



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.

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: [Signature] Shipped Via: Pick-up
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Date/time completed: 2-13-19 Airbill #: N/A
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: / 4.9 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH <2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 2-13-19

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)	256	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	143	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	0.132	0.050	"	"	"	KDK	"	"	
Xylenes, total	3.00	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.



The results in this report 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

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 " " "

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 B9B1301 - EPA 5030 (soil)

Blank (B9B1301-BLK1)

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			

Origins Laboratory, Inc.



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

Batch B9B1301 - EPA 5030 (soil)

LCS (B9B1301-BS1)

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			

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 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			

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 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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>98.9</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>97.0</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>102</i>	<i>70-130</i>			

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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.

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
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



1902206

Client: Tasman (on APC's behalf)
 Address: 6899 Pecos St
 Telephone Number:
 Email Address: bob@tasman-geos.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 ₃	Other	Groundwater	Soil	Air Summ #			Other	
N01@13'	2/15/19	9:26	1											
E01@13'		9:33	1											
B03@14'		9:54	1											
E03@13'		10:32	1											
N03@13'		12:53	1											
B04@14'		1:00	1											
E05@13'		1:07	1											
B05@15'		1:42	1											
N05@13'		1:44	1											
Relinquished By: [Signature]	Date: 2/15/19	Time: 1:00	Received By: [Signature]	Date: 2/15/19	Time: 1:00	Received By: [Signature]	Date: 2/15/19	Time: 1:00	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"/>	Separate Report				

Date Results Needed

5.2

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

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: _____ (Describe)

Cooler Number/Temperature: 1 / 5.2 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by: [Signature] (Project Manager)

2/15/19
 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

N01@13'
2/15/2019 9:26:00AM

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

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.



The results in this report 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

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.



The results in this report 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

B03@14'

2/15/2019 9:54:00AM

Analyte	Result	Reporting 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.



The results in this report 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

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.



The results in this report 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

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			"	"	"	"	
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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.



The results in this report 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

B04@14'
2/15/2019 1:00:00PM

Analyte	Result	Reporting 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.



The results in this report 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

E05@13'

2/15/2019 1:07:00PM

Analyte	Result	Reporting 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	Reporting 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
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Batch B9B1507 - EPA 5030 (soil)

Blank (B9B1507-BLK1)

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.



The results in this report 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

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.

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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4902207
 Checklist Completed by: JG
 Date/time completed: 2/15/2019

Client: Tasman
 Client Project ID: KMG - Tuttle L 17-6
 Shipped Via: HD
 (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 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) / (pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 2/15/19

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

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	Reporting 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.



The results in this report 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

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.



The results in this report 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

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.



The results in this report 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)

Blank (B9B1501-BLK1)

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
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Batch B9B1501 - EPA 5030 (soil)

Blank (B9B1501-BLK2)

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
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Batch B9B1501 - EPA 5030 (soil)

LCS (B9B1501-BS1)

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
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Batch B9B1501 - EPA 5030 (soil)

LCS (B9B1501-BS2)

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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>99.3</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>97.0</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>100</i>	<i>70-130</i>			

Origins Laboratory, Inc.



The results in this report 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-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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>98.7</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>96.6</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>100</i>	<i>70-130</i>			

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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 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
Batch B9B1502 - EPA 3550B										
Matrix Spike (B9B1502-MS1)		Source: Y902183-01			Prepared: 02/15/2019 Analyzed: 02/15/2019					
Surrogate: o-Terphenyl	46		mg/kg	50.0		91.3	59-131			
Matrix Spike (B9B1502-MS2)		Source: Y902194-01			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			
Matrix Spike Dup (B9B1502-MSD1)		Source: Y902183-01			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			
Matrix Spike Dup (B9B1502-MSD2)		Source: Y902194-01			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			

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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



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.

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
 Checklist Completed by: JG
 Date/time completed: 2/19/2019
 Matrix(s) Received: (Check all that apply): Soil/Solid _____ Water _____ Other: _____
 Cooler Number/Temperature: 1 2.7 °C _____ °C _____ °C _____ °C (Describe)
 Thermometer ID: T003

Client: Tasman
 Client Project ID: KMG - Tuttle L 17-6
 Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours preserved ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 2/19/19

Origins Laboratory, Inc.



The results in this report 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.



The results in this report 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

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.



The results in this report 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 B9B1902 - EPA 5030 (soil)

Blank (B9B1902-BLK1)

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			

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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)

Blank (B9B1902-BLK2)

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.



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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-BS2)

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			

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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.



The results in this report 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 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.



The results in this report 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 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.



The results in this report 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
Batch B9B1903 - EPA 3550B										
Matrix Spike (B9B1903-MS1)		Source: Y902228-01			Prepared: 02/19/2019 Analyzed: 02/19/2019					
Surrogate: o-Terphenyl	50		mg/kg	50.0		100	59-131			
Matrix Spike (B9B1903-MS2)		Source: Y902228-08			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			
Matrix Spike Dup (B9B1903-MSD1)		Source: Y902228-01			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			
Matrix Spike Dup (B9B1903-MSD2)		Source: Y902228-08			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			

Origins Laboratory, Inc.



The results in this report 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

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



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.



The results in this report 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.)
 Airbill #: N/A

Date/time completed: 2/21/2019

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

Cooler Number/Temperature: 1 / 4.5 °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 ≤ 8°C ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input 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 ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analytes in order to insure sample integrity)/(pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

JG
 Reviewed by (Project Manager)

2/21/19
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

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

N07@13'
2/21/2019 1:32:00PM

Analyte	Result	Reporting 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.



The results in this report 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

E07@13'
2/21/2019 1:49:00PM

Analyte	Result	Reporting 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
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Batch B9B2101 - EPA 5030 (soil)

Blank (B9B2101-BLK1)

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
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Batch B9B2101 - EPA 5030 (soil)

LCS (B9B2101-BS1)

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
Batch B9B2102 - EPA 3580										
Matrix Spike (B9B2102-MS1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Surrogate: o-Terphenyl	44		mg/kg	50.0		87.8	59-131			
Matrix Spike (B9B2102-MS2)		Source: Y902291-04			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			
Matrix Spike Dup (B9B2102-MSD1)		Source: Y902261-02			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			
Matrix Spike Dup (B9B2102-MSD2)		Source: Y902291-04			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.



The results in this report 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



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.

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) / _____ °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾if NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action 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	Reporting 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	Reporting 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.



The results in this report 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)

Blank (B9B2101-BLK1)

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
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Batch B9B2101 - EPA 5030 (soil)

LCS (B9B2101-BS1)

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
Batch B9B2102 - EPA 3580										
Matrix Spike (B9B2102-MS1)		Source: Y902261-02			Prepared: 02/21/2019 Analyzed: 02/21/2019					
Surrogate: o-Terphenyl	44		mg/kg	50.0		87.8	59-131			
Matrix Spike (B9B2102-MS2)		Source: Y902291-04			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			
Matrix Spike Dup (B9B2102-MSD1)		Source: Y902261-02			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			
Matrix Spike Dup (B9B2102-MSD2)		Source: Y902291-04			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.



The results in this report 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

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



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.



The results in this report 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: Revo-p
(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: _____

Cooler Number/Temperature: 1 / 2.4 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: C1003

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

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

Reviewed by (Project Manager) _____

2-22-19
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: 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: <i>o</i> -Terphenyl	88.5 %	59-131			"	"	"	"	
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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.



The results in this report 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

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.



The results in this report 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)

Blank (B9B2201-BLK1)

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.



The results in this report 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)

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.



The results in this report 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 (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.

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



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.

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: 790320

Client: Tasman

Client Project ID: KMG - Tuttle L 17-6

Checklist Completed by: DL

Shipped Via: Pick-up

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed DL 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

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.



The results in this report 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

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.



The results in this report 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)

Blank (B9B2201-BLK1)

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.



The results in this report 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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

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.



The results in this report 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 (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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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.



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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 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 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



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

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.)
 Airbill #: N/A

Date/time completed: 2/25/2019

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

Cooler Number/Temperature: 1 / 1.7 °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 ^{(1)?}	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? if yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by: [Signature]
 (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

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
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Batch B9B2501 - EPA 5030 (soil)

Blank (B9B2501-BLK1)

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
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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.

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by: [Signature] Date/Time Reviewed: 2/25/19
 (Project Manager)

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

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
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Batch B9B2501 - EPA 5030 (soil)

Blank (B9B2501-BLK1)

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.



The results in this report 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 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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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			

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

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



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

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 ^{(1)?}	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

[Signature]
 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	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: <i>o</i> -Terphenyl	73.4 %	59-131			"	"	"	"	
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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			"	"	"	"	

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)

Blank (B9B2608-BLK1)

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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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)

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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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 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.



The results in this report 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 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



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.

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.)
 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 ≤ 8°C ^{(1)?}	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

[Signature]
 Reviewed by (Project Manager)

2/26/19
 Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

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

Blank (B9B2608-BLK1)

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
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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.



The results in this report 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 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.



The results in this report 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 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.

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.)
 Airbill #: N/A

Date/time completed: 2/27/2019

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH).		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager)

2/27/19
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: 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
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Batch B9B2702 - EPA 5030 (soil)

Blank (B9B2702-BLK1)

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.



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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 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.

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: Da Lee

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

Date/time completed: 2-28-19

Airbill #: not

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 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.



The results in this report 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

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.



The results in this report 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

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.



The results in this report 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

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 " " "

Origins Laboratory, Inc.



The results in this report 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)

Blank (B9B2802-BLK1)

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.



The results in this report 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)

Blank (B9B2802-BLK2)

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.



The results in this report 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)

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.



The results in this report 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)

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.



The results in this report 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 (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.



The results in this report 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 (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			

Origins Laboratory, Inc.



The results in this report 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			

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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			

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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
Batch B9B2803 - EPA 3580										
Matrix Spike (B9B2803-MS1)		Source: Y902367-03			Prepared: 02/28/2019 Analyzed: 02/28/2019					
Surrogate: o-Terphenyl	41		mg/kg	50.0		82.5	59-131			
Matrix Spike (B9B2803-MS2)		Source: Y902392-03			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			
Matrix Spike Dup (B9B2803-MSD1)		Source: Y902367-03			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			
Matrix Spike Dup (B9B2803-MSD2)		Source: Y902392-03			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			

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 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.



The results in 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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 7902393

Client: Tasman

Client Project ID: KMG - 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: _____
 (Describe)

Cooler Number/Temperature: 1 / 4.9 °C _____ / _____ °C _____ / _____ °C _____ / _____ °C

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <-2 for samples preserved with HNO3, HCl, H2SO4) / (pH >+10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 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

N10@13'
2/28/2019 1:01:00PM

Analyte	Result	Reporting 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.



The results in this report 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

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.



The results in this report 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

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
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Batch B9B2802 - EPA 5030 (soil)

Blank (B9B2802-BLK1)

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.



The results in this report 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)

Blank (B9B2802-BLK2)

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
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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.



The results in this report 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)

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.



The results in this report 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 (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.



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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-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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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
Batch B9B2803 - EPA 3580										
Matrix Spike (B9B2803-MS1)			Source: Y902367-03		Prepared: 02/28/2019 Analyzed: 02/28/2019					
Surrogate: o-Terphenyl	41		mg/kg	50.0		82.5	59-131			
Matrix Spike (B9B2803-MS2)			Source: Y902392-03		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			
Matrix Spike Dup (B9B2803-MSD1)			Source: Y902367-03		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			
Matrix Spike Dup (B9B2803-MSD2)			Source: Y902392-03		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			

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.

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.

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 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



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
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.

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.)
 Airbill #: N/A

Date/time completed: 3/1/2019

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 ≤ 8°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed By: [Signature] 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	Reporting 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	15.2	5.00	mg/kg	25	B9C0103	JTD	03/01/2019	03/02/2019	
Benzene	0.148	0.050	"	"	"	JTD	"	"	
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	0.311	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	Reporting 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	Reporting 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.



The results in this report 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

W08@13'
3/1/2019 11:21:00AM

Analyte	Result	Reporting 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.



The results in this report 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)

Blank (B9C0103-BLK1)

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.



The results in this report 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)

Blank (B9C0103-BLK2)

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.



The results in this report 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-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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.11</i>		<i>"</i>	<i>0.125</i>		<i>90.2</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>99.5</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>100</i>	<i>70-130</i>			

Origins Laboratory, Inc.



The results in this report 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
Batch B9C0104 - EPA 3580										
LCS (B9C0104-BS2)					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Surrogate: o-Terphenyl	49		mg/kg	50.0		98.7	59-131			
LCS (B9C0104-BS3)					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			
Matrix Spike (B9C0104-MS1)		Source: Y903010-02			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			
Matrix Spike (B9C0104-MS2)		Source: Y903013-02			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			
Matrix Spike (B9C0104-MS3)		Source: Y903023-02			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			
Matrix Spike Dup (B9C0104-MSD1)		Source: Y903010-02			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			
Matrix Spike Dup (B9C0104-MSD2)		Source: Y903013-02			Prepared: 03/01/2019 Analyzed: 03/01/2019					

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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
Batch B9C0104 - EPA 3580										
Matrix Spike Dup (B9C0104-MSD2)			Source: Y903013-02			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	
<i>Surrogate: o-Terphenyl</i>	46		"	50.0		91.8	59-131			
Matrix Spike Dup (B9C0104-MSD3)			Source: Y903023-02			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	
<i>Surrogate: o-Terphenyl</i>	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 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



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
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.

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

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.)
 Airbill #: N/A

Date/time completed: 3/1/2019

Matrix(es) 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> 1/4 inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 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

S10@9'

3/1/2019 8:58:00AM

Analyte	Result	Reporting 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.



The results in this report 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

W06@9'

3/1/2019 9:14:00AM

Analyte	Result	Reporting 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
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Batch B9C0103 - EPA 5030 (soil)

Blank (B9C0103-BLK1)

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.



The results in this report 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)

Blank (B9C0103-BLK2)

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			

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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			

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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			

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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			

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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.



The results in this report 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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.11</i>		<i>"</i>	<i>0.125</i>		<i>90.2</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>99.5</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>100</i>	<i>70-130</i>			

Origins Laboratory, Inc.



The results in this report 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
Batch B9C0104 - EPA 3580										
LCS (B9C0104-BS2)					Prepared: 03/01/2019 Analyzed: 03/01/2019					
Surrogate: o-Terphenyl	49		mg/kg	50.0		98.7	59-131			
LCS (B9C0104-BS3)					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			
Matrix Spike (B9C0104-MS1)		Source: Y903010-02			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			
Matrix Spike (B9C0104-MS2)		Source: Y903013-02			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			
Matrix Spike (B9C0104-MS3)		Source: Y903023-02			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			
Matrix Spike Dup (B9C0104-MSD1)		Source: Y903010-02			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			
Matrix Spike Dup (B9C0104-MSD2)		Source: Y903013-02			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
Batch B9C0104 - EPA 3580										
Matrix Spike Dup (B9C0104-MSD2)		Source: Y903013-02			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	
<i>Surrogate: o-Terphenyl</i>	46		"	50.0		91.8	59-131			
Matrix Spike Dup (B9C0104-MSD3)		Source: Y903023-02			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	
<i>Surrogate: o-Terphenyl</i>	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.



The results in this report 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

page 1 of 1



Y903004

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

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

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #			Other
W1009'	3/6/19	11:05	1	X				X				SA	1
W1009'		11:11	1	X				X				ME	2
W1009' @ 51109'		11:23	1	X				X				D	3
W1009'		11:29	1	X				X				AY	4
												Sample ID revised	5
												per the email from	6
												TRC on 3/7/19	7
													8
													9
													10
Relinquished By: [Signature]	Date: 3/6/19	Time: 1713						Received By: [Signature]	Date: 3/6/19	Time: 1713		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: [Signature]	Date: 3/6/19	Time: 1713						Received By: [Signature]	Date: 3/6/19	Time: 1713			

Date Results Needed

4.2

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1903024

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: _____

Cooler Number/Temperature: 1 / 4.2 °C _____ / _____ °C _____ / _____ °C _____ / _____ °C (Describe)

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 ⁽¹⁾ ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

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

JP
 Reviewed by (Project Manager)

3/6/19
 Date/Time Reviewed

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

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

W10@9'
3/6/2019 11:05:00AM

Analyte	Result	Reporting 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: <i>o</i> -Terphenyl	84.5 %	59-131			"	"	"	"	
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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			"	"	"	"	

Origins Laboratory, Inc.



The results in this report 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

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.



The results in this report 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

E11@9'

3/6/2019 11:23:00AM

Analyte	Result	Reporting 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.



The results in this report 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

N14@9'
3/6/2019 11:29:00AM

Analyte	Result	Reporting 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.



The results in this report 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 B9C0601 - EPA 5030 (soil)

Blank (B9C0601-BLK1)

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.



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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)

Blank (B9C0601-BLK2)

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
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Batch B9C0601 - EPA 5030 (soil)

LCS (B9C0601-BS1)

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
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Batch B9C0601 - EPA 5030 (soil)

LCS (B9C0601-BS2)

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.



The results in this report 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 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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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-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.



The results in this report 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 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
Batch B9C0602 - EPA 3580										
Matrix Spike (B9C0602-MS1)			Source: Y903047-01		Prepared: 03/06/2019 Analyzed: 03/06/2019					
Surrogate: o-Terphenyl	55		mg/kg	50.0		111	59-131			
Matrix Spike (B9C0602-MS2)			Source: Y903062-01		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			
Matrix Spike Dup (B9C0602-MSD1)			Source: Y903047-01		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			
Matrix Spike Dup (B9C0602-MSD2)			Source: Y903062-01		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			

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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.

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



Y903065

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: CAMR

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #			Other
B16@16'	3/6/19	8:48	1	X				X				1	S
W09@13'		8:50	1	X				X				2	A
W11@13'		11:07	1	X				X				3	M
B17@15'		11:08	1	X				X				4	E
NB@13'		11:10	1	X				X				5	D
E08@13' E12@13'		11:24	1	X				X				6	A
NB@13'		11:27	1	X				X				7	Y
Relinquished By: [Signature]	Date: 3/6/19	Time: 17:13						Received By: [Signature]	Date: 3/6/19	Time: 17:13		10	Standard
Relinquished By: [Signature]	Date: 3/6/19	Time: 17:13						Received By: [Signature]	Date: 3/6/19	Time: 17:13			

Date Results Needed

4.2

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

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

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: V903065

Client: Tasman

Client Project ID: Tuttle L 17-6

Checklist Completed by: JPD

Shipped Via: HD
 (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: TOUB

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

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

Reviewed by (Project Manager) JPD

Date/Time Reviewed 3/6/19

Origins Laboratory, Inc.



The results in this report 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	Reporting 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.



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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

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.



The results in this report 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

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.



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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

E12@13'

3/6/2019 11:24:00AM

Analyte	Result	Reporting 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.



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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

N13@13'
3/6/2019 11:27:00AM

Analyte	Result	Reporting 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.



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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)

Blank (B9C0601-BLK1)

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.



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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)

Blank (B9C0601-BLK2)

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.



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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)

LCS (B9C0601-BS1)

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
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Batch B9C0601 - EPA 5030 (soil)

LCS (B9C0601-BS2)

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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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-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
Batch B9C0602 - EPA 3580										
Matrix Spike (B9C0602-MS1)			Source: Y903047-01		Prepared: 03/06/2019 Analyzed: 03/06/2019					
Surrogate: o-Terphenyl	55		mg/kg	50.0		111	59-131			
Matrix Spike (B9C0602-MS2)			Source: Y903062-01		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			
Matrix Spike Dup (B9C0602-MSD1)			Source: Y903047-01		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			
Matrix Spike Dup (B9C0602-MSD2)			Source: Y903062-01		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.



The results in this report 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: 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 ^{(1)?}	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ^{(1)?}	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ^{(1)?}	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 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

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.



The results in this report 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

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: <i>o</i> -Terphenyl	67.9 %	59-131			"	"	"	"	
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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
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Batch B9C1112 - EPA 5030 (soil)

Blank (B9C1112-BLK1)

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
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Batch B9C1112 - EPA 5030 (soil)

LCS (B9C1112-BS1)

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.



The results in this report 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 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.



The results in this report 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 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.

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

1903134

ORIGINS
 LABORATORY, INC

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 ₃	Other	Groundwater	Soil	Air Summa #	Other	TAT: DRD		GALEX (GRD:DRD)
M18@91	3/11/19	10:35	1	X				X				X	1	
M13@91	"	11:12	1	X				X				X	2	
													3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	
Relinquished by:	Date: 3/11/19	Time: 1700	Time: 1700	Received By: [Signature]	Received By: [Signature]	Date: 3/11/19	Date: 3/11/19	Time: 1700	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:	Time:	Received By:	Received By:	Date:	Date:	Time:	Time:					

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
 Date/time completed: 3/11/2019 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 1/36 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 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.



The results in this report 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

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.



The results in this report 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)

Blank (B9C1112-BLK1)

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
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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 B9C1112 - EPA 5030 (soil)

LCS (B9C1112-BS1)

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
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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 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			

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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 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
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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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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



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
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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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

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
 Date/time completed: 3 / 12 / 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 / 2.4 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>Yes</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

3-12-19
 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

N19@13'
3/12/2019 1:30:00PM

Analyte	Result	Reporting 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
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Batch B9C1201 - EPA 5030 (soil)

Blank (B9C1201-BLK1)

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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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)

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			

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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 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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>92.2</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>103</i>	<i>70-130</i>			

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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 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



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
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.

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
 Date/time completed: 3 / 15 / 2019

Shipped Via: HD
 (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 / 10.4 °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 ⁽¹⁾ ?		<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO3, HCl, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - 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
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Batch B9C1406 - EPA 5030 (soil)

Blank (B9C1406-BLK1)

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
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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

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.

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: 1703210

Client: Tasman
 Client Project ID: KMG - 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 / 18 / 2019

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by: [Signature]
 (Project Manager)

Date/Time Reviewed: 3/18/19

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

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			"	"	"	"	
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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	0.251	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
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Batch B9C1804 - EPA 5030 (soil)

Blank (B9C1804-BLK1)

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
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Batch B9C1804 - EPA 5030 (soil)

LCS (B9C1804-BS1)

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.



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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 (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.

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: _____
 Cooler Number/Temperature: 1 / 3.8 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with Na ₂ SO ₃ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 3/18/19

Origins Laboratory, Inc.



The results in this report 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	Reporting 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
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Batch B9C1804 - EPA 5030 (soil)

Blank (B9C1804-BLK1)

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
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Batch B9C1804 - EPA 5030 (soil)

LCS (B9C1804-BS1)

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.



The results in this report 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 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 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.

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: _____ (Describe)

Cooler Number/Temperature: 1 / 5.2 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 3/19/19

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

S12@13'

3/19/2019 10:15:00AM

Analyte	Result	Reporting 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.



The results in this report 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

W15@13'

3/19/2019 10:01:00AM

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

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.



The results in this report 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)

Blank (B9C1904-BLK1)

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
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Batch B9C1904 - EPA 5030 (soil)

LCS (B9C1904-BS1)

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
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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.



The results in this report 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 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



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
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.

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

Date/time completed: 3 / 19 / 2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 5.2 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by: [Signature] (Project Manager) Date/Time Reviewed: 3/19/19

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

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
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Batch B9C1904 - EPA 5030 (soil)

Blank (B9C1904-BLK1)

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

Batch B9C1904 - EPA 5030 (soil)

LCS (B9C1904-BS1)

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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.13</i>		<i>"</i>	<i>0.125</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>95.7</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.12</i>		<i>"</i>	<i>0.125</i>		<i>99.6</i>	<i>70-130</i>			

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			

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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.



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



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
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.

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: 1903286

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): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 / 4.3 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? if yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄ / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 3/21/19

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

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 " " "

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 B9C2101 - EPA 5030 (soil)

Blank (B9C2101-BLK1)

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			

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 B9C2101 - EPA 5030 (soil)

Blank (B9C2101-BLK2)

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			

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 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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 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 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			

Origins Laboratory, Inc.



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Tasman Geosciences
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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-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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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 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			

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 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			

Origins Laboratory, Inc.



The results in this report 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 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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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
Batch B9C2102 - EPA 3580										
Matrix Spike (B9C2102-MS1)			Source: Y903248-09		Prepared: 03/21/2019 Analyzed: 03/21/2019					
Surrogate: o-Terphenyl	54		mg/kg	50.0		109	59-131			
Matrix Spike (B9C2102-MS2)			Source: Y903288-01		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			
Matrix Spike Dup (B9C2102-MSD1)			Source: Y903248-09		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			
Matrix Spike Dup (B9C2102-MSD2)			Source: Y903288-01		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			

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.

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