

April 02, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Klein 1-30J**Project Number - [none]**

Attached are your analytical results for KMG - Klein 1-30J received by Origins Laboratory, Inc. April 01, 2019. This project is associated with Origins project number Y904024-01.

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 - Klein 1-30J

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@3.5'	Y904024-01	Soil	April 1, 2019 14:55	04/01/2019 17:00
E01@3.5'	Y904024-02	Soil	April 1, 2019 14:59	04/01/2019 17:00
W01@3.5'	Y904024-03	Soil	April 1, 2019 15:03	04/01/2019 17:00
S01@3.5'	Y904024-04	Soil	April 1, 2019 15:10	04/01/2019 17:00
B01@5'	Y904024-05	Soil	April 1, 2019 15:25	04/01/2019 17:00
GW01	Y904024-06	Water	April 1, 2019 15:34	04/01/2019 17:00

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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page 1 of 1

ORIGINS
LABORATORY, INC

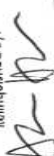
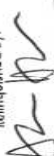
1-201024

Project Manager:	Robert Gomez
Project Name:	Klein 1-303
Project Number:	
Samples Collected By:	Zander Hamilton

Client: APC/ Tasman Geosciences
Address: 6899 Pecos Street, Denver, CO

Telephone Number: 970-927-0393

Email Address: RCorneiz@tasman-gro.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other			
N01035'	4/1/14	2:55	2	X					X			BTEX+N C P H BTEX	1	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 40 Hr <input checked="" type="checkbox"/> Standard
E01035'		2:59										X	2	
W01035'		3:03										X	3	
S01035'		3:10										X	4	
B0105'		3:25										X	5	
W01		3:34	3	X					X			X	6	
B0106"		3:40	1	X					X				7	
													8	
													9	
													10	
Relinquished By:  Date: 4/1/14 Time: 1700													Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 40 Hr <input checked="" type="checkbox"/> Standard	
Relinquished By:  Date: 4/1/14 Time: 1700														

Date Results Needed

2.4.

Origins Laboratory, Inc.

Jose Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 794024

Client: Tasman

Client Project ID: KMG - Klein 1-30J

Checklist Completed by: Dan La

Shipped Via: HD

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

Date/time completed: 4-1-19

Airbill #: NA

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

Cooler Number/Temperature: 1 4.8 °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"/>	<input checked="" type="checkbox"/>		pit
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"/>	<input checked="" type="checkbox"/>	NO
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) _____

4-1-19
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

N01@3.5'

4/1/2019 2:55:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904024-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	548	25.0	mg/kg	1	B9D0105	JTD	04/01/2019	04/02/2019
Residual Range Organics (C28-C40)	245	100	"	"	"	JTD	"	"

Surrogate: o-Terphenyl 69.8 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	111	5.00	mg/kg	25	B9D0104	JTD	04/01/2019	04/01/2019
Benzene	0.152	0.050	"	"	"	JTD	"	"
Toluene	ND	0.050	"	"	"	JTD	"	" U
Ethylbenzene	0.151	0.050	"	"	"	JTD	"	"
Xylenes, total	0.174	0.050	"	"	"	JTD	"	"
Naphthalene	0.384	0.200	"	"	"	JTD	"	"

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 98.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 112 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.86	pH Units	1	B9D0111	OLAB	04/01/2019	04/01/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0934	0.00500	mmhos/cm	"	B9D0112	OLAB	04/01/2019	"
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

E01@3.5'

4/1/2019 2:59:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904024-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	482	25.0	mg/kg	1	B9D0105	JTD	04/01/2019	04/02/2019	
Residual Range Organics (C28-C40)	436	100	"	"	"	JTD	"	"	

Surrogate: o-Terphenyl 85.9 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	10.2	5.00	mg/kg	25	B9D0104	JTD	04/01/2019	04/01/2019	
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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 96.9 % 70-130 " " "
Surrogate: Toluene-d8 98.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.4 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.20		pH Units	1	B9D0111	OLAB	04/01/2019	04/01/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0502	0.00500	mmhos/cm	"	B9D0112	OLAB	04/01/2019	"	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

W01@3.5'

4/1/2019 3:03:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904024-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	298	25.0	mg/kg	1	B9D0105	JTD	04/01/2019	04/02/2019	
Residual Range Organics (C28-C40)	283	100	"	"	"	JTD	"	"	

Surrogate: o-Terphenyl 68.7 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	8.00	5.00	mg/kg	25	B9D0104	JTD	04/01/2019	04/01/2019	
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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.7 % 70-130 " " "
Surrogate: Toluene-d8 96.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.2 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.86	pH Units	1	B9D0111	OLAB	04/01/2019	04/01/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.129	0.00500	mmhos/cm	"	B9D0112	OLAB	04/01/2019	"
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

S01@3.5'

4/1/2019 3:10:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904024-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	1010	25.0	mg/kg	1	B9D0105	JTD	04/01/2019	04/02/2019	
Residual Range Organics (C28-C40)	587	100	"	"	"	JTD	"	"	

Surrogate: o-Terphenyl 90.3 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	106	5.00	mg/kg	25	B9D0104	JTD	04/01/2019	04/01/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	0.106	0.050	"	"	"	JTD	"	"	
Xylenes, total	0.383	0.050	"	"	"	JTD	"	"	
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

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

pH in Soil by EPA 9045D

pH	7.83		pH Units	1	B9D0111	OLAB	04/01/2019	04/01/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.151	0.00500	mmhos/cm	"	B9D0112	OLAB	04/01/2019	"	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

B01@5'

4/1/2019 3:25:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904024-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	2450	25.0	mg/kg	1	B9D0105	JTD	04/01/2019	04/02/2019	
Residual Range Organics (C28-C40)	1280	100	"	"	"	JTD	"	"	

Surrogate: o-Terphenyl 88.7 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	67.2	5.00	mg/kg	25	B9D0104	JTD	04/01/2019	04/02/2019	
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
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 97.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 111 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.21		pH Units	1	B9D0111	OLAB	04/01/2019	04/01/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0783	0.00500	mmhos/cm	"	B9D0112	OLAB	04/01/2019	"	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

GW01

4/1/2019 3:34:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904024-06 (Water)

BTEX by EPA 8260D

Benzene	8.84	4.00	ug/L	4	B9D0107	JTD	04/01/2019	04/01/2019	
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	4.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	4.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.4 %	70-130			"	"	"
Surrogate: Toluene-d8	100 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
Blank (B9D0104-BLK1)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
Blank (B9D0104-BLK2)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
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
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
LCS (B9D0104-BS1)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.095	0.002	mg/kg	0.100		94.6	70-130			
Toluene	0.094	0.002	"	0.100		94.4	70-130			
Ethylbenzene	0.099	0.002	"	0.100		99.2	70-130			
m,p-Xylene	0.198	0.004	"	0.200		99.0	70-130			
o-Xylene	0.103	0.002	"	0.100		103	70-130			
Naphthalene	0.112	0.008	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.6	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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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
LCS (B9D0104-BS2)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.098	0.002	mg/kg	0.100		98.1	70-130			
Toluene	0.097	0.002	"	0.100		96.9	70-130			
Ethylbenzene	0.102	0.002	"	0.100		102	70-130			
m,p-Xylene	0.203	0.004	"	0.200		101	70-130			
o-Xylene	0.104	0.002	"	0.100		104	70-130			
Naphthalene	0.110	0.008	"	0.100		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
Matrix Spike (B9D0104-MS1)		Source: Y903456-05			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.088	0.002	mg/kg	0.100	ND	88.4	70-130			
Toluene	0.087	0.002	"	0.100	ND	86.6	70-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	89.6	70-130			
m,p-Xylene	0.181	0.004	"	0.200	ND	90.3	70-130			
o-Xylene	0.094	0.002	"	0.100	ND	94.4	70-130			
Naphthalene	0.095	0.008	"	0.100	ND	94.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Jen Pellegrini, Project Manager

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0104 - EPA 5030 (soil)

Matrix Spike (B9D0104-MS2)		Source: Y903456-07			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.3	70-130			
Toluene	0.090	0.002	"	0.100	ND	89.7	70-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	92.3	70-130			
m,p-Xylene	0.185	0.004	"	0.200	ND	92.7	70-130			
o-Xylene	0.098	0.002	"	0.100	ND	97.6	70-130			
Naphthalene	0.126	0.008	"	0.100	ND	126	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		113	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.2	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 - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
Matrix Spike Dup (B9D0104-MSD1)		Source: Y903456-05			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.091	0.002	mg/kg	0.100	ND	91.4	70-130	3.32	20	
Toluene	0.089	0.002	"	0.100	ND	88.8	70-130	2.55	20	
Ethylbenzene	0.091	0.002	"	0.100	ND	91.2	70-130	1.84	20	
m,p-Xylene	0.184	0.004	"	0.200	ND	91.9	70-130	1.71	20	
o-Xylene	0.096	0.002	"	0.100	ND	96.4	70-130	2.14	20	
Naphthalene	0.108	0.008	"	0.100	ND	108	70-130	13.3	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0104 - EPA 5030 (soil)										
Matrix Spike Dup (B9D0104-MSD2)		Source: Y903456-07			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.1	70-130	0.255	20	
Toluene	0.086	0.002	"	0.100	ND	86.0	70-130	4.17	20	
Ethylbenzene	0.085	0.002	"	0.100	ND	84.7	70-130	8.52	20	
m,p-Xylene	0.173	0.004	"	0.200	ND	86.4	70-130	7.11	20	
o-Xylene	0.091	0.002	"	0.100	ND	91.4	70-130	6.52	20	
Naphthalene	0.133	0.008	"	0.100	ND	133	70-130	5.48	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.16		"	0.125		125	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0105 - EPA 3550B										
Blank (B9D0105-BLK1)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		82.1	50-150			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0105 - EPA 3550B										
Blank (B9D0105-BLK2)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		76.8	50-150			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0105 - EPA 3550B										
LCS (B9D0105-BS1)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	775	50.0	mg/kg	1000		77.5	70-130			
Residual Range Organics (C28-C40)	807	200	"	1000		80.7	70-130			
Surrogate: o-Terphenyl	41		"	50.0		81.2	50-150			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0105 - EPA 3550B										
LCS (B9D0105-BS2)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	859	50.0	mg/kg	1000		85.9	70-130			
Residual Range Organics (C28-C40)	938	200	"	1000		93.8	70-130			
Surrogate: o-Terphenyl	38		"	50.0		76.8	50-150			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0105 - EPA 3550B

Matrix Spike (B9D0105-MS1)		Source: Y903420-01			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	1640	50.0	mg/kg	1000	726	91.3	70-130			
Residual Range Organics (C28-C40)	1200	200	"	1000	245	95.6	70-130			
Surrogate: o-Terphenyl	53		"	50.0		106	50-150			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0105 - EPA 3550B

Matrix Spike (B9D0105-MS2)		Source: Y904022-01			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	796	50.0	mg/kg	1000	15.9	78.0	70-130			
Residual Range Organics (C28-C40)	846	200	"	1000	ND	84.6	70-130			
Surrogate: o-Terphenyl	39		"	50.0		78.0	50-150			

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Tasman Geosciences
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Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0105 - EPA 3550B

Matrix Spike Dup (B9D0105-MSD1)		Source: Y903420-01			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	1270	50.0	mg/kg	1000	726	54.4	70-130	50.8	35	QM-07, QR-03
Residual Range Organics (C28-C40)	983	200	"	1000	245	73.8	70-130	25.7	35	
Surrogate: o-Terphenyl	42		"	50.0		83.2	50-150			

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Bob Cornez
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Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0105 - EPA 3550B

Matrix Spike Dup (B9D0105-MSD2)		Source: Y904022-01			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Diesel (C10-C28)	888	50.0	mg/kg	1000	15.9	87.3	70-130	11.2	35	
Residual Range Organics (C28-C40)	965	200	"	1000	ND	96.5	70-130	13.1	35	
Surrogate: o-Terphenyl	45		"	50.0		90.7	50-150			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0107 - EPA 5030B (Water)										
Blank (B9D0107-BLK1)					Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.8	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.0	70-130			

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Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0107 - EPA 5030B (Water)

LCS (B9D0107-BS1)

Prepared: 04/01/2019 Analyzed: 04/01/2019

Benzene	53.0	1.00	ug/L	50.0		106	70-130			
Toluene	50.5	1.00	"	50.0		101	70-130			
Ethylbenzene	48.5	1.00	"	50.0		97.0	70-130			
m,p-Xylene	98.2	2.00	"	100		98.2	70-130			
o-Xylene	49.0	1.00	"	50.0		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		93.6	70-130			
Surrogate: Toluene-d8	65		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

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Bob Cornez
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Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D0107 - EPA 5030B (Water)

Matrix Spike (B9D0107-MS1)		Source: Y903436-02			Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	54.6	1.00	ug/L	50.0	ND	109	70-130			
Toluene	51.8	1.00	"	50.0	0.100	103	70-130			
Ethylbenzene	50.9	1.00	"	50.0	0.060	102	70-130			
m,p-Xylene	104	2.00	"	100	ND	104	70-130			
o-Xylene	51.0	1.00	"	50.0	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

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Bob Cornez
Project Number: [none]
Project: KMG - Klein 1-30J

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0107 - EPA 5030B (Water)										
Matrix Spike Dup (B9D0107-MSD1)			Source: Y903436-02		Prepared: 04/01/2019 Analyzed: 04/01/2019					
Benzene	54.6	1.00	ug/L	50.0	ND	109	70-130	0.0549	20	
Toluene	51.8	1.00	"	50.0	0.100	103	70-130	0.00	20	
Ethylbenzene	51.4	1.00	"	50.0	0.060	103	70-130	0.977	20	
m,p-Xylene	104	2.00	"	100	ND	104	70-130	0.268	20	
o-Xylene	52.1	1.00	"	50.0	ND	104	70-130	2.14	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.0	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	70-130			

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Bob Cornez
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Project: KMG - Klein 1-30J

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

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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
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Batch B9D0111 - NO PREP

Duplicate (B9D0111-DUP1)

Source: Y904024-01

Prepared: 04/01/2019 Analyzed: 04/01/2019

pH	7.60		pH Units	7.86		3.36	25
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Batch B9D0112 - NO PREP

Blank (B9D0112-BLK1)

Prepared: 04/01/2019 Analyzed: 04/01/2019

Specific Conductance (EC)	0.00180	0.00500	mmhos/cm
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Duplicate (B9D0112-DUP1)

Source: Y904024-01

Prepared: 04/01/2019 Analyzed: 04/01/2019

Specific Conductance (EC)	0.116	0.00500	mmhos/cm	0.0934		21.4	25
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Jen Pellegrini, Project Manager

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Klein 1-30J

Notes and Definitions

U Sample is Non-Detect.

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

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.

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