



November 01, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Olin L 17-25

Project Number - [none]

Attached are your analytical results for KMG - Olin L 17-25 received by Origins Laboratory, Inc. October 31, 2017. This project is associated with Origins project number Y710467-05.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Olin L 17-25

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|------------------------|------------------|
| B01@6' | Y710467-05 | Soil | October 31, 2017 13:55 | 10/31/2017 17:22 |

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

www.originslaboratory.com

page 1 of 1

710417

ORIGINS
 LABORATORY, INC

Client: AGC Project Manager/Send Report To: Bob Cornez
 Address: _____ Email Address: lucinez@tasman-geo.com
 Project Name/Number: Olin L 17-25
 Telephone Number: _____ Samples Collected By: Alex Chapin

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

| Sample ID Description | Date Sampled | Time Sampled | # of Containers | Preservative | | | | Matrix | | | Analysis/Method | | | Sample Instructions | Turnaround Time: <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr Standard <input type="checkbox"/> | |
|-----------------------------|-----------------------|-------------------|--------------------|-----------------------|-------------------|--|-------|-------------|------|------------|-----------------|---------------|----------------|---------------------|--|-----|
| | | | | Unpreserved | HCl | HNO ₃ | Other | Groundwater | Soil | Air Sample | Other | GDTEA E260 | GeoPro E815 | | | EAH |
| N01@5' | 10/31/17 | 1400 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| S01@5' | 10/31/17 | 1415 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| F01@5' | 10/31/17 | 1410 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| M01@5' | 10/31/17 | 1405 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| B01@6' | 10/31/17 | 1355 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| B601@6" | 10/31/17 | 1350 | 2 | X | | | | | X | | | X | X | | ON HOLD | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Relinquished By: <u>AGC</u> | Date: <u>10/31/17</u> | Time: <u>1122</u> | Received By: _____ | Date: <u>10-31-17</u> | Time: <u>1722</u> | Turnaround Time: <input checked="" type="checkbox"/> Same Day | | | | | | | | | | |
| Relinquished By: _____ | Date: _____ | Time: _____ | Received By: _____ | Date: _____ | Time: _____ | Turnaround Time: <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr Standard <input type="checkbox"/> | | | | | | | | | | |

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y710467 Client: Tasman
 Client Project ID: KMG - Olin L 17-25
 Checklist Completed by: DM Shipped Via: FD
 Date/time completed: 10-31-17 1742 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 37 °C _____ °C _____ °C (Describe) _____ °C
 Thermometer ID: 6023

| 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"/> | | | PA |
| Is a chain-of-custody (COC) present and filled out completely ^{(1)?} | <input checked="" type="checkbox"/> | | | |
| Does the COC agree with the number and type of sample bottles received ^{(1)?} | <input checked="" type="checkbox"/> | | | |
| Do the sample IDs on the bottle labels match the COC ^{(1)?} | <input checked="" type="checkbox"/> | | | |
| Is the COC properly relinquished by the client with date and time recorded ^{(1)?} | <input checked="" type="checkbox"/> | | | |
| For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative. | | | <input checked="" type="checkbox"/> | |
| Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH) | | <input checked="" type="checkbox"/> | | |
| Additional Comments (if any): | | | | |

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

Reviewed by: [Signature] Date/Time Reviewed: 10-31-17 1743

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

B01@6'
10/31/2017 1:55:00PM

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

Origins Laboratory, Inc.
Y710467-05 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|----|------|-------|---|---------|------------|------------|---|
| Diesel (C10-C28) | ND | 25.0 | mg/kg | 1 | B7J3104 | 10/31/2017 | 10/31/2017 | U |
| Residual Range Organics (C28-C40) | ND | 100 | " | " | " | " | " | U |

Surrogate: o-Terphenyl 83.7 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|----|---------|------------|------------|---|
| Gasoline Range Hydrocarbons | ND | 5.00 | mg/kg | 25 | B7J3103 | 10/31/2017 | 11/01/2017 | U |
| Benzene | ND | 0.050 | " | " | " | " | " | U |
| Toluene | ND | 0.050 | " | " | " | " | " | U |
| Ethylbenzene | ND | 0.050 | " | " | " | " | " | U |
| Xylenes, total | ND | 0.050 | " | " | " | " | " | U |

Surrogate: 1,2-Dichloroethane-d4 97.9 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 8.85 | | pH Units | 1 | B7J3105 | 10/31/2017 | 10/31/2017 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|-------|--|----------|---|---------|------------|---|--|
| Specific Conductance (EC) | 0.163 | | mmhos/cm | " | B7J3106 | 10/31/2017 | " | |
|---------------------------|-------|--|----------|---|---------|------------|---|--|

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|--|--------|-----------------|-------|-------------|---|------|-------------|-----|-----------|---------|
| Batch B7J3103 - EPA 5030 (soil) | | | | | | | | | | |
| Blank (B7J3103-BLK1) | | | | | | | | | | |
| | | | | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | | | | | | | U |
| Benzene | ND | 0.002 | " | | | | | | | U |
| Toluene | ND | 0.002 | " | | | | | | | O-01, U |
| Ethylbenzene | ND | 0.002 | " | | | | | | | U |
| Xylenes, total | ND | 0.002 | " | | | | | | | U |
| Surrogate: 1,2-Dichloroethane-d4 | 77 | | ug/kg | 62.5 | | 123 | 70-130 | | | |
| Surrogate: Toluene-d8 | 59 | | " | 62.5 | | 95.1 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 64 | | " | 62.5 | | 102 | 70-130 | | | |

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7J3103 - EPA 5030 (soil)

LCS (B7J3103-BS1)

Prepared: 10/31/2017 Analyzed: 10/31/2017

| | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|--|------|----------|--|--|--|
| Benzene | 0.097 | 0.002 | mg/kg | 0.100 | | 97.1 | 77.1-124 | | | |
| Toluene | 0.091 | 0.002 | " | 0.100 | | 91.0 | 74.5-128 | | | |
| Ethylbenzene | 0.097 | 0.002 | " | 0.100 | | 96.7 | 66.4-127 | | | |
| m,p-Xylene | 0.198 | 0.004 | " | 0.200 | | 99.1 | 76.6-124 | | | |
| o-Xylene | 0.100 | 0.002 | " | 0.100 | | 99.6 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 73 | | ug/kg | 62.5 | | 117 | 70-130 | | | |
| Surrogate: Toluene-d8 | 60 | | " | 62.5 | | 96.8 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 100 | 70-130 | | | |

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7J3103 - EPA 5030 (soil)

| Matrix Spike (B7J3103-MS1) | Source: Y710386-01 | | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | | |
|-----------------------------------|---------------------------|-------|-------|--|------|----------|--|--|--|--|
| Benzene | 0.093 | 0.002 | mg/kg | 0.100 | 93.0 | 71.8-126 | | | | |
| Toluene | 0.084 | 0.002 | " | 0.100 | 83.7 | 65.1-130 | | | | |
| Ethylbenzene | 0.084 | 0.002 | " | 0.100 | 83.8 | 62.2-130 | | | | |
| m,p-Xylene | 0.166 | 0.004 | " | 0.200 | 83.2 | 46.5-137 | | | | |
| o-Xylene | 0.084 | 0.002 | " | 0.100 | 83.6 | 54.2-134 | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | ug/kg | 62.5 | 104 | 70-130 | | | | |
| Surrogate: Toluene-d8 | 62 | | " | 62.5 | 98.6 | 70-130 | | | | |
| Surrogate: 4-Bromofluorobenzene | 66 | | " | 62.5 | 106 | 70-130 | | | | |

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7J3103 - EPA 5030 (soil)

| Matrix Spike Dup (B7J3103-MSD1) | Source: Y710386-01 | | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | | |
|--|---------------------------|-------|-------|--|------|----------|------|------|--|--|
| Benzene | 0.098 | 0.002 | mg/kg | 0.100 | 97.9 | 71.8-126 | 5.11 | 11.3 | | |
| Toluene | 0.089 | 0.002 | " | 0.100 | 89.4 | 65.1-130 | 6.68 | 15.4 | | |
| Ethylbenzene | 0.087 | 0.002 | " | 0.100 | 86.9 | 62.2-130 | 3.61 | 19.6 | | |
| m,p-Xylene | 0.174 | 0.004 | " | 0.200 | 87.0 | 46.5-137 | 4.49 | 19.2 | | |
| o-Xylene | 0.088 | 0.002 | " | 0.100 | 88.4 | 54.2-134 | 5.58 | 17.9 | | |
| Surrogate: 1,2-Dichloroethane-d4 | 64 | | ug/kg | 62.5 | 103 | 70-130 | | | | |
| Surrogate: Toluene-d8 | 60 | | " | 62.5 | 96.3 | 70-130 | | | | |
| Surrogate: 4-Bromofluorobenzene | 65 | | " | 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

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

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

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B7J3104 - EPA 3550B

Blank (B7J3104-BLK1)

Prepared: 10/31/2017 Analyzed: 11/01/2017

| | | | | | | | | | | |
|-----------------------------------|----|------|-------|------|--|------|--------|--|--|---|
| Diesel (C10-C28) | ND | 50.0 | mg/kg | | | | | | | U |
| Residual Range Organics (C28-C40) | ND | 200 | " | | | | | | | U |
| Surrogate: o-Terphenyl | 33 | | " | 50.0 | | 66.8 | 59-131 | | | |

LCS (B7J3104-BS1)

Prepared: 10/31/2017 Analyzed: 10/31/2017

| | | | | | | | | | | |
|-----------------------------------|-----|------|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | 834 | 50.0 | mg/kg | 1000 | | 83.4 | 64-121 | | | |
| Residual Range Organics (C28-C40) | 858 | 200 | " | 1000 | | 85.8 | 58-124 | | | |
| Surrogate: o-Terphenyl | 47 | | " | 50.0 | | 93.7 | 59-131 | | | |

Matrix Spike (B7J3104-MS1)

Source: Y710362-01

Prepared: 10/31/2017 Analyzed: 10/31/2017

| | | | | | | | | | | |
|-----------------------------------|-----|------|-------|------|------|------|--------|--|--|--|
| Diesel (C10-C28) | 818 | 50.0 | mg/kg | 1000 | ND | 81.8 | 53-125 | | | |
| Residual Range Organics (C28-C40) | 901 | 200 | " | 1000 | 15.8 | 88.6 | 47-133 | | | |
| Surrogate: o-Terphenyl | 46 | | " | 50.0 | | 91.5 | 59-131 | | | |

Matrix Spike Dup (B7J3104-MSD1)

Source: Y710362-01

Prepared: 10/31/2017 Analyzed: 10/31/2017

| | | | | | | | | | | |
|-----------------------------------|-----|------|-------|------|------|------|--------|------|----|--|
| Diesel (C10-C28) | 769 | 50.0 | mg/kg | 1000 | ND | 76.9 | 53-125 | 6.28 | 20 | |
| Residual Range Organics (C28-C40) | 806 | 200 | " | 1000 | 15.8 | 79.0 | 47-133 | 11.4 | 20 | |
| Surrogate: o-Terphenyl | 44 | | " | 50.0 | | 88.9 | 59-131 | | | |

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: [none]
 Project: KMG - Olin L 17-25

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 B7J3105 - NO PREP | | | | | | | | | | |
| Duplicate (B7J3105-DUP1) | | Source: Y710386-01 | | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | |
| pH | 8.93 | | pH Units | | 9.49 | | | 6.08 | 25 | |
| Batch B7J3106 - NO PREP | | | | | | | | | | |
| Blank (B7J3106-BLK1) | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | | | | |
| Specific Conductance (EC) | 0.00590 | | mmhos/cm | | | | | | | |
| Duplicate (B7J3106-DUP1) | | Source: Y710386-01 | | | Prepared: 10/31/2017 Analyzed: 10/31/2017 | | | | | |
| Specific Conductance (EC) | 0.493 | | mmhos/cm | | 0.551 | | | 11.1 | 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

Bob Cornez
Project Number: [none]
Project: KMG - Olin L 17-25

Notes and Definitions

U Sample is Non-Detect.

O-01 This compound is a common laboratory contaminant.

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