1										A	2
S04 @ 13'		08:55	1										M D	3
W07 @ 13'		10:00	1										E A	4
W08 @ 13'		11:21	1										Y	5
														6
														7
														8
														9
														10
Relinquished By: <i>MM</i>	Date: 03/01/19	Time: 1650	Received By: <i>[Signature]</i>	Date: 3/1/19	Time: 1650	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>								
Relinquished By:	Date:	Time:	Received By:	Date:	Time:									

Date Results Needed

5.3

Origins Laboratory, Inc.

Jeff Pellipini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903025

Client: Tasman

Client Project ID: KMG-Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3/1/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1, 5.3 °C 1 °C 1 °C (Describe) °C

Thermometer ID: T003

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

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

Reviewed By: [Signature] (Project Manager)

Date/Time Reviewed: 3/1/19

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 - Tuttle L 17-6

**B14@15'**

**3/1/2019 8:50:00AM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903025-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	KDK	03/01/2019	03/01/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 77.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9C0103	JTD	03/01/2019	03/02/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "  
Surrogate: Toluene-d8 99.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.0 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B15@15'**

**3/1/2019 11:24:00AM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903025-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	KDK	03/01/2019	03/01/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 82.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>15.2</b>	5.00	mg/kg	25	B9C0103	JTD	03/01/2019	03/02/2019	
Benzene	<b>0.148</b>	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	<b>0.311</b>	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "

Surrogate: Toluene-d8 98.3 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 96.3 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

S09@13'

3/1/2019 8:55:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903025-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	KDK	03/01/2019	03/01/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 82.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0103	KDK	03/01/2019	03/01/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 86.1 % 70-130 " " "  
Surrogate: Toluene-d8 99.7 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.5 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W07@13'  
3/1/2019 10:00:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y903025-04 (Soil)

### DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	KDK	03/01/2019	03/01/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 73.3 % 59-131 " " "

### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.922	0.200	mg/kg	1	B9C0103	KDK	03/01/2019	03/01/2019	
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.4 % 70-130 " " "  
Surrogate: Toluene-d8 98.1 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W08@13'  
3/1/2019 11:21:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903025-05 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	148	25.0	mg/kg	1	B9C0104	KDK	03/01/2019	03/02/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 83.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	197	5.00	mg/kg	25	B9C0103	KDK	03/01/2019	03/02/2019	
Benzene	0.168	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.203	0.050	"	"	"	KDK	"	"	
Xylenes, total	3.84	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 87.2 % 70-130 " " "  
Surrogate: Toluene-d8 96.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.4 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0103 - EPA 5030 (soil)</b>										
<b>Blank (B9C0103-BLK1)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0103 - EPA 5030 (soil)</b>										
<b>Blank (B9C0103-BLK2)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

**LCS (B9C0103-BS1)**

Prepared: 03/01/2019 Analyzed: 03/01/2019

Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.214	0.004	"	0.200		107	76.6-124			
o-Xylene	0.114	0.002	"	0.100		114	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

**LCS (B9C0103-BS2)**

Prepared: 03/01/2019 Analyzed: 03/01/2019

Benzene	0.116	0.002	mg/kg	0.100		116	77.1-124			
Toluene	0.110	0.002	"	0.100		110	74.5-128			
Ethylbenzene	0.118	0.002	"	0.100		118	66.4-127			
m,p-Xylene	0.234	0.004	"	0.200		117	76.6-124			
o-Xylene	0.116	0.002	"	0.100		116	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike (B9C0103-MS1)		Source: Y903010-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.111	0.002	mg/kg	0.100	0.002	109	71.8-126			
Toluene	0.108	0.002	"	0.100	0.007	101	65.1-130			
Ethylbenzene	0.113	0.002	"	0.100	0.001	112	62.2-130			
m,p-Xylene	0.226	0.004	"	0.200	0.005	111	46.5-137			
o-Xylene	0.119	0.002	"	0.100	0.002	118	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike (B9C0103-MS2)		Source: Y903023-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126			
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130			
Ethylbenzene	0.110	0.002	"	0.100	ND	110	62.2-130			
m,p-Xylene	0.219	0.004	"	0.200	ND	110	46.5-137			
o-Xylene	0.115	0.002	"	0.100	ND	115	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0103-MSD1)		Source: Y903010-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.109	0.002	mg/kg	0.100	0.002	107	71.8-126	1.96	11.3	
Toluene	0.105	0.002	"	0.100	0.007	98.8	65.1-130	2.27	15.4	
Ethylbenzene	0.111	0.002	"	0.100	0.001	110	62.2-130	2.07	19.6	
m,p-Xylene	0.221	0.004	"	0.200	0.005	108	46.5-137	2.59	19.2	
o-Xylene	0.117	0.002	"	0.100	0.002	115	54.2-134	2.24	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0103-MSD2)		Source: Y903023-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	99.3	71.8-126	8.32	11.3	
Toluene	0.094	0.002	"	0.100	ND	94.2	65.1-130	8.23	15.4	
Ethylbenzene	0.099	0.002	"	0.100	ND	99.4	62.2-130	10.5	19.6	
m,p-Xylene	0.199	0.004	"	0.200	ND	99.4	46.5-137	9.63	19.2	
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134	8.32	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9C0104 - EPA 3580

#### Blank (B9C0104-BLK1)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

#### Blank (B9C0104-BLK2)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.1	59-131			

#### Blank (B9C0104-BLK3)

Prepared: 03/01/2019 Analyzed: 03/02/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		94.6	59-131			

#### LCS (B9C0104-BS1)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	983	50.0	mg/kg	1000		98.3	64-121			
Residual Range Organics (C28-C40)	1010	200	"	1000		101	58-124			
Surrogate: o-Terphenyl	50		"	50.0		101	59-131			

#### LCS (B9C0104-BS2)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	984	50.0	mg/kg	1000		98.4	64-121			
Residual Range Organics (C28-C40)	977	200	"	1000		97.7	58-124			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0104 - EPA 3580</b>										
<b>LCS (B9C0104-BS2)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Surrogate: o-Terphenyl	49		mg/kg	50.0		98.7	59-131			
<b>LCS (B9C0104-BS3)</b>					Prepared: 03/01/2019 Analyzed: 03/02/2019					
Diesel (C10-C28)	965	50.0	mg/kg	1000		96.5	64-121			
Residual Range Organics (C28-C40)	964	200	"	1000		96.4	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.5	59-131			
<b>Matrix Spike (B9C0104-MS1)</b>					<b>Source: Y903010-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125			
Residual Range Organics (C28-C40)	1070	200	"	1000	54.7	102	47-133			
Surrogate: o-Terphenyl	51		"	50.0		102	59-131			
<b>Matrix Spike (B9C0104-MS2)</b>					<b>Source: Y903013-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	918	50.0	mg/kg	1000	ND	91.8	53-125			
Residual Range Organics (C28-C40)	917	200	"	1000	12.1	90.5	47-133			
Surrogate: o-Terphenyl	44		"	50.0		87.5	59-131			
<b>Matrix Spike (B9C0104-MS3)</b>					<b>Source: Y903023-02</b>		Prepared: 03/01/2019 Analyzed: 03/02/2019			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125			
Residual Range Organics (C28-C40)	1070	200	"	1000	7.21	106	47-133			
Surrogate: o-Terphenyl	49		"	50.0		98.5	59-131			
<b>Matrix Spike Dup (B9C0104-MSD1)</b>					<b>Source: Y903010-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	957	50.0	mg/kg	1000	ND	95.7	53-125	6.22	20	
Residual Range Organics (C28-C40)	1010	200	"	1000	54.7	95.6	47-133	6.34	20	
Surrogate: o-Terphenyl	48		"	50.0		96.0	59-131			
<b>Matrix Spike Dup (B9C0104-MSD2)</b>					<b>Source: Y903013-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0104 - EPA 3580</b>										
<b>Matrix Spike Dup (B9C0104-MSD2)</b>		<b>Source: Y903013-02</b>			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Diesel (C10-C28)	955	50.0	mg/kg	1000	ND	95.5	53-125	3.95	20	
Residual Range Organics (C28-C40)	938	200	"	1000	12.1	92.6	47-133	2.35	20	
Surrogate: o-Terphenyl	46		"	50.0		91.8	59-131			
<b>Matrix Spike Dup (B9C0104-MSD3)</b>		<b>Source: Y903023-02</b>			Prepared: 03/01/2019 Analyzed: 03/02/2019					
Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	53-125	3.30	20	
Residual Range Organics (C28-C40)	1070	200	"	1000	7.21	107	47-133	0.529	20	
Surrogate: o-Terphenyl	54		"	50.0		108	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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

March 04, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6****Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 01, 2019. This project is associated with Origins project number Y903027-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S10@9'	Y903027-01	Soil	March 1, 2019 8:58	03/01/2019 16:50
W06@9'	Y903027-02	Soil	March 1, 2019 9:14	03/01/2019 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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**

LABORATORY, INC

www.originslaboratory.com

page 1 of 1

Client: Tasman (on APC's behalf)

Address:

Project Manager: R. Cornez

Project Name: Tuttle L 17-6



Project Number: 89156407

Telephone Number:

Samples Collected By: M Riandq

Email Address:

SCORNE2@tasman-gas.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other	GBTEX	TPH, DRO		
S10 @ 9'	03/01/19	08:58	1	X						X		X		1	Sample Instructions Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
W10 @ 9'	↓	09:14	1	X						X		X		2	
														3	
														4	
														5	
														6	
														7	
														8	
														9	
														10	
Relinquished By: 	Date: 03/01/19	Time: 16:50		Received By: 				Date: 3/1/19	Time: 16:50						
Relinquished By:	Date:	Time:		Received By:				Date:	Time:						

Date Results Needed

5.3

Origins Laboratory, Inc.

Jeff Pellipini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903027

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

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

Date/time completed: 3 / 1 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1, 5.3 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

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

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

Reviewed by (Project Manager) [Signature]

3/1/19  
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: [none]  
Project: KMG - Tuttle L 17-6

S10@9'

3/1/2019 8:58:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903027-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	JTD	03/01/2019	03/02/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 81.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0103	KDK	03/01/2019	03/01/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.2 % 70-130 " " "  
Surrogate: Toluene-d8 98.1 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W06@9'

3/1/2019 9:14:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903027-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0104	JTD	03/01/2019	03/02/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 79.7 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0103	KDK	03/01/2019	03/01/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 94.6 % 70-130 " " "  
Surrogate: Toluene-d8 98.6 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0103 - EPA 5030 (soil)</b>										
<b>Blank (B9C0103-BLK1)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0103 - EPA 5030 (soil)</b>										
<b>Blank (B9C0103-BLK2)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

**LCS (B9C0103-BS1)**

Prepared: 03/01/2019 Analyzed: 03/01/2019

Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.214	0.004	"	0.200		107	76.6-124			
o-Xylene	0.114	0.002	"	0.100		114	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0103 - EPA 5030 (soil)</b>										
<b>LCS (B9C0103-BS2)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.116	0.002	mg/kg	0.100		116	77.1-124			
Toluene	0.110	0.002	"	0.100		110	74.5-128			
Ethylbenzene	0.118	0.002	"	0.100		118	66.4-127			
m,p-Xylene	0.234	0.004	"	0.200		117	76.6-124			
o-Xylene	0.116	0.002	"	0.100		116	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike (B9C0103-MS1)		Source: Y903010-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.111	0.002	mg/kg	0.100	0.002	109	71.8-126			
Toluene	0.108	0.002	"	0.100	0.007	101	65.1-130			
Ethylbenzene	0.113	0.002	"	0.100	0.001	112	62.2-130			
m,p-Xylene	0.226	0.004	"	0.200	0.005	111	46.5-137			
o-Xylene	0.119	0.002	"	0.100	0.002	118	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike (B9C0103-MS2)		Source: Y903023-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126			
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130			
Ethylbenzene	0.110	0.002	"	0.100	ND	110	62.2-130			
m,p-Xylene	0.219	0.004	"	0.200	ND	110	46.5-137			
o-Xylene	0.115	0.002	"	0.100	ND	115	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0103-MSD1)		Source: Y903010-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.109	0.002	mg/kg	0.100	0.002	107	71.8-126	1.96	11.3	
Toluene	0.105	0.002	"	0.100	0.007	98.8	65.1-130	2.27	15.4	
Ethylbenzene	0.111	0.002	"	0.100	0.001	110	62.2-130	2.07	19.6	
m,p-Xylene	0.221	0.004	"	0.200	0.005	108	46.5-137	2.59	19.2	
o-Xylene	0.117	0.002	"	0.100	0.002	115	54.2-134	2.24	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C0103 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0103-MSD2)		Source: Y903023-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Benzene	0.099	0.002	mg/kg	0.100	ND	99.3	71.8-126	8.32	11.3	
Toluene	0.094	0.002	"	0.100	ND	94.2	65.1-130	8.23	15.4	
Ethylbenzene	0.099	0.002	"	0.100	ND	99.4	62.2-130	10.5	19.6	
m,p-Xylene	0.199	0.004	"	0.200	ND	99.4	46.5-137	9.63	19.2	
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134	8.32	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9C0104 - EPA 3580

#### Blank (B9C0104-BLK1)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

#### Blank (B9C0104-BLK2)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.1	59-131			

#### Blank (B9C0104-BLK3)

Prepared: 03/01/2019 Analyzed: 03/02/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		94.6	59-131			

#### LCS (B9C0104-BS1)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	983	50.0	mg/kg	1000		98.3	64-121			
Residual Range Organics (C28-C40)	1010	200	"	1000		101	58-124			
Surrogate: o-Terphenyl	50		"	50.0		101	59-131			

#### LCS (B9C0104-BS2)

Prepared: 03/01/2019 Analyzed: 03/01/2019

Diesel (C10-C28)	984	50.0	mg/kg	1000		98.4	64-121			
Residual Range Organics (C28-C40)	977	200	"	1000		97.7	58-124			

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 - Tuttle L 17-6

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0104 - EPA 3580</b>										
<b>LCS (B9C0104-BS2)</b>					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Surrogate: o-Terphenyl	49		mg/kg	50.0		98.7	59-131			
<b>LCS (B9C0104-BS3)</b>					Prepared: 03/01/2019 Analyzed: 03/02/2019					
Diesel (C10-C28)	965	50.0	mg/kg	1000		96.5	64-121			
Residual Range Organics (C28-C40)	964	200	"	1000		96.4	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.5	59-131			
<b>Matrix Spike (B9C0104-MS1)</b>					<b>Source: Y903010-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125			
Residual Range Organics (C28-C40)	1070	200	"	1000	54.7	102	47-133			
Surrogate: o-Terphenyl	51		"	50.0		102	59-131			
<b>Matrix Spike (B9C0104-MS2)</b>					<b>Source: Y903013-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	918	50.0	mg/kg	1000	ND	91.8	53-125			
Residual Range Organics (C28-C40)	917	200	"	1000	12.1	90.5	47-133			
Surrogate: o-Terphenyl	44		"	50.0		87.5	59-131			
<b>Matrix Spike (B9C0104-MS3)</b>					<b>Source: Y903023-02</b>		Prepared: 03/01/2019 Analyzed: 03/02/2019			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125			
Residual Range Organics (C28-C40)	1070	200	"	1000	7.21	106	47-133			
Surrogate: o-Terphenyl	49		"	50.0		98.5	59-131			
<b>Matrix Spike Dup (B9C0104-MSD1)</b>					<b>Source: Y903010-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			
Diesel (C10-C28)	957	50.0	mg/kg	1000	ND	95.7	53-125	6.22	20	
Residual Range Organics (C28-C40)	1010	200	"	1000	54.7	95.6	47-133	6.34	20	
Surrogate: o-Terphenyl	48		"	50.0		96.0	59-131			
<b>Matrix Spike Dup (B9C0104-MSD2)</b>					<b>Source: Y903013-02</b>		Prepared: 03/01/2019 Analyzed: 03/01/2019			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0104 - EPA 3580</b>										
<b>Matrix Spike Dup (B9C0104-MSD2)</b>		<b>Source: Y903013-02</b>			Prepared: 03/01/2019 Analyzed: 03/01/2019					
Diesel (C10-C28)	955	50.0	mg/kg	1000	ND	95.5	53-125	3.95	20	
Residual Range Organics (C28-C40)	938	200	"	1000	12.1	92.6	47-133	2.35	20	
Surrogate: o-Terphenyl	46		"	50.0		91.8	59-131			
<b>Matrix Spike Dup (B9C0104-MSD3)</b>		<b>Source: Y903023-02</b>			Prepared: 03/01/2019 Analyzed: 03/02/2019					
Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	53-125	3.30	20	
Residual Range Organics (C28-C40)	1070	200	"	1000	7.21	107	47-133	0.529	20	
Surrogate: o-Terphenyl	54		"	50.0		108	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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



March 07, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 06, 2019. This project is associated with Origins project number Y903064-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W10@9'	Y903064-01	Soil	March 6, 2019 11:05	03/06/2019 17:13
N16@9'	Y903064-02	Soil	March 6, 2019 11:11	03/06/2019 17:13
E11@9'	Y903064-03	Soil	March 6, 2019 11:23	03/06/2019 17:13
N14@9'	Y903064-04	Soil	March 6, 2019 11:29	03/06/2019 17:13

Origins Laboratory, Inc.



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Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

# ORIGINS

LABORATORY, INC

www.originslaboratory.com

Y903264

page 1 of 1

Client: Tasman (on APC's behalf)

Address: 6899 Rees St

Telephone Number:

Email Address: R.Lopez@tasman-gas.com

Project Manager:

Project Name:

Project Number:

Samples Collected By:

R. Corneiz

Tuttle L 17-6

89156407

CAMR

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #			Other
N1009'	3/6/19	11:05	1	X					X		TPH-DRO GREX DRO/GRO	SA	1
N1009'		11:11	1	X					X			NIE	2
E1009'		11:23	1	X					X			D	3
N1009'		11:29	1	X					X			AY	4
												Sample ID revised	5
												per the email from	6
												Enc on 3/7/19	7
													8
													9
													10
Relinquished By:	Date: 3/6/19	Time: 1713	Received By:	Date:	Time:	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard							
Relinquished By:	Date:	Time:	Received By:	Date:	Time:								

Date Results Needed

4.2

Origins Laboratory, Inc.

Jeff Pellipini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1903064

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JP

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

Date/time completed: 3/6/19

Airbill #: NA

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

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

Thermometer ID: TO03

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JP

Date/Time Reviewed 3/6/19

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: 89156407  
Project: KMG - Tuttle L 17-6

W10@9'

3/6/2019 11:05:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903064-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 84.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0601	KDK	"	03/06/2019	U
Benzene	0.002	0.002	"	"	"	KDK	"	"	
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " "  
Surrogate: Toluene-d8 98.2 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 96.3 % 70-130 " " "

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

N16@9'

3/6/2019 11:11:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903064-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 85.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0601	KDK	"	03/06/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 98.3 % 70-130 " " "  
Surrogate: Toluene-d8 101 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.2 % 70-130 " " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

E11@9'

3/6/2019 11:23:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903064-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 80.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0601	KDK	"	03/06/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.4 % 70-130 " " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

N14@9'

3/6/2019 11:29:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903064-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 78.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0601	KDK	"	03/06/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
Surrogate: Toluene-d8 98.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 96.3 % 70-130 " " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>Blank (B9C0601-BLK1)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.2	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>Blank (B9C0601-BLK2)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.097		"	0.125		77.7	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		86.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.10		"	0.125		80.7	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>LCS (B9C0601-BS1)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.096	0.002	mg/kg	0.100		95.9	77.1-124			
Toluene	0.107	0.002	"	0.100		107	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		104	76.6-124			
o-Xylene	0.103	0.002	"	0.100		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>LCS (B9C0601-BS2)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.092	0.002	mg/kg	0.100		91.6	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.098	0.002	"	0.100		97.9	66.4-127			
m,p-Xylene	0.196	0.004	"	0.200		97.8	76.6-124			
o-Xylene	0.096	0.002	"	0.100		96.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.8	70-130			

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike (B9C0601-MS1)		Source: Y903047-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.081	0.002	mg/kg	0.100	ND	81.0	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	89.9	65.1-130			
Ethylbenzene	0.085	0.002	"	0.100	ND	84.7	62.2-130			
m,p-Xylene	0.170	0.004	"	0.200	0.0009	84.5	46.5-137			
o-Xylene	0.083	0.002	"	0.100	0.0004	82.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike (B9C0601-MS2)		Source: Y903062-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126			
Toluene	0.117	0.002	"	0.100	ND	117	65.1-130			
Ethylbenzene	0.112	0.002	"	0.100	ND	112	62.2-130			
m,p-Xylene	0.221	0.004	"	0.200	0.001	110	46.5-137			
o-Xylene	0.109	0.002	"	0.100	0.0005	109	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0601-MSD1)		Source: Y903047-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.079	0.002	mg/kg	0.100	ND	78.7	71.8-126	2.85	11.3	
Toluene	0.085	0.002	"	0.100	ND	85.2	65.1-130	5.32	15.4	
Ethylbenzene	0.081	0.002	"	0.100	ND	80.5	62.2-130	5.08	19.6	
m,p-Xylene	0.162	0.004	"	0.200	0.0009	80.3	46.5-137	5.12	19.2	
o-Xylene	0.080	0.002	"	0.100	0.0004	79.2	54.2-134	4.49	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0601-MSD2)		Source: Y903062-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126	2.02	11.3	
Toluene	0.114	0.002	"	0.100	ND	114	65.1-130	2.66	15.4	
Ethylbenzene	0.113	0.002	"	0.100	ND	113	62.2-130	0.695	19.6	
m,p-Xylene	0.224	0.004	"	0.200	0.001	112	46.5-137	1.38	19.2	
o-Xylene	0.109	0.002	"	0.100	0.0005	109	54.2-134	0.110	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C0602 - EPA 3580**

**Blank (B9C0602-BLK1)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.4	59-131			

**Blank (B9C0602-BLK2)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	42		"	50.0		84.3	59-131			

**LCS (B9C0602-BS1)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	953	50.0	mg/kg	1000		95.3	64-121			
Residual Range Organics (C28-C40)	976	200	"	1000		97.6	58-124			
Surrogate: o-Terphenyl	48		"	50.0		95.2	59-131			

**LCS (B9C0602-BS2)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	927	50.0	mg/kg	1000		92.7	64-121			
Residual Range Organics (C28-C40)	942	200	"	1000		94.2	58-124			
Surrogate: o-Terphenyl	46		"	50.0		91.4	59-131			

**Matrix Spike (B9C0602-MS1)**

Source: Y903047-01

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	1110	50.0	mg/kg	1000	ND	111	53-125			
Residual Range Organics (C28-C40)	1090	200	"	1000	12.6	107	47-133			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0602 - EPA 3580</b>										
<b>Matrix Spike (B9C0602-MS1)</b>		<b>Source: Y903047-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Surrogate: o-Terphenyl	55		mg/kg	50.0		111	59-131			
<b>Matrix Spike (B9C0602-MS2)</b>		<b>Source: Y903062-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	918	50.0	mg/kg	1000	97.7	82.0	53-125			
Residual Range Organics (C28-C40)	934	200	"	1000	140	79.4	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			
<b>Matrix Spike Dup (B9C0602-MSD1)</b>		<b>Source: Y903047-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	1180	50.0	mg/kg	1000	ND	118	53-125	5.98	20	
Residual Range Organics (C28-C40)	1170	200	"	1000	12.6	116	47-133	7.21	20	
Surrogate: o-Terphenyl	59		"	50.0		118	59-131			
<b>Matrix Spike Dup (B9C0602-MSD2)</b>		<b>Source: Y903062-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	970	50.0	mg/kg	1000	97.7	87.3	53-125	6.20	20	
Residual Range Organics (C28-C40)	995	200	"	1000	140	85.5	47-133	7.40	20	
Surrogate: o-Terphenyl	44		"	50.0		87.7	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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

March 07, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6****Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 06, 2019. This project is associated with Origins project number Y903065-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B16@16'	Y903065-01	Soil	March 6, 2019 8:48	03/06/2019 17:13
W09@13'	Y903065-02	Soil	March 6, 2019 8:50	03/06/2019 17:13
W11@13'	Y903065-03	Soil	March 6, 2019 11:07	03/06/2019 17:13
B17@15'	Y903065-04	Soil	March 6, 2019 11:08	03/06/2019 17:13
N15@13'	Y903065-05	Soil	March 6, 2019 11:10	03/06/2019 17:13
E12@13'	Y903065-06	Soil	March 6, 2019 11:24	03/06/2019 17:13
N13@13'	Y903065-07	Soil	March 6, 2019 11:27	03/06/2019 17:13

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: 89156407  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

Y903045

ORIGINS  
LABORATORY, INC

page 1 of 1

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St.  
Telephone Number:  
Email Address: Rcornez@tasmangeo.com

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: CA/MR

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		
B16@16'	3/6/19	8:48	1	X					X		X	1 Soil
W09@13'		8:50	1	X					X		X	2 A
W11@13'		11:07	1	X					X		X	3 M
B17@15'		11:08	1	X					X		X	4 E
N15@13'		11:10	1	X					X		X	5 D
E08@13' E12@13'		11:24	1	X					X		X	6 A
N13@13'	↓	11:27	1	X					X		X	7 y
												8 Sample ID revised per
												9 the email from Eric
												10 On 3/7/19, go
Relinquished By: [Signature]	Date: 3/6/19	Time: 1713										Turnaround Time: 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>
Relinquished By:	Date:	Time:										Standard <input type="checkbox"/>

Date Results Needed

4.2

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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1903065

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JPD

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

Date/time completed: 3/6

Airbill #: NA

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

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

Thermometer ID: TOUR

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?				
Is there ice present (document if blue ice is used)	Y			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Were all samples received intact <sup>(1)</sup> ?	Y			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	Y			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	Y			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JPD

Date/Time Reviewed 3/6/19

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: 89156407  
Project: KMG - Tuttle L 17-6

**B16@16'**

**3/6/2019 8:48:00AM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903065-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 75.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C0601	KDK	"	03/06/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 98.0 % 70-130 " " "  
Surrogate: Toluene-d8 101 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 96.1 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

W09@13'

3/6/2019 8:50:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y903065-02 (Soil)

## DRO/RRO by EPA8015C

Diesel (C10-C28)	82.1	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 70.9 % 59-131 " " "

## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	126	5.00	mg/kg	25	B9C0601	KDK	"	03/07/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.282	0.050	"	"	"	KDK	"	"	
Xylenes, total	4.64	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 97.4 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 94.4 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

W11@13'  
3/6/2019 11:07:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y903065-03 (Soil)

## DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 76.0 % 59-131 " " "

## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	101	5.00	mg/kg	25	B9C0601	KDK	"	03/06/2019	
Benzene	1.70	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.214	0.050	"	"	"	KDK	"	"	
Xylenes, total	1.93	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.4 % 70-130 " " "

Surrogate: Toluene-d8 101 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 93.7 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

B17@15'

3/6/2019 11:08:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903065-04 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 73.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	14.0	5.00	mg/kg	25	B9C0601	KDK	"	03/06/2019	
Benzene	0.374	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.148	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 91.1 % 70-130 " " "

Surrogate: Toluene-d8 102 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 96.5 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

N15@13'

3/6/2019 11:10:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y903065-05 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	66.5	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 75.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	18.1	5.00	mg/kg	25	B9C0601	KDK	"	03/06/2019	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 91.0 % 70-130 " " "  
Surrogate: Toluene-d8 102 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.6 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

E12@13'

3/6/2019 11:24:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903065-06 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	40.7	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 85.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	22.5	5.00	mg/kg	25	B9C0601	KDK	"	03/07/2019	
Benzene	0.050	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.328	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 90.4 % 70-130 " " "  
Surrogate: Toluene-d8 103 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.7 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

N13@13'

3/6/2019 11:27:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903065-07 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C0602	KDK	03/06/2019	03/06/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 88.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	19.7	5.00	mg/kg	25	B9C0601	KDK	"	03/07/2019	
Benzene	0.450	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.213	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 90.3 % 70-130 " " "

Surrogate: Toluene-d8 103 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 97.1 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>Blank (B9C0601-BLK1)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>Blank (B9C0601-BLK2)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.097		"	0.125		77.7	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		86.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.10		"	0.125		80.7	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>LCS (B9C0601-BS1)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.096	0.002	mg/kg	0.100		95.9	77.1-124			
Toluene	0.107	0.002	"	0.100		107	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		104	76.6-124			
o-Xylene	0.103	0.002	"	0.100		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C0601 - EPA 5030 (soil)</b>										
<b>LCS (B9C0601-BS2)</b>					Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.092	0.002	mg/kg	0.100		91.6	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.098	0.002	"	0.100		97.9	66.4-127			
m,p-Xylene	0.196	0.004	"	0.200		97.8	76.6-124			
o-Xylene	0.096	0.002	"	0.100		96.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike (B9C0601-MS1)		Source: Y903047-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.081	0.002	mg/kg	0.100	ND	81.0	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	89.9	65.1-130			
Ethylbenzene	0.085	0.002	"	0.100	ND	84.7	62.2-130			
m,p-Xylene	0.170	0.004	"	0.200	0.0009	84.5	46.5-137			
o-Xylene	0.083	0.002	"	0.100	0.0004	82.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike (B9C0601-MS2)		Source: Y903062-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126			
Toluene	0.117	0.002	"	0.100	ND	117	65.1-130			
Ethylbenzene	0.112	0.002	"	0.100	ND	112	62.2-130			
m,p-Xylene	0.221	0.004	"	0.200	0.001	110	46.5-137			
o-Xylene	0.109	0.002	"	0.100	0.0005	109	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0601-MSD1)		Source: Y903047-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.079	0.002	mg/kg	0.100	ND	78.7	71.8-126	2.85	11.3	
Toluene	0.085	0.002	"	0.100	ND	85.2	65.1-130	5.32	15.4	
Ethylbenzene	0.081	0.002	"	0.100	ND	80.5	62.2-130	5.08	19.6	
m,p-Xylene	0.162	0.004	"	0.200	0.0009	80.3	46.5-137	5.12	19.2	
o-Xylene	0.080	0.002	"	0.100	0.0004	79.2	54.2-134	4.49	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C0601 - EPA 5030 (soil)**

Matrix Spike Dup (B9C0601-MSD2)		Source: Y903062-01			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126	2.02	11.3	
Toluene	0.114	0.002	"	0.100	ND	114	65.1-130	2.66	15.4	
Ethylbenzene	0.113	0.002	"	0.100	ND	113	62.2-130	0.695	19.6	
m,p-Xylene	0.224	0.004	"	0.200	0.001	112	46.5-137	1.38	19.2	
o-Xylene	0.109	0.002	"	0.100	0.0005	109	54.2-134	0.110	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C0602 - EPA 3580**

**Blank (B9C0602-BLK1)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.4	59-131			

**Blank (B9C0602-BLK2)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	42		"	50.0		84.3	59-131			

**LCS (B9C0602-BS1)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	953	50.0	mg/kg	1000		95.3	64-121			
Residual Range Organics (C28-C40)	976	200	"	1000		97.6	58-124			
Surrogate: o-Terphenyl	48		"	50.0		95.2	59-131			

**LCS (B9C0602-BS2)**

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	927	50.0	mg/kg	1000		92.7	64-121			
Residual Range Organics (C28-C40)	942	200	"	1000		94.2	58-124			
Surrogate: o-Terphenyl	46		"	50.0		91.4	59-131			

**Matrix Spike (B9C0602-MS1)**

Source: Y903047-01

Prepared: 03/06/2019 Analyzed: 03/06/2019

Diesel (C10-C28)	1110	50.0	mg/kg	1000	ND	111	53-125			
Residual Range Organics (C28-C40)	1090	200	"	1000	12.6	107	47-133			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C0602 - EPA 3580</b>										
<b>Matrix Spike (B9C0602-MS1)</b>		<b>Source: Y903047-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Surrogate: o-Terphenyl	55		mg/kg	50.0		111	59-131			
<b>Matrix Spike (B9C0602-MS2)</b>		<b>Source: Y903062-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	918	50.0	mg/kg	1000	97.7	82.0	53-125			
Residual Range Organics (C28-C40)	934	200	"	1000	140	79.4	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.7	59-131			
<b>Matrix Spike Dup (B9C0602-MSD1)</b>		<b>Source: Y903047-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	1180	50.0	mg/kg	1000	ND	118	53-125	5.98	20	
Residual Range Organics (C28-C40)	1170	200	"	1000	12.6	116	47-133	7.21	20	
Surrogate: o-Terphenyl	59		"	50.0		118	59-131			
<b>Matrix Spike Dup (B9C0602-MSD2)</b>		<b>Source: Y903062-01</b>			Prepared: 03/06/2019 Analyzed: 03/06/2019					
Diesel (C10-C28)	970	50.0	mg/kg	1000	97.7	87.3	53-125	6.20	20	
Residual Range Organics (C28-C40)	995	200	"	1000	140	85.5	47-133	7.40	20	
Surrogate: o-Terphenyl	44		"	50.0		87.7	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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





March 12, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 11, 2019. This project is associated with Origins project number Y903133-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N17@13'	Y903133-01	Soil	March 11, 2019 10:38	03/11/2019 17:00
W12@13'	Y903133-02	Soil	March 11, 2019 10:51	03/11/2019 17:00
B18@15'	Y903133-03	Soil	March 11, 2019 12:38	03/11/2019 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

1903133

ORIGINS  
LABORATORY, INC

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: RCornez@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa #		
N17@13'	3/11/19	10:58	1	X				X			TPH, D10 GRTX GRTX 020	1
W12@13'	10:51		1	X				X				2
B18@15'	12:36		1	X				X				3
												4
												5
												6
												7
												8
												9
												10
Relinquished by:	Date: 3/11/19	Time: 1700		Received By:		Date: 3/11/19	Time: 1700		Turnaround Time:			
Relinquished by:	Date:	Time:		Received By:		Date:	Time:		Same Day <input checked="" type="checkbox"/> 24 Hr			
									48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>			

Date Results Needed

36

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903133

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3 / 11 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 3.6 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

3/11/19  
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: 89156407  
Project: KMG - Tuttle L 17-6

N17@13'

3/11/2019 10:38:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y903133-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	28.7	25.0	mg/kg	1	B9C1113	JTD	03/11/2019	03/11/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	49.8	5.00	mg/kg	25	B9C1112	JTD	03/11/2019	03/11/2019	
Benzene	0.151	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.057	0.050	"	"	"	JTD	"	"	
Xylenes, total	0.277	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.9 % 70-130 " " "

Surrogate: Toluene-d8 99.7 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

W12@13'

3/11/2019 10:51:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903133-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1113	JTD	03/11/2019	03/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 69.3 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	58.4	5.00	mg/kg	25	B9C1112	JTD	03/11/2019	03/11/2019	
Benzene	0.126	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.050	0.050	"	"	"	JTD	"	"	
Xylenes, total	0.266	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 94.3 % 70-130 " " "

Surrogate: Toluene-d8 101 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 96.2 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**B18@15'**

**3/11/2019 12:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903133-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1113	JTD	03/11/2019	03/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 67.9 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	31.1	5.00	mg/kg	25	B9C1112	JTD	03/11/2019	03/11/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 96.6 % 70-130 " " "  
Surrogate: Toluene-d8 100 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1112 - EPA 5030 (soil)</b>										
<b>Blank (B9C1112-BLK1)</b>					Prepared: 03/11/2019 Analyzed: 03/11/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1112 - EPA 5030 (soil)</b>										
<b>LCS (B9C1112-BS1)</b>					Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.099	0.002	mg/kg	0.100		99.4	77.1-124			
Toluene	0.100	0.002	"	0.100		99.6	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		103	76.6-124			
o-Xylene	0.103	0.002	"	0.100		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C1112 - EPA 5030 (soil)**

Matrix Spike (B9C1112-MS1)		Source: Y903129-02			Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.091	0.002	mg/kg	0.100	ND	90.8	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	89.9	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.8	62.2-130			
m,p-Xylene	0.216	0.004	"	0.200	0.001	108	46.5-137			
o-Xylene	0.107	0.002	"	0.100	0.0003	106	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C1112 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1112-MSD1)		Source: Y903129-02			Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.082	0.002	mg/kg	0.100	ND	81.7	71.8-126	10.6	11.3	
Toluene	0.080	0.002	"	0.100	ND	80.2	65.1-130	11.4	15.4	
Ethylbenzene	0.089	0.002	"	0.100	ND	88.5	62.2-130	12.0	19.6	
m,p-Xylene	0.189	0.004	"	0.200	0.001	94.2	46.5-137	13.2	19.2	
o-Xylene	0.095	0.002	"	0.100	0.0003	94.4	54.2-134	11.9	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1113 - EPA 3580**

**Blank (B9C1113-BLK1)**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.1	59-131			

**LCS (B9C1113-BS1)**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	800	50.0	mg/kg	1000		80.0	64-121			
Residual Range Organics (C28-C40)	824	200	"	1000		82.4	58-124			
Surrogate: o-Terphenyl	41		"	50.0		82.4	59-131			

**Matrix Spike (B9C1113-MS1)**

**Source: Y903129-02**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	867	50.0	mg/kg	1000	ND	86.7	53-125			
Residual Range Organics (C28-C40)	892	200	"	1000	ND	89.2	47-133			
Surrogate: o-Terphenyl	45		"	50.0		91.0	59-131			

**Matrix Spike Dup (B9C1113-MSD1)**

**Source: Y903129-02**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	880	50.0	mg/kg	1000	ND	88.0	53-125	1.56	20	
Residual Range Organics (C28-C40)	917	200	"	1000	ND	91.7	47-133	2.74	20	
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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



March 12, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - 89156407**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 11, 2019. This project is associated with Origins project number Y903134-01.

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: 89156407

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N18@9'	Y903134-01	Soil	March 11, 2019 10:38	03/11/2019 17:00
W13@9'	Y903134-02	Soil	March 11, 2019 11:12	03/11/2019 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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

www.originslaboratory.com

page 1 of 1

Y903134

**ORIGINS**  
LABORATORY, INC

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: Rcornez@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa	Other	Analysis		Analysis
M18@1	3/11/19	10:35	1	X					X				TAP-RO	1
M13@1	11	11:12	1	X					X				GATEX (RO-RO)	2
														3
														4
														5
														6
														7
														8
														9
														10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	3/11/19	1700	<i>[Signature]</i>	3/11/19	1700	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Date Results Needed

36

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: 89156407  
Project: KMG - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903134

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3 / 11 / 2019

Airbill #: N/A

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

(Describe)

Cooler Number/Temperature: 1 / 36 °C        °C        °C        °C

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed 3/11/19

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: 89156407  
Project: KMG - Tuttle L 17-6

N18@9'

3/11/2019 10:38:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903134-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1113	JTD	03/11/2019	03/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	5.22	0.200	mg/kg	1	B9C1112	JTD	03/11/2019	03/11/2019	
Benzene	0.029	0.002	"	"	"	JTD	"	"	
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	0.003	0.002	"	"	"	JTD	"	"	
Xylenes, total	0.015	0.002	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "

Surrogate: Toluene-d8 97.5 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

W13@9'

3/11/2019 11:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903134-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1113	JTD	03/11/2019	03/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 70.7 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9C1112	JTD	03/11/2019	03/12/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 93.9 % 70-130 " " "  
Surrogate: Toluene-d8 102 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 98.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1112 - EPA 5030 (soil)</b>										
<b>Blank (B9C1112-BLK1)</b>					Prepared: 03/11/2019 Analyzed: 03/11/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1112 - EPA 5030 (soil)</b>										
<b>LCS (B9C1112-BS1)</b>					Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.099	0.002	mg/kg	0.100		99.4	77.1-124			
Toluene	0.100	0.002	"	0.100		99.6	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.207	0.004	"	0.200		103	76.6-124			
o-Xylene	0.103	0.002	"	0.100		103	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C1112 - EPA 5030 (soil)**

Matrix Spike (B9C1112-MS1)		Source: Y903129-02			Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.091	0.002	mg/kg	0.100	ND	90.8	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	89.9	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.8	62.2-130			
m,p-Xylene	0.216	0.004	"	0.200	0.001	108	46.5-137			
o-Xylene	0.107	0.002	"	0.100	0.0003	106	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**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 B9C1112 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1112-MSD1)		Source: Y903129-02			Prepared: 03/11/2019 Analyzed: 03/11/2019					
Benzene	0.082	0.002	mg/kg	0.100	ND	81.7	71.8-126	10.6	11.3	
Toluene	0.080	0.002	"	0.100	ND	80.2	65.1-130	11.4	15.4	
Ethylbenzene	0.089	0.002	"	0.100	ND	88.5	62.2-130	12.0	19.6	
m,p-Xylene	0.189	0.004	"	0.200	0.001	94.2	46.5-137	13.2	19.2	
o-Xylene	0.095	0.002	"	0.100	0.0003	94.4	54.2-134	11.9	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89156407  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1113 - EPA 3580**

**Blank (B9C1113-BLK1)**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.1	59-131			

**LCS (B9C1113-BS1)**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	800	50.0	mg/kg	1000		80.0	64-121			
Residual Range Organics (C28-C40)	824	200	"	1000		82.4	58-124			
Surrogate: o-Terphenyl	41		"	50.0		82.4	59-131			

**Matrix Spike (B9C1113-MS1)**

**Source: Y903129-02**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	867	50.0	mg/kg	1000	ND	86.7	53-125			
Residual Range Organics (C28-C40)	892	200	"	1000	ND	89.2	47-133			
Surrogate: o-Terphenyl	45		"	50.0		91.0	59-131			

**Matrix Spike Dup (B9C1113-MSD1)**

**Source: Y903129-02**

Prepared: 03/11/2019 Analyzed: 03/11/2019

Diesel (C10-C28)	880	50.0	mg/kg	1000	ND	88.0	53-125	1.56	20	
Residual Range Organics (C28-C40)	917	200	"	1000	ND	91.7	47-133	2.74	20	
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89156407

Project: KMG - Tuttle L 17-6

### 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

March 13, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 12, 2019. This project is associated with Origins project number Y903156-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N19@13'	Y903156-01	Soil	March 12, 2019 13:30	03/12/2019 18:15
W14@13'	Y903156-02	Soil	March 12, 2019 13:45	03/12/2019 18:15

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

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page 1 of 1

# ORIGINS

LABORATORY, INC

7903156

Client: APC/ Tasman Geosciences  
Address: 6899 Pecos Street, Denver, CO  
Telephone Number: 970-927-0393  
Email Address: RCornez@tasman-geo.com

Project Manager: Robert Cornez  
Project Name: Tuttle L 17-6  
Project Number: 90  
Samples Collected By: Zander Hamilton

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Container #			Other
N14@15'	3/12/14	1:30	1	X					X			X	Project name changed per the email from Eric on 3/13/19.
W14@13'	3/12/14	1:45	1	X					X			X	
													5
													6
													7
													8
													9
													10

Relinquished By: <i>[Signature]</i>	Date: 3/12/14	Time: 1:15	Received By: <i>[Signature]</i>	Date: 3-12-14	Time: 1:15	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

24

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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903156

Client: Tasman

Client Project ID: Tuttle L 17-6 11-16A

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3 / 12 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 2.4 °C \_\_\_\_\_ °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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Yes</u>
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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

3-12-19  
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**N19@13'**

**3/12/2019 1:30:00PM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903156-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	51.6	25.0	mg/kg	1	B9C1202	JTD	03/12/2019	03/12/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 91.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	48.5	5.00	mg/kg	25	B9C1201	JTD	03/12/2019	03/12/2019	
Benzene	0.320	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.056	0.050	"	"	"	JTD	"	"	
Xylenes, total	0.279	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.1 % 70-130 " " "  
Surrogate: Toluene-d8 101 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 107 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W14@13'  
3/12/2019 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903156-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1202	JTD	03/12/2019	03/12/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 70.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	16.4	5.00	mg/kg	25	B9C1201	JTD	03/12/2019	03/12/2019	
Benzene	0.149	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.100	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 110 % 70-130 " " "  
Surrogate: Toluene-d8 96.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1201 - EPA 5030 (soil)</b>										
<b>Blank (B9C1201-BLK1)</b>					Prepared: 03/12/2019 Analyzed: 03/12/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.3	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1201 - EPA 5030 (soil)**

**LCS (B9C1201-BS1)**

Prepared: 03/12/2019 Analyzed: 03/12/2019

Benzene	0.102	0.002	mg/kg	0.100		102	77.1-124			
Toluene	0.103	0.002	"	0.100		103	74.5-128			
Ethylbenzene	0.106	0.002	"	0.100		106	66.4-127			
m,p-Xylene	0.208	0.004	"	0.200		104	76.6-124			
o-Xylene	0.105	0.002	"	0.100		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1201 - EPA 5030 (soil)**

Matrix Spike (B9C1201-MS1)		Source: Y903058-02			Prepared: 03/12/2019 Analyzed: 03/12/2019					
Benzene	0.095	0.002	mg/kg	0.100	ND	95.2	71.8-126			
Toluene	0.095	0.002	"	0.100	ND	95.1	65.1-130			
Ethylbenzene	0.102	0.002	"	0.100	ND	102	62.2-130			
m,p-Xylene	0.201	0.004	"	0.200	ND	100	46.5-137			
o-Xylene	0.101	0.002	"	0.100	0.0004	101	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1201 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1201-MSD1)		Source: Y903058-02			Prepared: 03/12/2019 Analyzed: 03/12/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.2	71.8-126	1.08	11.3	
Toluene	0.092	0.002	"	0.100	ND	92.4	65.1-130	2.86	15.4	
Ethylbenzene	0.096	0.002	"	0.100	ND	96.4	62.2-130	5.59	19.6	
m,p-Xylene	0.190	0.004	"	0.200	ND	95.0	46.5-137	5.65	19.2	
o-Xylene	0.095	0.002	"	0.100	0.0004	95.0	54.2-134	5.74	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1202 - EPA 3580**

**Blank (B9C1202-BLK1)**

Prepared: 03/12/2019 Analyzed: 03/12/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	39		"	50.0		77.9	59-131			

**LCS (B9C1202-BS1)**

Prepared: 03/12/2019 Analyzed: 03/12/2019

Diesel (C10-C28)	922	50.0	mg/kg				64-121			
Residual Range Organics (C28-C40)	950	200	"				58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.3	59-131			

**Matrix Spike (B9C1202-MS1)**

**Source: Y903058-02**

Prepared: 03/12/2019 Analyzed: 03/12/2019

Diesel (C10-C28)	779	50.0	mg/kg		ND		53-125			
Residual Range Organics (C28-C40)	874	200	"		35.0		47-133			
Surrogate: o-Terphenyl	40		"	50.0		79.2	59-131			

**Matrix Spike Dup (B9C1202-MSD1)**

**Source: Y903058-02**

Prepared: 03/12/2019 Analyzed: 03/12/2019

Diesel (C10-C28)	802	50.0	mg/kg		ND		53-125		20	
Residual Range Organics (C28-C40)	955	200	"		35.0		47-133		20	
Surrogate: o-Terphenyl	41		"	50.0		82.9	59-131			

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 - Tuttle L 17-6

### 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

March 18, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 15, 2019. This project is associated with Origins project number Y903197-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N20@13'	Y903197-01	Soil	March 15, 2019 12:31	03/15/2019 16:58

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

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

# ORIGINS

LABORATORY, INC

www.originslaboratory.com

Y903197

page 1 of 1

Client: Tasman (on APC's behalf)

Address:

6899 Pecos St

Telephone Number:

Email Address:

Rcornetz@tasman-gas.com

Project Manager:

R. Cornetz

Project Name:

Tuttle L 17-6

Project Number:

89156407

Samples Collected By:

Christa

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #		
N/A0013	3/15/19	12:34	1	X					X		TPH D10 GTEX GRO D10	1
												2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By:	Date: 3/15/19	Time: 1658		Received By: [Signature]	Date: 3/15/19	Time: 1658		Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>				
Relinquished By:	Date:	Time:		Received By:	Date:	Time:						

Date Results Needed

10.4

Origins Laboratory, Inc.

Jeff Pellgrini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903197

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3 / 15 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 10.4 °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>Some 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed By (Project Manager) [Signature]

Date/Time Reviewed

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 - Tuttle L 17-6

N20@13'

3/15/2019 12:31:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903197-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1407	JTD	03/15/2019	03/15/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 78.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	34.9	5.00	mg/kg	25	B9C1406	KDK	03/15/2019	03/15/2019	
Benzene	0.215	0.050	"	"	"	KDK	"	"	
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	0.156	0.050	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4 97.3 % 70-130 " " "

Surrogate: Toluene-d8 98.2 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1406 - EPA 5030 (soil)</b>										
<b>Blank (B9C1406-BLK1)</b>					Prepared: 03/14/2019 Analyzed: 03/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.3	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1406 - EPA 5030 (soil)**

**LCS (B9C1406-BS1)**

Prepared: 03/14/2019 Analyzed: 03/15/2019

Benzene	0.106	0.002	mg/kg	0.100		106	77.1-124			
Toluene	0.107	0.002	"	0.100		107	74.5-128			
Ethylbenzene	0.113	0.002	"	0.100		113	66.4-127			
m,p-Xylene	0.223	0.004	"	0.200		111	76.6-124			
o-Xylene	0.111	0.002	"	0.100		111	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1406 - EPA 5030 (soil)**

Matrix Spike (B9C1406-MS1)		Source: Y903162-03			Prepared: 03/14/2019 Analyzed: 03/15/2019					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.2	71.8-126			
Toluene	0.089	0.002	"	0.100	ND	89.1	65.1-130			
Ethylbenzene	0.092	0.002	"	0.100	0.0006	91.7	62.2-130			
m,p-Xylene	0.185	0.004	"	0.200	0.002	91.6	46.5-137			
o-Xylene	0.092	0.002	"	0.100	0.0007	91.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1406 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1406-MSD1)		Source: Y903162-03			Prepared: 03/14/2019 Analyzed: 03/15/2019					
Benzene	0.091	0.002	mg/kg	0.100	ND	91.1	71.8-126	1.06	11.3	
Toluene	0.092	0.002	"	0.100	ND	92.3	65.1-130	3.51	15.4	
Ethylbenzene	0.098	0.002	"	0.100	0.0006	98.4	62.2-130	7.03	19.6	
m,p-Xylene	0.194	0.004	"	0.200	0.002	96.0	46.5-137	4.67	19.2	
o-Xylene	0.096	0.002	"	0.100	0.0007	95.2	54.2-134	3.57	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		86.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1407 - EPA 3580**

**Blank (B9C1407-BLK1)**

Prepared: 03/14/2019 Analyzed: 03/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		82.0	59-131			

**LCS (B9C1407-BS1)**

Prepared: 03/14/2019 Analyzed: 03/15/2019

Diesel (C10-C28)	892	50.0	mg/kg	1000		89.2	64-121			
Residual Range Organics (C28-C40)	874	200	"	1000		87.4	58-124			
Surrogate: o-Terphenyl	46		"	50.0		92.5	59-131			

**Matrix Spike (B9C1407-MS1)**

**Source: Y903162-03**

Prepared: 03/14/2019 Analyzed: 03/15/2019

Diesel (C10-C28)	1190	50.0	mg/kg	1000	ND	119	53-125			
Residual Range Organics (C28-C40)	1140	200	"	1000	14.1	113	47-133			
Surrogate: o-Terphenyl	65		"	50.0		131	59-131			

**Matrix Spike Dup (B9C1407-MSD1)**

**Source: Y903162-03**

Prepared: 03/14/2019 Analyzed: 03/15/2019

Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	53-125	13.1	20	
Residual Range Organics (C28-C40)	1030	200	"	1000	14.1	102	47-133	10.3	20	
Surrogate: o-Terphenyl	54		"	50.0		107	59-131			

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 - Tuttle L 17-6

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### 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



March 19, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 18, 2019. This project is associated with Origins project number Y903210-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N21@13'	Y903210-01	Soil	March 18, 2019 9:17	03/18/2019 16:30
N22@13'	Y903210-02	Soil	March 18, 2019 12:32	03/18/2019 16:30
B19@14.5'	Y903210-03	Soil	March 18, 2019 12:45	03/18/2019 16:30

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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**

LABORATORY, INC

Y903210

www.originslaboratory.com

page ☐ of ☐

Client: APC/Tasman Geosciences  
Address: 6899 Pecos Street, Denver, CO  
Telephone Number: 970-927-0393  
Email Address: RCornezz@tasman-geo.com

Project Manager: Robert Cornezz  
Project Name: Tuttle L17-6  
Project Number:  
Samples Collected By: Zander Hamilton

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summits Conifer	Other			
N22@15'	3/18/14	9:17	1	X					X			6-8 TEX	020/0.80	1
N22@15'		12:32	1	X					X			X		2
B19@14.5'		12:45	1	X					X			X		3
														4
														5
														6
														7
														8
														9
														10
Relinquished By: <i>Dr. H</i>	Date: 3/18/14	Time: 1630	Received By: <i>SC</i>	Date: 3/18/14	Time: 1630	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>								
Relinquished By:	Date:	Time:	Received By:	Date:	Time:									

Date Results Needed

3.d

Origins Laboratory, Inc.

Jeff Pellipini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y103210

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: JG

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

Date/time completed: 3 / 18 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 3.8 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by: [Signature] (Project Manager)

3/18/19  
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: [none]  
Project: KMG - Tuttle L 17-6

N21@13'

3/18/2019 9:17:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903210-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1805	JTD	03/18/2019	03/18/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 74.7 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	0.945	0.200	mg/kg	1	B9C1804	JTD	03/18/2019	03/18/2019	
Benzene	0.003	0.002	"	"	"	JTD	"	"	
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "

Surrogate: Toluene-d8 95.8 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 97.5 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

N22@13'

3/18/2019 12:32:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903210-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	42.5	25.0	mg/kg	1	B9C1805	JTD	03/18/2019	03/18/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 73.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	2.21	0.200	mg/kg	1	B9C1804	JTD	03/18/2019	03/18/2019	
Benzene	0.012	0.002	"	"	"	JTD	"	"	
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	0.002	0.002	"	"	"	JTD	"	"	
Xylenes, total	0.011	0.002	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "

Surrogate: Toluene-d8 96.0 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**B19@14.5'**

**3/18/2019 12:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903210-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1805	JTD	03/18/2019	03/18/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 75.0 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>0.251</b>	0.200	mg/kg	1	B9C1804	JTD	03/18/2019	03/18/2019	
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "  
Surrogate: Toluene-d8 96.5 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 95.8 % 70-130 " " "

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1804 - EPA 5030 (soil)</b>										
<b>Blank (B9C1804-BLK1)</b>					Prepared: 03/18/2019 Analyzed: 03/18/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.9	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1804 - EPA 5030 (soil)</b>										
<b>LCS (B9C1804-BS1)</b>					Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.096	0.002	mg/kg	0.100		96.2	77.1-124			
Toluene	0.094	0.002	"	0.100		94.1	74.5-128			
Ethylbenzene	0.091	0.002	"	0.100		91.0	66.4-127			
m,p-Xylene	0.180	0.004	"	0.200		90.1	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1804 - EPA 5030 (soil)**

Matrix Spike (B9C1804-MS1)		Source: Y903207-01			Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	93.7	71.8-126			
Toluene	0.088	0.002	"	0.100	ND	88.2	65.1-130			
Ethylbenzene	0.084	0.002	"	0.100	ND	83.5	62.2-130			
m,p-Xylene	0.167	0.004	"	0.200	ND	83.7	46.5-137			
o-Xylene	0.085	0.002	"	0.100	ND	85.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1804 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1804-MSD1)		Source: Y903207-01			Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.096	0.002	mg/kg	0.100	ND	96.1	71.8-126	2.53	11.3	
Toluene	0.094	0.002	"	0.100	ND	93.8	65.1-130	6.11	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.0	62.2-130	9.68	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	90.9	46.5-137	8.30	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	92.8	54.2-134	8.40	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1805 - EPA 3550B**

**Blank (B9C1805-BLK1)**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	36		"	50.0		72.2	59-131			

**LCS (B9C1805-BS1)**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	805	50.0	mg/kg	1000		80.5	64-121			
Residual Range Organics (C28-C40)	827	200	"	1000		82.7	58-124			
Surrogate: o-Terphenyl	41		"	50.0		82.4	59-131			

**Matrix Spike (B9C1805-MS1)**

**Source: Y903207-01**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	807	50.0	mg/kg	1000	14.2	79.3	53-125			
Residual Range Organics (C28-C40)	850	200	"	1000	17.3	83.3	47-133			
Surrogate: o-Terphenyl	41		"	50.0		81.9	59-131			

**Matrix Spike Dup (B9C1805-MSD1)**

**Source: Y903207-01**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	837	50.0	mg/kg	1000	14.2	82.3	53-125	3.75	20	
Residual Range Organics (C28-C40)	860	200	"	1000	17.3	84.2	47-133	1.14	20	
Surrogate: o-Terphenyl	42		"	50.0		84.3	59-131			

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 - Tuttle L 17-6

### 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



March 19, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 18, 2019. This project is associated with Origins project number Y903211-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N23@9'	Y903211-01	Soil	March 18, 2019 13:13	03/18/2019 16:30

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.*



Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

# ORIGINS

LABORATORY, INC

www.originslaboratory.com


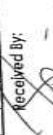
Y903211

page ☐ of ☐

Client: APC/Tasman Geosciences  
Address: 6899 Pecos Street, Denver, CO

Project Manager: Robert Gomez  
Project Name: Tuttle L17-b  
Project Number:  
Samples Collected By: Zander Hamilton

Telephone Number: 970-927-0343  
Email Address: RCornez@Tasman-geo.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ #		
N23041	3/18/14	1:13	1	b							X 6-BrTx X OPLO/DOO	1
												2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By: 	Date: 3/18/14	Time: 1630		Received By: 	Date: 3/18/14	Time: 1630	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/>					
Relinquished By:	Date:	Time:		Received By:	Date:	Time:	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>					

Date Results Needed

3.8

Origins Laboratory, Inc.

Jeff Pellipini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903211 Client: Tasman  
Client Project ID: KMG - Tuttle L 17-6  
Checklist Completed by: JG Shipped Via: HD  
Date/time completed: 3 / 18 / 2019 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: N/A  
Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)  
Cooler Number/Temperature: 1 / 3.8 °C        °C        °C        °C  
Thermometer ID: T003

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

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

Reviewed by (Project Manager)

3/18/19  
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: [none]  
Project: KMG - Tuttle L 17-6

N23@9'

3/18/2019 1:13:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903211-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C1805	JTD	03/18/2019	03/18/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 72.8 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C1804	JTD	03/18/2019	03/18/2019	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "  
Surrogate: Toluene-d8 94.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 96.8 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1804 - EPA 5030 (soil)</b>										
<b>Blank (B9C1804-BLK1)</b>					Prepared: 03/18/2019 Analyzed: 03/18/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.9	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1804 - EPA 5030 (soil)</b>										
<b>LCS (B9C1804-BS1)</b>					Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.096	0.002	mg/kg	0.100		96.2	77.1-124			
Toluene	0.094	0.002	"	0.100		94.1	74.5-128			
Ethylbenzene	0.091	0.002	"	0.100		91.0	66.4-127			
m,p-Xylene	0.180	0.004	"	0.200		90.1	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1804 - EPA 5030 (soil)**

Matrix Spike (B9C1804-MS1)		Source: Y903207-01			Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	93.7	71.8-126			
Toluene	0.088	0.002	"	0.100	ND	88.2	65.1-130			
Ethylbenzene	0.084	0.002	"	0.100	ND	83.5	62.2-130			
m,p-Xylene	0.167	0.004	"	0.200	ND	83.7	46.5-137			
o-Xylene	0.085	0.002	"	0.100	ND	85.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1804 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1804-MSD1)		Source: Y903207-01			Prepared: 03/18/2019 Analyzed: 03/18/2019					
Benzene	0.096	0.002	mg/kg	0.100	ND	96.1	71.8-126	2.53	11.3	
Toluene	0.094	0.002	"	0.100	ND	93.8	65.1-130	6.11	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.0	62.2-130	9.68	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	90.9	46.5-137	8.30	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	92.8	54.2-134	8.40	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C1805 - EPA 3550B**

**Blank (B9C1805-BLK1)**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	36		"	50.0		72.2	59-131			

**LCS (B9C1805-BS1)**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	805	50.0	mg/kg	1000		80.5	64-121			
Residual Range Organics (C28-C40)	827	200	"	1000		82.7	58-124			
Surrogate: o-Terphenyl	41		"	50.0		82.4	59-131			

**Matrix Spike (B9C1805-MS1)**

**Source: Y903207-01**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	807	50.0	mg/kg	1000	14.2	79.3	53-125			
Residual Range Organics (C28-C40)	850	200	"	1000	17.3	83.3	47-133			
Surrogate: o-Terphenyl	41		"	50.0		81.9	59-131			

**Matrix Spike Dup (B9C1805-MSD1)**

**Source: Y903207-01**

Prepared: 03/18/2019 Analyzed: 03/18/2019

Diesel (C10-C28)	837	50.0	mg/kg	1000	14.2	82.3	53-125	3.75	20	
Residual Range Organics (C28-C40)	860	200	"	1000	17.3	84.2	47-133	1.14	20	
Surrogate: o-Terphenyl	42		"	50.0		84.3	59-131			

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 - Tuttle L 17-6

### 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



March 20, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 19, 2019. This project is associated with Origins project number Y903237-01.

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 - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S12@13'	Y903237-01	Soil	March 19, 2019 10:15	03/19/2019 16:30
W15@13'	Y903237-02	Soil	March 19, 2019 10:01	03/19/2019 16:30

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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**  
LABORATORY, INC

Client: APC/Tasman Geosciences  
Address: 6899 Pecos Street, Denver, CO  
Telephone Number: 970-927-0393  
Email Address: RCornez@tasman-geo.com


Project Manager: Robert Cornez  
Project Name: Title LIT-6  
Project Number:  
Samples Collected By: Zander Hamilton

www.originslaboratory.com

page ☐ of ☐

Y903237

Email Address:

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis	Sample Instructions		
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Container #	Other					
S12E13	3/14/19	10:15	1	X					X			X	-STEX	X	O&O/DPO	
W15E13	3/14/19	10:01	1	X					X			X				
Relinquished By: 	Date: 3/14/19	Time: 1630												Date: 3/19/19	Time: 1630	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>
Relinquished By:	Date:	Time:												Date:	Time:	Standard <input checked="" type="checkbox"/>

Origins Laboratory, Inc.

Jeff Pellgrini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903237

Client: Tasman  
Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

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

Date/time completed: 3 / 19 / 2019

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

Cooler Number/Temperature: 1 / 5.2 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

3/19/19  
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

S12@13'

3/19/2019 10:15:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y903237-01 (Soil)

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	28.5	25.0	mg/kg	1	B9C1905	JTD	03/19/2019	03/19/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	23.2	5.00	mg/kg	25	B9C1904	JTD	03/19/2019	03/19/2019	
Benzene	0.090	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.268	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.7 % 70-130 " " "  
Surrogate: Toluene-d8 97.0 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.4 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

W15@13'

3/19/2019 10:01:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903237-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	55.5	25.0	mg/kg	1	B9C1905	JTD	03/19/2019	03/19/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 74.9 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	28.3	5.00	mg/kg	25	B9C1904	JTD	03/19/2019	03/19/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.122	0.050	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.2 % 70-130 " " "  
Surrogate: Toluene-d8 97.4 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 99.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>Blank (B9C1904-BLK1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.8	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>LCS (B9C1904-BS1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.100	0.002	"	0.100		100	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.199	0.004	"	0.200		99.5	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1904 - EPA 5030 (soil)**

Matrix Spike (B9C1904-MS1)		Source: Y903226-01			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.109	0.002	mg/kg	0.100	ND	109	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130			
m,p-Xylene	0.210	0.004	"	0.200	0.0009	104	46.5-137			
o-Xylene	0.105	0.002	"	0.100	0.0004	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1904 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1904-MSD1)		Source: Y903226-01			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	2.69	11.3	
Toluene	0.099	0.002	"	0.100	ND	99.4	65.1-130	4.52	15.4	
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130	6.10	19.6	
m,p-Xylene	0.196	0.004	"	0.200	0.0009	97.8	46.5-137	6.51	19.2	
o-Xylene	0.099	0.002	"	0.100	0.0004	98.4	54.2-134	5.60	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9C1905 - EPA 3580

#### Blank (B9C1905-BLK1)

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	58		"	50.0		115	59-131			

#### LCS (B9C1905-BS1)

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	865	50.0	mg/kg	1000		86.5	64-121			
Residual Range Organics (C28-C40)	834	200	"	1000		83.4	58-124			
Surrogate: o-Terphenyl	42		"	50.0		84.8	59-131			

#### Matrix Spike (B9C1905-MS1)

Source: Y903226-01

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	914	50.0	mg/kg	1000	ND	91.4	53-125			
Residual Range Organics (C28-C40)	885	200	"	1000	7.30	87.8	47-133			
Surrogate: o-Terphenyl	48		"	50.0		95.9	59-131			

#### Matrix Spike Dup (B9C1905-MSD1)

Source: Y903226-01

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	925	50.0	mg/kg	1000	ND	92.5	53-125	1.30	20	
Residual Range Organics (C28-C40)	881	200	"	1000	7.30	87.3	47-133	0.490	20	
Surrogate: o-Terphenyl	45		"	50.0		89.8	59-131			

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 - Tuttle L 17-6

### 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



March 20, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6**

**Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 19, 2019. This project is associated with Origins project number Y903238-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S11@9'	Y903238-01	Soil	March 19, 2019 10:12	03/19/2019 16:30

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.*

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

page  of

Project Manager: Robert Cornez

Project Name: Tuttle L 17-6

Project Number: [blank]

Samples Collected By: Zander Hamilton



Client: APC/ Tasman Geosciences

Address: 6899 Pecos Street, Denver, CO

Telephone Number: 970-927-0393

Email Address: RCornez@tasman-geo.com

Email Address:

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative						Matrix				Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other						
S1091	3/19/19	10:12	1	X					X					C-87EX	X	OEO/DLO	1
																	2
																	3
																	4
																	5
																	6
																	7
																	8
																	9
																	10
Relinquished By: 	Date: 3/19/19	Time: 1620	Received By: 	Date: 3/19/19	Time: 1630	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>	Standard <input type="checkbox"/>										
Relinquished By:	Date:	Time:	Received By:	Date:	Time:												

Origins Laboratory, Inc.

Jeff Pellipini

*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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903238

Client: Tasman  
Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

Date/time completed: 3 / 19 / 2019

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

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.2 °C / \_\_\_\_\_ °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

3/19/19  
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: [none]  
Project: KMG - Tuttle L 17-6

S11@9'

3/19/2019 10:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903238-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	125	25.0	mg/kg	1	B9C1905	JTD	03/19/2019	03/19/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 75.6 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	6.34	0.200	mg/kg	1	B9C1904	JTD	03/19/2019	03/19/2019	
Benzene	0.003	0.002	"	"	"	JTD	"	"	
Toluene	0.009	0.002	"	"	"	JTD	"	"	
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	0.005	0.002	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 124 % 70-130 " " "  
Surrogate: Toluene-d8 90.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 93.2 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>Blank (B9C1904-BLK1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.8	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>LCS (B9C1904-BS1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.100	0.002	"	0.100		100	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.199	0.004	"	0.200		99.5	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	70-130			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1904 - EPA 5030 (soil)**

Matrix Spike (B9C1904-MS1)		Source: Y903226-01			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.109	0.002	mg/kg	0.100	ND	109	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130			
m,p-Xylene	0.210	0.004	"	0.200	0.0009	104	46.5-137			
o-Xylene	0.105	0.002	"	0.100	0.0004	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C1904 - EPA 5030 (soil)**

Matrix Spike Dup (B9C1904-MSD1)		Source: Y903226-01			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	2.69	11.3	
Toluene	0.099	0.002	"	0.100	ND	99.4	65.1-130	4.52	15.4	
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130	6.10	19.6	
m,p-Xylene	0.196	0.004	"	0.200	0.0009	97.8	46.5-137	6.51	19.2	
o-Xylene	0.099	0.002	"	0.100	0.0004	98.4	54.2-134	5.60	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Extractable Petroleum Hydrocarbons by 8015C - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B9C1905 - EPA 3580

#### Blank (B9C1905-BLK1)

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	58		"	50.0		115	59-131			

#### LCS (B9C1905-BS1)

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	865	50.0	mg/kg	1000		86.5	64-121			
Residual Range Organics (C28-C40)	834	200	"	1000		83.4	58-124			
Surrogate: o-Terphenyl	42		"	50.0		84.8	59-131			

#### Matrix Spike (B9C1905-MS1)

Source: Y903226-01

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	914	50.0	mg/kg	1000	ND	91.4	53-125			
Residual Range Organics (C28-C40)	885	200	"	1000	7.30	87.8	47-133			
Surrogate: o-Terphenyl	48		"	50.0		95.9	59-131			

#### Matrix Spike Dup (B9C1905-MSD1)

Source: Y903226-01

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	925	50.0	mg/kg	1000	ND	92.5	53-125	1.30	20	
Residual Range Organics (C28-C40)	881	200	"	1000	7.30	87.3	47-133	0.490	20	
Surrogate: o-Terphenyl	45		"	50.0		89.8	59-131			

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 - Tuttle L 17-6

### 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

March 22, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Tuttle L 17-6****Project Number - [none]**

Attached are your analytical results for KMG - Tuttle L 17-6 received by Origins Laboratory, Inc. March 21, 2019. This project is associated with Origins project number Y903288-01.

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: [none]

Project: KMG - Tuttle L 17-6

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E13@9'	Y903288-01	Soil	March 21, 2019 13:07	03/21/2019 15:35

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

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page 1 of 1

# ORIGINS

LABORATORY, INC

11903288

Project Manager: R. Cornez  
Project Name: Tuttle L 17-6  
Project Number: 89156407  
Samples Collected By: Chris A

Client: Tasman (on APC's behalf)  
Address: 6899 Pecos St  
Telephone Number:  
Email Address: Rcornez@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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa			Other
E1309	3/2/19	1:07	1	X					X			TPH, DRG GTEX, GRC, G20	1
													2
													3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: [Signature]	Date: 3/2/19	Time: 1535		Received By: [Signature]	Date: 3/2/19	Time: 1535		Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>					
Relinquished By:	Date:	Time:		Received By:	Date:	Time:							

Date Results Needed

4.3

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 - Tuttle L 17-6

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903286

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 3 / 21 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.3 °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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / ( pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

3/21/19  
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: [none]  
Project: KMG - Tuttle L 17-6

E13@9'

3/21/2019 1:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903288-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9C2102	JTD	03/21/2019	03/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 68.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B9C2101	KDK	03/21/2019	03/21/2019	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 107 % 70-130 " " "  
Surrogate: Toluene-d8 93.7 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 97.2 % 70-130 " " "

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C2101 - EPA 5030 (soil)</b>										
<b>Blank (B9C2101-BLK1)</b>					Prepared: 03/21/2019 Analyzed: 03/21/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.6	70-130			

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Denver CO 80211

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Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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
<b>Batch B9C2101 - EPA 5030 (soil)</b>										
<b>Blank (B9C2101-BLK2)</b>					Prepared: 03/21/2019 Analyzed: 03/21/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.5	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

**LCS (B9C2101-BS1)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Benzene	0.102	0.002	mg/kg	0.100		102	77.1-124			
Toluene	0.096	0.002	"	0.100		96.0	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		96.2	66.4-127			
m,p-Xylene	0.188	0.004	"	0.200		94.1	76.6-124			
o-Xylene	0.094	0.002	"	0.100		94.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

**LCS (B9C2101-BS2)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Benzene	0.112	0.002	mg/kg	0.100		112	77.1-124			
Toluene	0.107	0.002	"	0.100		107	74.5-128			
Ethylbenzene	0.107	0.002	"	0.100		107	66.4-127			
m,p-Xylene	0.210	0.004	"	0.200		105	76.6-124			
o-Xylene	0.104	0.002	"	0.100		104	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

Matrix Spike (B9C2101-MS1)		Source: Y903248-09			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Benzene	0.079	0.002	mg/kg	0.100	ND	79.3	71.8-126			
Toluene	0.073	0.002	"	0.100	ND	72.7	65.1-130			
Ethylbenzene	0.067	0.002	"	0.100	ND	67.1	62.2-130			
m,p-Xylene	0.137	0.004	"	0.200	ND	68.5	46.5-137			
o-Xylene	0.066	0.002	"	0.100	ND	66.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

Matrix Spike (B9C2101-MS2)		Source: Y903288-01			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126			
Toluene	0.100	0.002	"	0.100	ND	100	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.8	62.2-130			
m,p-Xylene	0.196	0.004	"	0.200	ND	97.8	46.5-137			
o-Xylene	0.098	0.002	"	0.100	ND	98.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

Matrix Spike Dup (B9C2101-MSD1)		Source: Y903248-09			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.3	71.8-126	17.3	11.3	QR-02
Toluene	0.087	0.002	"	0.100	ND	87.4	65.1-130	18.3	15.4	QR-02
Ethylbenzene	0.082	0.002	"	0.100	ND	82.1	62.2-130	20.1	19.6	QR-02
m,p-Xylene	0.164	0.004	"	0.200	ND	82.1	46.5-137	18.1	19.2	
o-Xylene	0.081	0.002	"	0.100	ND	81.0	54.2-134	20.1	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**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 B9C2101 - EPA 5030 (soil)**

Matrix Spike Dup (B9C2101-MSD2)		Source: Y903288-01			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Benzene	0.105	0.002	mg/kg	0.100	ND	105	71.8-126	0.379	11.3	
Toluene	0.099	0.002	"	0.100	ND	99.1	65.1-130	0.904	15.4	
Ethylbenzene	0.098	0.002	"	0.100	ND	97.9	62.2-130	1.86	19.6	
m,p-Xylene	0.193	0.004	"	0.200	ND	96.6	46.5-137	1.23	19.2	
o-Xylene	0.097	0.002	"	0.100	ND	96.9	54.2-134	1.52	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.8	70-130			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9C2102 - EPA 3580**

**Blank (B9C2102-BLK1)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	42		"	50.0		84.3	59-131			

**Blank (B9C2102-BLK2)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	37		"	50.0		74.0	59-131			

**LCS (B9C2102-BS1)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	1080	200	"	1000		108	58-124			
Surrogate: o-Terphenyl	50		"	50.0		99.2	59-131			

**LCS (B9C2102-BS2)**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Diesel (C10-C28)	867	50.0	mg/kg	1000		86.7	64-121			
Residual Range Organics (C28-C40)	904	200	"	1000		90.4	58-124			
Surrogate: o-Terphenyl	45		"	50.0		90.7	59-131			

**Matrix Spike (B9C2102-MS1)**

**Source: Y903248-09**

Prepared: 03/21/2019 Analyzed: 03/21/2019

Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	53-125			
Residual Range Organics (C28-C40)	1110	200	"	1000	6.73	110	47-133			

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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Tuttle L 17-6

## Extractable Petroleum Hydrocarbons by 8015C - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B9C2102 - EPA 3580</b>										
<b>Matrix Spike (B9C2102-MS1)</b>		<b>Source: Y903248-09</b>			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Surrogate: o-Terphenyl	54		mg/kg	50.0		109	59-131			
<b>Matrix Spike (B9C2102-MS2)</b>		<b>Source: Y903288-01</b>			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Diesel (C10-C28)	779	50.0	mg/kg	1000	ND	77.9	53-125			
Residual Range Organics (C28-C40)	802	200	"	1000	ND	80.2	47-133			
Surrogate: o-Terphenyl	38		"	50.0		75.1	59-131			
<b>Matrix Spike Dup (B9C2102-MSD1)</b>		<b>Source: Y903248-09</b>			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125	3.00	20	
Residual Range Organics (C28-C40)	1100	200	"	1000	6.73	109	47-133	0.465	20	
Surrogate: o-Terphenyl	51		"	50.0		101	59-131			
<b>Matrix Spike Dup (B9C2102-MSD2)</b>		<b>Source: Y903288-01</b>			Prepared: 03/21/2019 Analyzed: 03/21/2019					
Diesel (C10-C28)	862	50.0	mg/kg	1000	ND	86.2	53-125	10.1	20	
Residual Range Organics (C28-C40)	913	200	"	1000	ND	91.3	47-133	13.0	20	
Surrogate: o-Terphenyl	43		"	50.0		86.5	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Tuttle L 17-6

### 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.



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Jen Pellegrini For Noelle Doyle Mathis, President