

March 04, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Jacobucci Gas Unit 1

Project Number - [none]

Attached are your analytical results for KMG - Jacobucci Gas Unit 1 received by Origins Laboratory, Inc. March 04, 2015. This project is associated with Origins project number X503028-01.

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

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01 @ 15	X503028-01	Soil	March 4, 2015 14:55	03/04/2015 16:15
W01 @ 10	X503028-02	Soil	March 4, 2015 15:05	03/04/2015 16:15

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.

Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS03028

Client: Tasman
 Client Project ID: Jacobucci Gas Unit 1

Checklist Completed by: Jen Pellegrini

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

Date/time completed: 3-4-15

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 3-2°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⁾ ?	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)		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			pH
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⁾ ?	Y			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	Y			
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.

[Signature]
 Reviewed by (Project Manager)

03-04-15
 Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

B01 @ 15
 3/4/2015 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503028-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C04007	03/04/2015	03/04/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 98.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	5C04006	03/04/2015	03/04/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.5 % 70-130 " " "

Surrogate: Toluene-d8 95.4 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 99.8 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.08		pH Units	1	5C04004	03/04/2015	03/04/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.119		mmhos/cm	"	5C04005	03/04/2015	03/04/2015	
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Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

W01 @ 10
 3/4/2015 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503028-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	84	50	mg/kg	1	5C04007	03/04/2015	03/04/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 93.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	76.7	5.00	mg/kg	25	5C04006	03/04/2015	03/04/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.210	0.050	"	"	"	"	"	
Xylenes, total	3.27	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 94.8 % 70-130 " " "
Surrogate: Toluene-d8 112 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.78		pH Units	1	5C04004	03/04/2015	03/04/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0945		mmhos/cm	"	5C04005	03/04/2015	03/04/2015	
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Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C04006 - EPA 5030 (soil)

Blank (5C04006-BLK1)

Prepared: 03/04/2015 Analyzed: 03/04/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>60.1</i>		<i>ug/kg</i>	<i>62.5</i>		<i>96.2</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>70.4</i>		<i>"</i>	<i>62.5</i>		<i>113</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>60.0</i>		<i>"</i>	<i>62.5</i>		<i>96.0</i>	<i>70-130</i>			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C04006 - EPA 5030 (soil)

LCS (5C04006-BS1)

Prepared: 03/04/2015 Analyzed: 03/04/2015

Benzene	0.099	0.002	mg/kg	0.100		99.4	77.1-124			
Toluene	0.106	0.002	"	0.100		106	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.208	0.004	"	0.200		104	76.6-124			
o-Xylene	0.107	0.002	"	0.100		107	76.6-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>58.5</i>		<i>ug/kg</i>	<i>62.5</i>		<i>93.6</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>62.3</i>		<i>"</i>	<i>62.5</i>		<i>99.6</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>63.4</i>		<i>"</i>	<i>62.5</i>		<i>102</i>	<i>70-130</i>			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C04006 - EPA 5030 (soil)

Matrix Spike (5C04006-MS1)	Source: X503024-02			Prepared: 03/04/2015 Analyzed: 03/04/2015						
Benzene	0.085	0.002	mg/kg	0.100	ND	85.1	71.8-126			
Toluene	0.079	0.002	"	0.100	ND	78.7	65.1-130			
Ethylbenzene	0.083	0.002	"	0.100	ND	82.7	62.2-130			
m,p-Xylene	0.169	0.004	"	0.200	ND	84.7	46.5-137			
o-Xylene	0.082	0.002	"	0.100	ND	81.6	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63.0		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62.4		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	65.8		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C04006 - EPA 5030 (soil)

Matrix Spike Dup (5C04006-MSD1)	Source: X503024-02			Prepared: 03/04/2015 Analyzed: 03/04/2015						
Benzene	0.094	0.002	mg/kg	0.100	ND	93.9	71.8-126	9.85	11.3	
Toluene	0.096	0.002	"	0.100	ND	96.2	65.1-130	20.0	15.4	QM-07
Ethylbenzene	0.090	0.002	"	0.100	ND	89.6	62.2-130	8.01	19.6	
m,p-Xylene	0.182	0.004	"	0.200	ND	91.0	46.5-137	7.22	19.2	
o-Xylene	0.092	0.002	"	0.100	ND	91.7	54.2-134	11.7	17.9	
Surrogate: 1,2-Dichloroethane-d4	62.0		ug/kg	62.5		99.2	70-130			
Surrogate: Toluene-d8	64.9		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	66.9		"	62.5		107	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C04007 - EPA 3580

Blank (5C04007-BLK1)

Prepared: 03/04/2015 Analyzed: 03/04/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
<i>Surrogate: o-Terphenyl</i>	43		"	50.0		85.6	59-131			

LCS (5C04007-BS1)

Prepared: 03/04/2015 Analyzed: 03/04/2015

Diesel (C10-C28)	950	50	mg/kg	1000		95.4	64-121			
Residual Range Organics (C28-C36)	1100	200	"	1000		107	58-124			
<i>Surrogate: o-Terphenyl</i>	50		"	50.0		99.6	59-131			

Matrix Spike (5C04007-MS1)

Source: X503024-01

Prepared: 03/04/2015 Analyzed: 03/04/2015

Diesel (C10-C28)	800	50	mg/kg	1000	35	76.8	53-125			
Residual Range Organics (C28-C36)	880	200	"	1000	19	86.5	47-133			
<i>Surrogate: o-Terphenyl</i>	37		"	50.0		73.7	59-131			

Matrix Spike Dup (5C04007-MSD1)

Source: X503024-01

Prepared: 03/04/2015 Analyzed: 03/04/2015

Diesel (C10-C28)	940	50	mg/kg	1000	35	90.0	53-125	15.3	20	
Residual Range Organics (C28-C36)	1100	200	"	1000	19	104	47-133	18.4	20	
<i>Surrogate: o-Terphenyl</i>	42		"	50.0		84.4	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C04004 - NO PREP										
Duplicate (5C04004-DUP1)		Source: X503024-01			Prepared: 03/04/2015 Analyzed: 03/04/2015					
pH	8.53		pH Units		8.47			0.706	25	
Batch 5C04005 - NO PREP										
Blank (5C04005-BLK1)		Prepared: 03/04/2015 Analyzed: 03/04/2015								
Specific Conductance (EC)	0.00260		mmhos/cm							
Duplicate (5C04005-DUP1)		Source: X503024-01			Prepared: 03/04/2015 Analyzed: 03/04/2015					
Specific Conductance (EC)	0.188		mmhos/cm		0.187			0.427	25	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

Notes and Definitions

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

March 10, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Jacobucci Gas Unit 1

Project Number - [none]

Attached are your analytical results for KMG - Jacobucci Gas Unit 1 received by Origins Laboratory, Inc. March 09, 2015. This project is associated with Origins project number X503071-01.

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

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01@10'	X503071-01	Soil	March 9, 2015 14:20	03/09/2015 15:00
E01@10'	X503071-02	Soil	March 9, 2015 14:25	03/09/2015 15:00
N01@10'	X503071-03	Soil	March 9, 2015 14:30	03/09/2015 15:00

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1



X508071

Client: PHC
 Address: _____
 Telephone Number: _____
 Email Address: _____

Project Manager: Christine Wasko
 Project Name: Jacobucci Gas Unit 1
 Project Number: 88735603 (no)
 Samples Collected By: C. Wasko

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		Requisitioned By:	Requisitioned By:	Date:	Time:	Date:	Time:	Background Time:	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air System	Other	PH, EC								HAZSAP
S01C10	3/9/15	420	1	X				X												
P01C10	↓	425	↓																	
N01C10	↓	430	↓																	

Date Results Needed

Origins Laboratory, Inc.

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X503071

Client: Tasman

Client Project ID: Jacobucci

Checklist Completed by: Jen Pellegrini

Shipped Via: 6.5 Day
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 3/9/15

Airbill #: _____

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

Cooler Number/Temperature: 1 / 40°c _____ °c _____ °c (Describe) _____ °c

Thermometer ID: 7003

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

JPP
 Reviewed by (Project Manager)

3-9-15
 Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

S01@10'
3/9/2015 2:20:00PM

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

Origins Laboratory, Inc.
X503071-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	190	50	mg/kg	1	5C09007	03/09/2015	03/09/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: *o*-Terphenyl 87.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	128	5.00	mg/kg	25	5C09006	03/09/2015	03/09/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.446	0.050	"	"	"	"	"	
Xylenes, total	6.06	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.9 % 70-130 " " "
 Surrogate: Toluene-d8 111 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.77		pH Units	1	5C09008	03/09/2015	03/09/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0768		mmhos/cm	"	5C09009	03/09/2015	03/09/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

E01@10'
3/9/2015 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503071-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	140	50	mg/kg	1	5C09007	03/09/2015	03/09/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 94.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	102	5.00	mg/kg	25	5C09006	03/09/2015	03/09/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.498	0.050	"	"	"	"	"	
Xylenes, total	5.29	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 105 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.35		pH Units	1	5C09008	03/09/2015	03/09/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0666		mmhos/cm	"	5C09009	03/09/2015	03/09/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

N01@10'
3/9/2015 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503071-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	360	50	mg/kg	1	5C09007	03/09/2015	03/09/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: *o*-Terphenyl 96.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	192	5.00	mg/kg	25	5C09006	03/09/2015	03/09/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.889	0.050	"	"	"	"	"	
Xylenes, total	12.5	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
 Surrogate: Toluene-d8 115 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.39		pH Units	1	5C09008	03/09/2015	03/09/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.158		mmhos/cm	"	5C09009	03/09/2015	03/09/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C09006 - EPA 5030 (soil)

Blank (5C09006-BLK1)

Prepared: 03/09/2015 Analyzed: 03/09/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	61.2		ug/kg	62.5		98.0	70-130			
Surrogate: Toluene-d8	70.8		"	62.5		113	70-130			
Surrogate: 4-Bromofluorobenzene	60.6		"	62.5		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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C09006 - EPA 5030 (soil)

LCS (5C09006-BS1)

Prepared: 03/09/2015 Analyzed: 03/09/2015

Benzene	0.096	0.002	mg/kg	0.100		95.5	77.1-124			
Toluene	0.095	0.002	"	0.100		95.1	74.5-128			
Ethylbenzene	0.086	0.002	"	0.100		85.7	66.4-127			
m,p-Xylene	0.174	0.004	"	0.200		86.9	76.6-124			
o-Xylene	0.091	0.002	"	0.100		90.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63.7		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	64.0		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	64.6		"	62.5		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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C09006 - EPA 5030 (soil)

Matrix Spike (5C09006-MS1)	Source: X503055-01			Prepared: 03/09/2015 Analyzed: 03/09/2015						
Benzene	0.093	0.002	mg/kg	0.100	ND	93.3	71.8-126			
Toluene	0.097	0.002	"	0.100	ND	96.9	65.1-130			
Ethylbenzene	0.080	0.002	"	0.100	ND	79.7	62.2-130			
m,p-Xylene	0.162	0.004	"	0.200	ND	81.1	46.5-137			
o-Xylene	0.085	0.002	"	0.100	0.0004	84.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	64.6		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	67.9		"	62.5		109	70-130			
Surrogate: 4-Bromofluorobenzene	65.0		"	62.5		104	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C09006 - EPA 5030 (soil)

Matrix Spike Dup (5C09006-MSD1)	Source: X503055-01			Prepared: 03/09/2015 Analyzed: 03/09/2015						
Benzene	0.099	0.002	mg/kg	0.100	ND	99.1	71.8-126	6.01	11.3	
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130	3.65	15.4	
Ethylbenzene	0.073	0.002	"	0.100	ND	73.1	62.2-130	8.74	19.6	
m,p-Xylene	0.155	0.004	"	0.200	ND	77.3	46.5-137	4.79	19.2	
o-Xylene	0.082	0.002	"	0.100	0.0004	81.5	54.2-134	3.41	17.9	
Surrogate: 1,2-Dichloroethane-d4	66.8		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	71.6		"	62.5		114	70-130			
Surrogate: 4-Bromofluorobenzene	68.0		"	62.5		109	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C09007 - EPA 3580

Blank (5C09007-BLK1)

Prepared: 03/09/2015 Analyzed: 03/09/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	41		"	50.0		82.3	59-131			

LCS (5C09007-BS1)

Prepared: 03/09/2015 Analyzed: 03/09/2015

Diesel (C10-C28)	860	50	mg/kg				64-121			
Residual Range Organics (C28-C36)	710	200	"	1000		70.7	58-124			
Surrogate: o-Terphenyl	40		"	50.0		80.9	59-131			

Matrix Spike (5C09007-MS1)

Source: X503055-01

Prepared: 03/09/2015 Analyzed: 03/09/2015

Diesel (C10-C28)	940	50	mg/kg		160		53-125			
Residual Range Organics (C28-C36)	740	200	"	1000	40	69.8	47-133			
Surrogate: o-Terphenyl	36		"	50.0		72.7	59-131			

Matrix Spike Dup (5C09007-MSD1)

Source: X503055-01

Prepared: 03/09/2015 Analyzed: 03/09/2015

Diesel (C10-C28)	920	50	mg/kg		160		53-125	1.56	20	
Residual Range Organics (C28-C36)	720	200	"	1000	40	67.7	47-133	2.92	20	
Surrogate: o-Terphenyl	35		"	50.0		69.9	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C09008 - NO PREP										
Duplicate (5C09008-DUP1)		Source: X503055-01			Prepared: 03/09/2015 Analyzed: 03/09/2015					
pH	8.22		pH Units		8.27			0.606	25	
Batch 5C09009 - NO PREP										
Blank (5C09009-BLK1)		Prepared: 03/09/2015 Analyzed: 03/09/2015								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (5C09009-DUP1)		Source: X503055-01			Prepared: 03/09/2015 Analyzed: 03/09/2015					
Specific Conductance (EC)	0.0924		mmhos/cm		0.0898			2.85	25	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in 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 15, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Jacobucci Gas Unit 1

Project Number - [none]

Attached are your analytical results for KMG - Jacobucci Gas Unit 1 received by Origins Laboratory, Inc. March 13, 2015. This project is associated with Origins project number X503167-01.

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

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02 @ 10	X503167-01	Soil	March 13, 2015 14:07	03/13/2015 15:45
W02 @ 10	X503167-02	Soil	March 13, 2015 14:10	03/13/2015 15:45
N02 @ 10	X503167-03	Soil	March 13, 2015 14:13	03/13/2015 15:45
B02 @ 15	X503167-04	Soil	March 13, 2015 14:15	03/13/2015 15:45

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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSO3167 Client: Tasman
 Client Project ID: Jacobucci Paul Gas Unit 1
 Checklist Completed by: Jeff Smith Shipped Via: Pick up
 Date/time completed: 3/13/12 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NA
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 1 15.7 °C 1 °C 1 °C (Describe) °C
 Thermometer ID: J603

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			PH
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 Na ₂ SO 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)

03-13-12/1659
 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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

E02 @ 10
 3/13/2015 2:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503167-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	610	50	mg/kg	1	5C13005	03/13/2015	03/13/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

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

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	421	5.00	mg/kg	25	5C13013	03/13/2015	03/14/2015	
Benzene	0.146	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	5.23	0.050	"	"	"	"	"	
Xylenes, total	17.5	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " 03/14/2015
Surrogate: Toluene-d8 91.1 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.05		pH Units	1	5C13007	03/13/2015	03/13/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0424		mmhos/cm	"	5C13008	03/13/2015	03/13/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

W02 @ 10
 3/13/2015 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503167-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	380	50	mg/kg	1	5C13005	03/13/2015	03/13/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 73.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	448	5.00	mg/kg	25	5C13013	03/13/2015	03/14/2015	
Benzene	0.512	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	5.74	0.050	"	"	"	"	"	
Xylenes, total	76.2	0.498	"	250	"	"	03/14/2015	

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "

Surrogate: Toluene-d8 89.8 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.98		pH Units	1	5C13007	03/13/2015	03/13/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.142		mmhos/cm	"	5C13008	03/13/2015	03/13/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

N02 @ 10
 3/13/2015 2:13:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503167-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	760	50	mg/kg	1	5C13005	03/13/2015	03/13/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

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

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	387	5.00	mg/kg	25	5C13013	03/13/2015	03/14/2015	
Benzene	0.085	0.050	"	"	"	"	"	
Toluene	0.070	0.050	"	"	"	"	"	
Ethylbenzene	4.15	0.050	"	"	"	"	"	
Xylenes, total	15.7	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.9 % 70-130 " " 03/14/2015

Surrogate: Toluene-d8 88.2 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.15		pH Units	1	5C13007	03/13/2015	03/13/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0874		mmhos/cm	"	5C13008	03/13/2015	03/13/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

B02 @ 15
 3/13/2015 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503167-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	260	50	mg/kg	1	5C13005	03/13/2015	03/13/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 64.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	150	5.00	mg/kg	25	5C13013	03/13/2015	03/14/2015	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.118	0.050	"	"	"	"	"	
Xylenes, total	1.98	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 98.2 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.12		pH Units	1	5C13007	03/13/2015	03/13/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0814		mmhos/cm	"	5C13008	03/13/2015	03/13/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C13013 - EPA 5030 (soil)

Blank (5C13013-BLK1)

Prepared: 03/13/2015 Analyzed: 03/14/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>62.2</i>		<i>ug/kg</i>	<i>62.5</i>		<i>99.6</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>60.3</i>		<i>"</i>	<i>62.5</i>		<i>96.4</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>66.7</i>		<i>"</i>	<i>62.5</i>		<i>107</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.

Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C13013 - EPA 5030 (soil)

LCS (5C13013-BS1)

Prepared: 03/13/2015 Analyzed: 03/14/2015

Benzene	0.091	0.002	mg/kg	0.100		90.9	77.1-124			
Toluene	0.097	0.002	"	0.100		97.4	74.5-128			
Ethylbenzene	0.098	0.002	"	0.100		97.6	66.4-127			
m,p-Xylene	0.200	0.004	"	0.200		100	76.6-124			
o-Xylene	0.100	0.002	"	0.100		100	76.6-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61.4</i>		<i>ug/kg</i>	<i>62.5</i>		<i>98.3</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>63.4</i>		<i>"</i>	<i>62.5</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>63.7</i>		<i>"</i>	<i>62.5</i>		<i>102</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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C13013 - EPA 5030 (soil)

Matrix Spike (5C13013-MS1)	Source: X503168-01			Prepared: 03/13/2015 Analyzed: 03/14/2015				QM-07
Benzene	0.033	0.002	mg/kg	0.100	ND	32.5	71.8-126	
Toluene	0.032	0.002	"	0.100	ND	32.0	65.1-130	
Ethylbenzene	0.034	0.002	"	0.100	ND	34.4	62.2-130	
m,p-Xylene	0.073	0.004	"	0.200	ND	36.5	46.5-137	
o-Xylene	0.037	0.002	"	0.100	ND	37.2	54.2-134	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>72.6</i>		<i>ug/kg</i>	<i>62.5</i>		<i>116</i>	<i>70-130</i>	
<i>Surrogate: Toluene-d8</i>	<i>62.4</i>		<i>"</i>	<i>62.5</i>		<i>99.9</i>	<i>70-130</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>62.3</i>		<i>"</i>	<i>62.5</i>		<i>99.6</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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C13013 - EPA 5030 (soil)

Matrix Spike Dup (5C13013-MSD1)	Source: X503168-01		Prepared: 03/13/2015 Analyzed: 03/14/2015				QM-07		
Benzene	0.075	0.002	mg/kg	0.100	ND	75.0	71.8-126	78.9	11.3
Toluene	0.075	0.002	"	0.100	ND	74.6	65.1-130	79.8	15.4
Ethylbenzene	0.073	0.002	"	0.100	ND	73.1	62.2-130	72.1	19.6
m,p-Xylene	0.154	0.004	"	0.200	ND	76.8	46.5-137	71.0	19.2
o-Xylene	0.076	0.002	"	0.100	ND	76.4	54.2-134	69.0	17.9
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>73.9</i>		<i>ug/kg</i>	<i>62.5</i>		<i>118</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>	<i>64.3</i>		<i>"</i>	<i>62.5</i>		<i>103</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>67.0</i>		<i>"</i>	<i>62.5</i>		<i>107</i>	<i>70-130</i>		

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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 5C13005 - EPA 3580

Blank (5C13005-BLK1)

Prepared: 03/13/2015 Analyzed: 03/13/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
<i>Surrogate: o-Terphenyl</i>	41		"	50.0		81.6	59-131			

LCS (5C13005-BS1)

Prepared: 03/13/2015 Analyzed: 03/13/2015

Diesel (C10-C28)	920	50	mg/kg	1000		91.9	64-121			
Residual Range Organics (C28-C36)	640	200	"	1000		63.6	58-124			
<i>Surrogate: o-Terphenyl</i>	44		"	50.0		87.9	59-131			

Matrix Spike (5C13005-MS1)

Source: X503140-01

Prepared: 03/13/2015 Analyzed: 03/13/2015

Diesel (C10-C28)	760	50	mg/kg	1000	17	74.1	53-125			
Residual Range Organics (C28-C36)	530	200	"	1000	ND	52.8	47-133			
<i>Surrogate: o-Terphenyl</i>	34		"	50.0		67.4	59-131			

Matrix Spike Dup (5C13005-MSD1)

Source: X503140-01

Prepared: 03/13/2015 Analyzed: 03/13/2015

Diesel (C10-C28)	860	50	mg/kg	1000	17	84.6	53-125	13.0	20	
Residual Range Organics (C28-C36)	600	200	"	1000	ND	60.0	47-133	12.7	20	
<i>Surrogate: o-Terphenyl</i>	37		"	50.0		73.1	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C13007 - NO PREP										
Duplicate (5C13007-DUP1)		Source: X503131-01			Prepared: 03/13/2015 Analyzed: 03/13/2015					
pH	9.40		pH Units		9.35			0.533	25	
Batch 5C13008 - NO PREP										
Blank (5C13008-BLK1)		Prepared: 03/13/2015 Analyzed: 03/13/2015								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (5C13008-DUP1)		Source: X503131-01			Prepared: 03/13/2015 Analyzed: 03/13/2015					
Specific Conductance (EC)	1.58		mmhos/cm		1.58			0.569	25	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

Notes and Definitions

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

March 22, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Paul Jacobucci Gas Unit 1 Project Number - [none]

Attached are your analytical results for KMG - Paul Jacobucci Gas Unit 1 received by Origins Laboratory, Inc. March 20, 2015. This project is associated with Origins project number X503259-01.

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

Christine Wasko
Project Number: [none]
Project: KMG - Paul Jacobucci Gas Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W03 @ 10	X503259-01	Soil	March 20, 2015 15:25	03/20/2015 16:50
N03 @ 10	X503259-02	Soil	March 20, 2015 15:27	03/20/2015 16:50
N04 @ 10	X503259-03	Soil	March 20, 2015 15:30	03/20/2015 16:50

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSO3259

Client: Tasman
 Client Project ID: Paul Jacobucci Gas

Checklist Completed by: Jeff Smith
 Date/time completed: 3/20/13

Shipped Via: Pick Up
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.2 °C 1 °C 1 °C (Describe) 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⁾ ?	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)		/		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		/		
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	X			PH
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			/	
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] / 3/20/13
 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

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

W03 @ 10
 3/20/2015 3:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503259-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C20014	03/20/2015	03/20/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 68.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.890	0.200	mg/kg	1	5C20015	03/20/2015	03/20/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.4 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.2 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.39		pH Units	1	5C20012	03/20/2015	03/20/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.292		mmhos/cm	"	5C20013	03/20/2015	03/20/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

N03 @ 10
 3/20/2015 3:27:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503259-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C20014	03/20/2015	03/20/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 70.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.380	0.200	mg/kg	1	5C20015	03/20/2015	03/20/2015	
Benzene	ND	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 98.4 % 70-130 " " "
Surrogate: Toluene-d8 98.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.35		pH Units	1	5C20012	03/20/2015	03/20/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.198		mmhos/cm	"	5C20013	03/20/2015	03/20/2015	
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Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

N04 @ 10
 3/20/2015 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X503259-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	52	50	mg/kg	1	5C20014	03/20/2015	03/20/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 67.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	41.3	5.00	mg/kg	25	5C20015	03/20/2015	03/22/2015	
Benzene	ND	0.002	"	1	"	"	03/20/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "

Surrogate: Toluene-d8 105 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 112 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.07		pH Units	1	5C20012	03/20/2015	03/20/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.190		mmhos/cm	"	5C20013	03/20/2015	03/20/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C20015 - EPA 5030 (soil)

Blank (5C20015-BLK1)

Prepared: 03/20/2015 Analyzed: 03/20/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>66.7</i>		<i>ug/kg</i>	<i>62.5</i>		<i>107</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>68.8</i>		<i>"</i>	<i>62.5</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>59.7</i>		<i>"</i>	<i>62.5</i>		<i>95.5</i>	<i>70-130</i>			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C20015 - EPA 5030 (soil)

LCS (5C20015-BS1)

Prepared: 03/20/2015 Analyzed: 03/20/2015

Benzene	0.096	0.002	mg/kg	0.100		96.0	77.1-124			
Toluene	0.098	0.002	"	0.100		97.7	74.5-128			
Ethylbenzene	0.095	0.002	"	0.100		95.3	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.3	76.6-124			
o-Xylene	0.098	0.002	"	0.100		98.0	76.6-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>65.1</i>		<i>ug/kg</i>	<i>62.5</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>64.9</i>		<i>"</i>	<i>62.5</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>59.5</i>		<i>"</i>	<i>62.5</i>		<i>95.2</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

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C20015 - EPA 5030 (soil)

Matrix Spike (5C20015-MS1)	Source: X503259-01			Prepared: 03/20/2015 Analyzed: 03/20/2015						
Benzene	0.097	0.002	mg/kg	0.100	ND	96.8	71.8-126			
Toluene	0.097	0.002	"	0.100	ND	96.7	65.1-130			
Ethylbenzene	0.097	0.002	"	0.100	ND	97.0	62.2-130			
m,p-Xylene	0.194	0.004	"	0.200	ND	97.0	46.5-137			
o-Xylene	0.092	0.002	"	0.100	ND	91.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66.0		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	64.5		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	57.2		"	62.5		91.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C20015 - EPA 5030 (soil)

Matrix Spike Dup (5C20015-MSD1)	Source: X503259-01			Prepared: 03/20/2015 Analyzed: 03/20/2015						
Benzene	0.086	0.002	mg/kg	0.100	ND	86.4	71.8-126	11.4	11.3	QM-07
Toluene	0.090	0.002	"	0.100	ND	90.2	65.1-130	6.95	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.1	62.2-130	5.22	19.6	
m,p-Xylene	0.184	0.004	"	0.200	ND	92.1	46.5-137	5.22	19.2	
o-Xylene	0.091	0.002	"	0.100	ND	91.2	54.2-134	0.743	17.9	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61.5</i>		<i>ug/kg</i>	<i>62.5</i>		<i>98.4</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>63.1</i>		<i>"</i>	<i>62.5</i>		<i>101</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>60.1</i>		<i>"</i>	<i>62.5</i>		<i>96.1</i>	<i>70-130</i>			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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 5C20014 - EPA 3580

Blank (5C20014-BLK1)

Prepared: 03/20/2015 Analyzed: 03/20/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
<i>Surrogate: o-Terphenyl</i>	41		"	50.0		81.4	59-131			

LCS (5C20014-BS1)

Prepared: 03/20/2015 Analyzed: 03/20/2015

Diesel (C10-C28)	730	50	mg/kg	1000		73.3	64-121			
Residual Range Organics (C28-C36)	740	200	"	1000		74.2	58-124			
<i>Surrogate: o-Terphenyl</i>	36		"	50.0		71.3	59-131			

Matrix Spike (5C20014-MS1)

Source: X503259-01

Prepared: 03/20/2015 Analyzed: 03/20/2015

Diesel (C10-C28)	890	50	mg/kg	1000	18	86.9	53-125			
Residual Range Organics (C28-C36)	590	200	"	1000	ND	59.1	47-133			
<i>Surrogate: o-Terphenyl</i>	42		"	50.0		83.5	59-131			

Matrix Spike Dup (5C20014-MSD1)

Source: X503259-01

Prepared: 03/20/2015 Analyzed: 03/20/2015

Diesel (C10-C28)	830	50	mg/kg	1000	18	80.9	53-125	6.99	20	
Residual Range Organics (C28-C36)	550	200	"	1000	ND	55.3	47-133	6.61	20	
<i>Surrogate: o-Terphenyl</i>	39		"	50.0		77.8	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Paul Jacobucci Gas Unit 1

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C20012 - NO PREP										
Duplicate (5C20012-DUP1)		Source: X503259-01			Prepared: 03/20/2015 Analyzed: 03/20/2015					
pH	8.31		pH Units		8.39			0.958	25	
Batch 5C20013 - NO PREP										
Blank (5C20013-BLK1)		Prepared: 03/20/2015 Analyzed: 03/20/2015								
Specific Conductance (EC)	0.00340		mmhos/cm							
Duplicate (5C20013-DUP1)		Source: X503259-01			Prepared: 03/20/2015 Analyzed: 03/20/2015					
Specific Conductance (EC)	0.305		mmhos/cm		0.292			4.36	25	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Paul Jacobucci Gas Unit 1

Notes and Definitions

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

March 24, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Jacobucci Gas Unit 1

Project Number - [none]

Attached are your analytical results for KMG - Jacobucci Gas Unit 1 received by Origins Laboratory, Inc. March 23, 2015. This project is associated with Origins project number X503281-01.

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

Christine Wasko
Project Number: [none]
Project: KMG - Jacobucci Gas Unit 1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E03 @ 10'	X503281-01	Soil	March 23, 2015 14:00	03/23/2015 16:00
B03 @ 15'	X503281-02	Soil	March 23, 2015 14:05	03/23/2015 16:00

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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS03281

Client: Tasman
 Client Project ID: Jacobucci Paul Gas Unit 1

Checklist Completed by: Jeff Smith
 Date/time completed: 3/23/15

Shipped Via: Pick Up
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.6 °C 1 / _____ °C 1 / _____ °C (Describe) 1 / _____ °C

Thermometer ID: TR03

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"/>			PH
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.

J. Wasko
 Reviewed by (Project Manager)

3/23/15 2345
 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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

E03 @ 10'
3/23/2015 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503281-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5C23010	03/23/2015	03/23/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 69.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	5C23018	03/23/2015	03/23/2015	
Benzene	ND	0.002	"	1	"	"	03/23/2015	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	ND	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 106 % 70-130 " " "
Surrogate: Toluene-d8 107 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 96.9 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.67		pH Units	1	5C23019	03/23/2015	03/23/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.288		mmhos/cm	"	5C23020	"	03/23/2015	
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Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

B03 @ 15'
3/23/2015 2:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X503281-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	99	50	mg/kg	1	5C23010	03/23/2015	03/23/2015	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: *o*-Terphenyl 66.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	33.6	5.00	mg/kg	25	5C23018	03/23/2015	03/24/2015	
Benzene	ND	0.050	"	"	"	"	03/23/2015	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.1 % 70-130 " " "
 Surrogate: Toluene-d8 101 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 96.7 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.89		pH Units	1	5C23019	03/23/2015	03/23/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0752		mmhos/cm	"	5C23020	"	03/23/2015	
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Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C23018 - EPA 5030 (soil)

Blank (5C23018-BLK1)

Prepared: 03/23/2015 Analyzed: 03/23/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	64.8		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	62.7		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63.3		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C23018 - EPA 5030 (soil)

LCS (5C23018-BS1)

Prepared: 03/23/2015 Analyzed: 03/23/2015

Benzene	0.093	0.002	mg/kg	0.100		93.2	77.1-124			
Toluene	0.103	0.002	"	0.100		103	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.216	0.004	"	0.200		108	76.6-124			
o-Xylene	0.104	0.002	"	0.100		104	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	76.7		ug/kg	62.5		123	70-130			
Surrogate: Toluene-d8	68.1		"	62.5		109	70-130			
Surrogate: 4-Bromofluorobenzene	58.0		"	62.5		92.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C23018 - EPA 5030 (soil)

Matrix Spike (5C23018-MS1)	Source: X503281-01			Prepared: 03/23/2015 Analyzed: 03/23/2015						
Benzene	0.095	0.002	mg/kg	0.100	ND	95.4	71.8-126			
Toluene	0.109	0.002	"	0.100	ND	109	65.1-130			
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130			
m,p-Xylene	0.202	0.004	"	0.200	ND	101	46.5-137			
o-Xylene	0.102	0.002	"	0.100	ND	102	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	64.3		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	61.7		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	60.4		"	62.5		96.6	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5C23018 - EPA 5030 (soil)

Matrix Spike Dup (5C23018-MSD1)	Source: X503281-01			Prepared: 03/23/2015 Analyzed: 03/23/2015						
Benzene	0.097	0.002	mg/kg	0.100	ND	97.5	71.8-126	2.18	11.3	
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130	5.05	15.4	
Ethylbenzene	0.100	0.002	"	0.100	ND	100	62.2-130	0.814	19.6	
m,p-Xylene	0.201	0.004	"	0.200	ND	100	46.5-137	0.804	19.2	
o-Xylene	0.095	0.002	"	0.100	ND	94.5	54.2-134	7.18	17.9	
Surrogate: 1,2-Dichloroethane-d4	67.4		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	65.1		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	58.6		"	62.5		93.7	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

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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 5C23010 - EPA 3580

Blank (5C23010-BLK1)

Prepared: 03/23/2015 Analyzed: 03/23/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	43		"	50.0		86.0	59-131			

LCS (5C23010-BS1)

Prepared: 03/23/2015 Analyzed: 03/23/2015

Diesel (C10-C28)	760	50	mg/kg	1000		76.3	64-121			
Residual Range Organics (C28-C36)	810	200	"	1000		81.4	58-124			
Surrogate: o-Terphenyl	40		"	50.0		80.2	59-131			

Matrix Spike (5C23010-MS1)

Source: X503271-02

Prepared: 03/23/2015 Analyzed: 03/23/2015

Diesel (C10-C28)	900	50	mg/kg	1000	19	88.1	53-125			
Residual Range Organics (C28-C36)	960	200	"	1000	ND	96.0	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.0	59-131			

Matrix Spike Dup (5C23010-MSD1)

Source: X503271-02

Prepared: 03/23/2015 Analyzed: 03/23/2015

Diesel (C10-C28)	880	50	mg/kg	1000	19	86.3	53-125	2.03	20	
Residual Range Organics (C28-C36)	980	200	"	1000	ND	98.5	47-133	2.55	20	
Surrogate: o-Terphenyl	40		"	50.0		79.0	59-131			

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Christine Wasko
 Project Number: [none]
 Project: KMG - Jacobucci Gas Unit 1

Classical Chemistry Parameters - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5C23019 - NO PREP										
Duplicate (5C23019-DUP1)		Source: X503281-01			Prepared: 03/23/2015 Analyzed: 03/23/2015					
pH	8.66		pH Units		8.67			0.115	25	
Batch 5C23020 - NO PREP										
Blank (5C23020-BLK1)					Prepared: 03/23/2015 Analyzed: 03/23/2015					
Specific Conductance (EC)	0.00260		mmhos/cm							
Duplicate (5C23020-DUP1)		Source: X503281-01			Prepared: 03/23/2015 Analyzed: 03/23/2015					
Specific Conductance (EC)	0.295		mmhos/cm		0.288			2.40	25	

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Christine Wasko
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Project: KMG - Jacobucci Gas Unit 1

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini For Noelle Doyle Mathis, President