

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax 894-2109

FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee: _____

Spill Complaint
 Inspection NOAV

Tracking No: _____

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe) _____

GENERAL INFORMATION

| | | | |
|---|--|--|--|
| OGCC Operator Number: <u>47120</u> | | Contact Name and Telephone | |
| Name of Operator: <u>Kerr-McGee Oil and Gas Onshore LP</u> | | Name: <u>Phillip Hamlin</u> | |
| Address: <u>P.O. Box 173779</u> | | No: <u>(970) 336-3500</u> | |
| City: <u>Denver</u> State: <u>CO</u> Zip: <u>80217-3779</u> | | Fax: <u>(970) 336-3656</u> | |
| API/Facility No: <u>318057</u> | | County: <u>Weld</u> | |
| Facility Name: <u>Lorenz-63N66W/30SWSW</u> | | Facility Number: _____ | |
| Well Name: _____ | | Well Number: _____ | |
| Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWSW Sec 30-T3N-R66W</u> | | Latitude: <u>40.191804</u> Longitude: <u>-104.824718</u> | |

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Oil, Produced Water, and Condensate

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation. Groundwater < 20 ft.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Fine to coarse grained sand, sandy clay, and clay.

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water and wetlands approximately 260' southwest, water well approximately 800' southeast, livestock approximately 20' west, building approximately 750' east, and excavation groundwater approximately 1' below ground surface (bgs).

Description of Impact (if previously provided, refer to that form or document):

| Impacted Media (check): | Extent of Impact: | How Determined: |
|---|--|--|
| <input checked="" type="checkbox"/> Soils | <u>14' N-S x 44' E-W x 4' bgs (maximum extent)</u> | <u>Collected soil samples for laboratory analysis</u> |
| <input type="checkbox"/> Vegetation | _____ | _____ |
| <input checked="" type="checkbox"/> Groundwater | <u>See attached data</u> | <u>Collected groundwater samples for laboratory analysis</u> |
| <input type="checkbox"/> Surface water | _____ | _____ |

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

During deconstruction activities at the Lorenz-63N66W/30SWSW tank battery, petroleum hydrocarbon impacted groundwater was encountered beneath the produced water sump. There were no indications that the dumlines or produced water sump were leaking. The volume of the release is unknown. The petroleum hydrocarbon impacted soil was excavated. Impacted groundwater was encountered in the excavation. A topographic Site Location Map depicting the general location of the release is provided as Figure 1.

Describe how source is to be removed:

Impacted soil was excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current water table due to past seasonal fluctuations. On November 25, 2015, four sidewall soil samples (N01@2.5', E01@2.5', S01@2.5', and W01@2.5') were collected from the excavation and submitted for laboratory analysis of total petroleum hydrocarbons (TPH) by United States Environmental Protection Agency (USEPA) Methods 8015C and 8260C, benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8260C, pH by USEPA Method 9045D, and specific conductivity (EC) by USEPA Method 9050D. Laboratory results indicated that the TPH concentration in soil sample W01@2.5' exceeded the COGCC Table 910-1 allowable level. An excavation groundwater sample (GW01) was collected for BTEX analysis. Laboratory analytical results for the GW01 groundwater sample indicated the benzene concentration exceeded the Colorado Groundwater Quality Standard (CGWQS) for benzene at a concentration of 96.8 micrograms per liter (µg/L).

On December 1, 2015, two additional excavation sidewall soil samples (N02@2.5' and S02@2.5') were collected following the removal of additional impacted soil. Laboratory analytical results indicated that TPH, BTEX, pH, and EC levels were in compliance with COGCC Table 910-1 allowable levels. Following the removal of additional impacted soil along the western sidewall of the excavation and the removal of approximately 180 barrels of impacted groundwater, the groundwater level in the excavation increased from 3 feet bgs to 1 foot bgs. On December 2, 2015, one additional excavation sidewall soil sample (W02@0.5') was collected at a depth of 0.5 feet bgs. Laboratory analytical results indicated that TPH, BTEX, pH, and EC levels were in compliance with COGCC Table 910-1 allowable levels at the excavation extent. A second groundwater sample (GW02) was collected from the excavation for BTEX analysis. Laboratory analytical results for sample GW02 indicated BTEX concentrations were in compliance with the CGWQS.

Approximately 220 cubic yards of impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. Prior to backfilling, an additional 160 barrels of groundwater were removed from the excavation and transported to a licensed injection facility. In addition, 80 pounds of COGAC[®], an activated carbon-based bioremediation product, was applied to the groundwater and clean backfill through a series of lifts to ensure distribution through the phreatic and smear zones. The general site layout, excavation dimensions, and soil and groundwater sample locations are depicted on the Excavation Site Map provided as Figure 2. The excavation soil and groundwater sample analytical results are summarized in Tables 1 and 2, respectively. The laboratory analytical reports are attached.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

The impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. The impacted groundwater was transported to a licensed injection facility for disposal.



Tracking Number: _____
 Name of Operator: _____
 OGCC Operator No: _____
 Received Date: _____
 Well Name & No: _____
 Facility Name & No.: _____

REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
 Groundwater monitoring wells will be installed at the site to fully define the extent and magnitude of the release. The monitoring wells will be surveyed to determine the groundwater flow direction. Groundwater monitoring activities will be conducted and samples will be submitted for laboratory analysis of BTEX. BTEX concentrations in the final excavation groundwater sample (GW02) were in compliance with the CGWQS. If BTEX concentrations in the monitoring well groundwater samples are in compliance with the CGWQS during the initial sampling event, Kerr-McGee will request a No Further Action status for this site. If impacts to groundwater are detected, groundwater monitoring activities will continue on a quarterly basis.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.
 The site was restored to its pre-release grade and the tank battery will be reconstructed.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.
 Is further site investigation required? Y N If yes, describe:
 After installing the monitoring wells and establishing points of compliance, groundwater monitoring will be conducted.

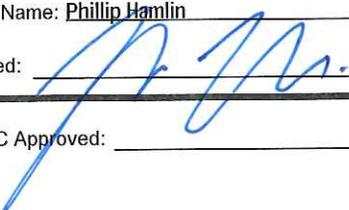
Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
 The impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. The impacted groundwater was transported to a licensed injection facility for disposal.

IMPLEMENTATION SCHEDULE

| | | |
|---|---|-----------------------------------|
| Date Site Investigation Began: 11/25/2015 | Date Site Investigation Completed: Active | Remediation Plan Submitted: _____ |
| Remediation Start Date: 11/30/2015 | Anticipated Completion Date: TBD | Actual Completion Date: _____ |

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Phillip Hamlin

Signed:  Title: Senior HSE Representative Date: 2/8/16

OGCC Approved: _____ Title: _____ Date: _____

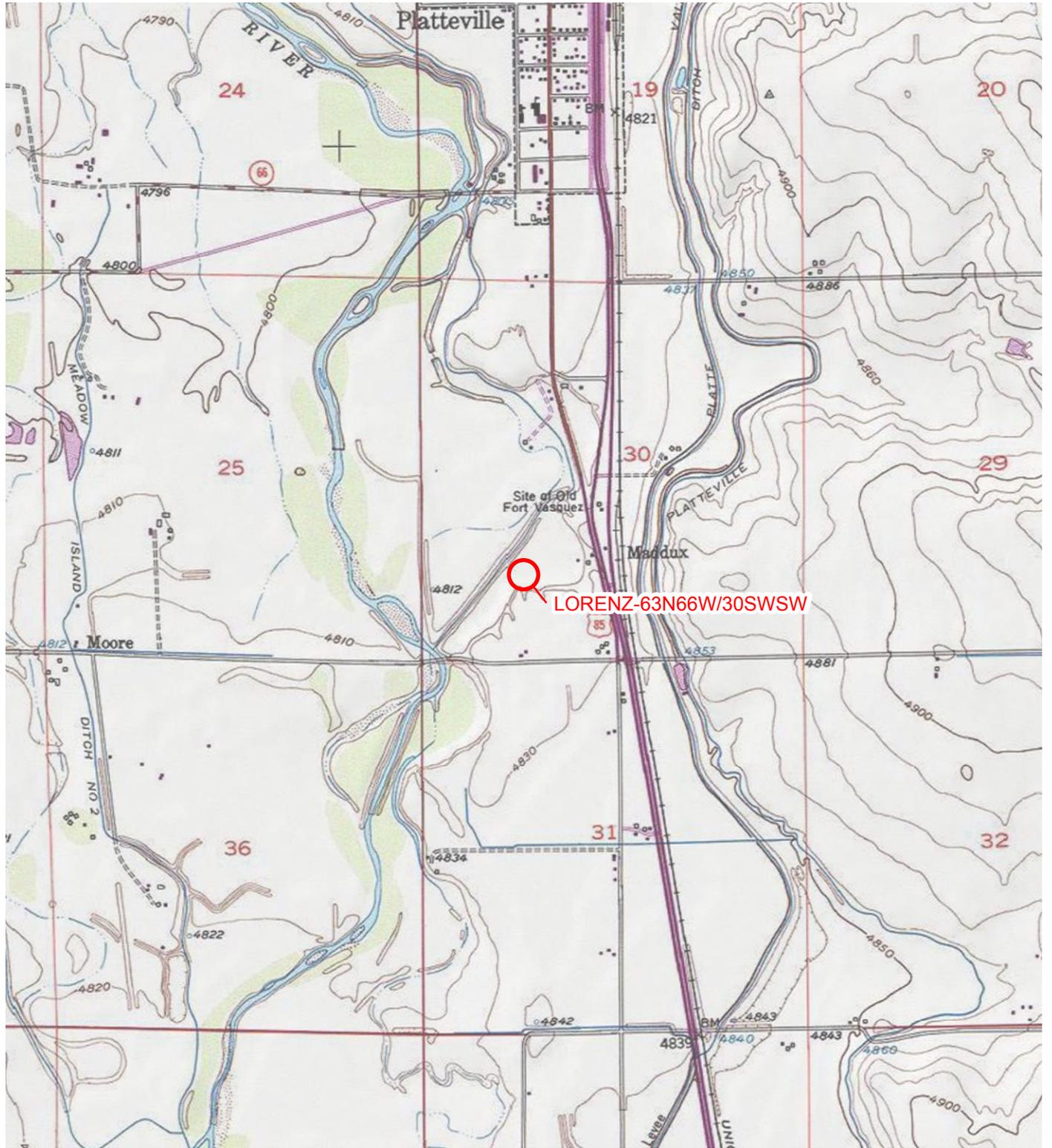


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

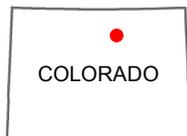
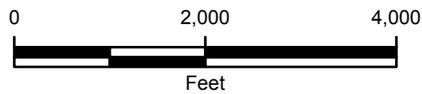


FIGURE 1
SITE LOCATION MAP
 LORENZ-63N66W/30SWSW
 SSW SEC 30-T3N-R66W
 WELD COUNTY, COLORADO
 KERR-MCGEE OIL & GAS ONSHORE LP





LEGEND

- RELEASE LOCATION
- SOIL SAMPLE
- GROUNDWATER SAMPLE
- METER HOUSE
- FORMER WELLHEAD
- EXCAVATION EXTENT
- BERM
- FORMER BERM

AST: ABOVEGROUND STORAGE TANK
 ECD: EMISSION CONTROL DEVICE

GROUNDWATER SAMPLE ID
 B: BENZENE CONCENTRATION
 ALL RESULTS IN MICROGRAMS PER LITER
BOLD INDICATES RESULT EXCEEDS STANDARD

IMAGE COURTESY OF ESRI

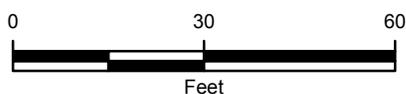


FIGURE 2
 EXCAVATION SITE MAP
 LORENZ-63N66W/30SWSW
 SWSW SEC 30-T3N-R66W
 WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP



TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
LORENZ-63N66W/30SWSW
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

| Soil Sample ID | Depth (bgs) | Date | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Total Xylenes (mg/kg) | DRO (mg/kg) | GRO (mg/kg) | ORO (mg/kg) | pH (su) | Specific Conductance (mmhos/cm) |
|-------------------------------|-------------|------------|-----------------|-----------------|----------------------|-----------------------|-------------|-------------|----------------|------------|---------------------------------|
| E01 @ 2.5' | 2.5' | 11/25/2015 | <0.002 | <0.002 | <0.002 | <0.002 | <50 | <0.200 | <200 | 8.14 | 0.0833 |
| N01 @ 2.5' | 2.5' | 11/25/2015 | <0.002 | <0.002 | 0.002 | <0.002 | <50 | 3.06 | <200 | 7.62 | 0.258 |
| S01 @ 2.5' | 2.5' | 11/25/2015 | <0.002 | <0.002 | <0.002 | <0.002 | <50 | <0.200 | <200 | 7.84 | 0.108 |
| W01 @ 2.5' | 2.5' | 11/25/2015 | <0.050 | 0.105 | 0.872 | 1.39 | 120 | 2130 | <200 | 7.70 | 0.141 |
| N02 @ 2.5' | 2.5' | 12/01/2015 | 0.002 | <0.002 | 0.012 | 0.174 | 260 | 1.24 | 160 | 8.36 | 0.0893 |
| S02 @ 2.5' | 2.5' | 12/01/2015 | 0.107 | <0.050 | 0.874 | <0.050 | 200 | 200 | <100 | 7.79 | 0.131 |
| W02 @ 0.5' | 0.5' | 12/02/2015 | <0.002 | <0.002 | <0.002 | <0.002 | <25 | <0.200 | <100 | 8.03 | 0.489 |
| COGCC Allowable Levels | | | 0.17 | 85 | 100 | 175 | 500* | 500* | 500* | 6-9 | 4 |

Notes: bgs - below ground surface
COGCC - Colorado Oil and Gas Conservation Commission
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter

NA - not analyzed/not available
ORO - oil range organics
su - standard units
* - Standard applies to combined DRO-GRO-ORO
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level



TABLE 2
GROUNDWATER ANALYTICAL AND FIELD RESULTS
LORENZ-63N66W/30SWSW
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE LP

| Well Name | Date | Benzene (µg/L) | Toluene (µg/L) | Ethylbenzene (µg/L) | Total Xylenes (µg/L) | Depth Water/ (Product Thickness) (ft bgs) |
|------------------|-------------|-----------------------|-----------------------|----------------------------|-----------------------------|--|
| GW01 | 11/25/2015 | 96.8 | 282 | 22.2 | 244 | 3.00 |
| GW02 | 12/02/2015 | 1.5 | <1.0 | 8.3 | 49.0 | 1.00 |
| CGWQS | | 5 | 1000 | 700 | 1400 | |

Notes: CGWQS - Colorado Groundwater Quality Standards
ft bgs - feet below ground surface
NA - not analyzed/not available
NM - not measured

µg/L - micrograms per liter
< - less than laboratory reporting limit
Bold indicates result exceeds allowable level
Excavation groundwater depth is approximate





November 30, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Lorenz #1

Project Number - 014215233

Attached are your analytical results for KMG - Lorenz #1 received by Origins Laboratory, Inc. November 25, 2015. This project is associated with Origins project number X511303-01.

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

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

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

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

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

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



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|------------|---------------|--------|-------------------------|------------------|
| N01 @ 2.5' | X511303-01 | Soil | November 25, 2015 12:30 | 11/25/2015 14:45 |
| E01 @ 2.5' | X511303-02 | Soil | November 25, 2015 12:35 | 11/25/2015 14:45 |
| S01 @ 2.5' | X511303-03 | Soil | November 25, 2015 12:40 | 11/25/2015 14:45 |
| W01 @ 2.5' | X511303-04 | Soil | November 25, 2015 12:45 | 11/25/2015 14:45 |
| GW01 | X511303-06 | Water | November 25, 2015 12:55 | 11/25/2015 14:45 |

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.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS11303 Client: LTE
 Client Project ID: Lorenz #1
 Checklist Completed by: Jeff Smith Shipped Via: HTD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Date/time completed: 11/25/15 Airbill #: NA
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____ (Describe)
 Cooler Number/Temperature: 1 / 45 °C _____ / _____ °C _____ / _____ °C
 Thermometer ID: 1003

| Requirement Description | Yes | No | N/A | Comments (if any) |
|---|-----|----|-----|-------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ? | 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⁾ ? | ✓ | | | |
| 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⁾ ? | ✓ | | | |
| 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. | | 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) | | T | | |
| 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) Jeff Smith Date/Time Reviewed 11/25/15

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

N01 @ 2.5'
11/25/2015 12:30:00PM

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

Origins Laboratory, Inc.
X511303-01 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | 1 | B5K2506 | 11/25/2015 | 11/27/2015 | |
| Residual Range Organics (C28-C36) | ND | 200 | " | " | " | " | " | |

Surrogate: o-Terphenyl 90.0 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|--------------|-------|-------|---|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | 3.06 | 0.200 | mg/kg | 1 | B5K2507 | 11/25/2015 | 11/25/2015 | |
| Benzene | ND | 0.002 | " | " | " | " | " | |
| Toluene | ND | 0.002 | " | " | " | " | " | |
| Ethylbenzene | 0.002 | 0.002 | " | " | " | " | " | |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 113 % 70-130 " " "
Surrogate: Toluene-d8 98.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|-------------|--|----------|---|---------|------------|------------|--|
| pH | 7.62 | | pH Units | 1 | B5K2504 | 11/25/2015 | 11/25/2015 | |
|----|-------------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|--------------|--|----------|---|---------|------------|------------|--|
| Specific Conductance (EC) | 0.258 | | mmhos/cm | " | B5K2505 | 11/25/2015 | 11/25/2015 | |
|---------------------------|--------------|--|----------|---|---------|------------|------------|--|

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

E01 @ 2.5'
11/25/2015 12:35:00PM

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

Origins Laboratory, Inc.
X511303-02 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | 1 | B5K2506 | 11/25/2015 | 11/27/2015 | |
| Residual Range Organics (C28-C36) | ND | 200 | " | " | " | " | " | |

Surrogate: o-Terphenyl 84.7 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | 1 | B5K2507 | 11/25/2015 | 11/25/2015 | |
| Benzene | ND | 0.002 | " | " | " | " | " | |
| Toluene | ND | 0.002 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.002 | " | " | " | " | " | |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " "
Surrogate: Toluene-d8 92.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 8.14 | | pH Units | 1 | B5K2504 | 11/25/2015 | 11/25/2015 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|--------|--|----------|---|---------|------------|------------|--|
| Specific Conductance (EC) | 0.0833 | | mmhos/cm | " | B5K2505 | 11/25/2015 | 11/25/2015 | |
|---------------------------|--------|--|----------|---|---------|------------|------------|--|

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

S01 @ 2.5'
11/25/2015 12:40:00PM

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

Origins Laboratory, Inc.
X511303-03 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | 1 | B5K2506 | 11/25/2015 | 11/27/2015 | |
| Residual Range Organics (C28-C36) | ND | 200 | " | " | " | " | " | |

Surrogate: o-Terphenyl 75.5 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | 1 | B5K2507 | 11/25/2015 | 11/25/2015 | |
| Benzene | ND | 0.002 | " | " | " | " | " | |
| Toluene | ND | 0.002 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.002 | " | " | " | " | " | |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 114 % 70-130 " " "
Surrogate: Toluene-d8 91.3 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 7.84 | | pH Units | 1 | B5K2504 | 11/25/2015 | 11/25/2015 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|
| Specific Conductance (EC) | 0.108 | | mmhos/cm | " | B5K2505 | 11/25/2015 | 11/25/2015 | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

W01 @ 2.5'
11/25/2015 12:45:00PM

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

Origins Laboratory, Inc.
X511303-04 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|-----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | 120 | 50 | mg/kg | 1 | B5K2506 | 11/25/2015 | 11/27/2015 | |
| Residual Range Organics (C28-C36) | ND | 200 | " | " | " | " | " | |

Surrogate: o-Terphenyl 65.9 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|-------|-------|-------|-----|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | 2130 | 50.0 | mg/kg | 250 | B5K2507 | 11/25/2015 | 11/29/2015 | |
| Benzene | ND | 0.050 | " | 25 | " | " | 11/25/2015 | |
| Toluene | 0.105 | 0.050 | " | " | " | " | " | |
| Ethylbenzene | 0.872 | 0.050 | " | " | " | " | " | |
| Xylenes, total | 1.39 | 0.050 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 114 % 70-130 " " 11/29/2015
Surrogate: Toluene-d8 128 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 113 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 7.70 | | pH Units | 1 | B5K2504 | 11/25/2015 | 11/25/2015 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|
| Specific Conductance (EC) | 0.141 | | mmhos/cm | " | B5K2505 | 11/25/2015 | 11/25/2015 | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|

Origins Laboratory, Inc.



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

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

GW01
11/25/2015 12:55:00PM

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

Origins Laboratory, Inc.
X511303-06 (Water)

BTEX by EPA 8260C

| | | | | | | | | |
|----------------------------------|-------|--------|------|---|---------|------------|------------|--|
| Benzene | 96.8 | 5.0 | ug/L | 5 | B5K2502 | 11/25/2015 | 11/25/2015 | |
| Toluene | 282 | 5.0 | " | " | " | " | " | |
| Ethylbenzene | 22.2 | 5.0 | " | " | " | " | " | |
| Xylenes, total | 244 | 5.0 | " | " | " | " | " | |
| Surrogate: 1,2-Dichloroethane-d4 | 113 % | 84-121 | | | " | " | " | |
| Surrogate: Toluene-d8 | 103 % | 85-115 | | | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | 100 % | 84-114 | | | " | " | " | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2502 - EPA 5030B (Water)

Blank (B5K2502-BLK1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|----------------------------------|----|-----|------|------|------|--|--------|--|--|--|
| Benzene | ND | 1.0 | ug/L | | | | | | | |
| Toluene | ND | 1.0 | " | | | | | | | |
| Ethylbenzene | ND | 1.0 | " | | | | | | | |
| Xylenes, total | ND | 1.0 | " | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 71 | | " | 62.5 | 114 | | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | 100 | | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | 98.8 | | 84-114 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2502 - EPA 5030B (Water)

LCS (B5K2502-BS1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|-----|----------|--|--|--|
| Benzene | 50.7 | 1.0 | ug/L | 50.0 | | 101 | 75-126 | | | |
| Toluene | 50.1 | 1.0 | " | 50.0 | | 100 | 78.7-126 | | | |
| Ethylbenzene | 51.8 | 1.0 | " | 50.0 | | 104 | 80-130 | | | |
| m,p-Xylene | 106 | 2.0 | " | 100 | | 106 | 77.2-133 | | | |
| o-Xylene | 53.4 | 1.0 | " | 50.0 | | 107 | 77.9-126 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 66 | | " | 62.5 | | 105 | 84-121 | | | |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 102 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 84-114 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2502 - EPA 5030B (Water)

| Matrix Spike (B5K2502-MS1) | Source: X511239-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | | |
|----------------------------------|--------------------|-----|------|---|----|------|--------|--|--|--|
| Benzene | 52.4 | 1.0 | ug/L | 50.0 | ND | 105 | 74-130 | | | |
| Toluene | 50.9 | 1.0 | " | 50.0 | ND | 102 | 73-131 | | | |
| Ethylbenzene | 52.5 | 1.0 | " | 50.0 | ND | 105 | 76-132 | | | |
| m,p-Xylene | 109 | 2.0 | " | 100 | ND | 109 | 69-139 | | | |
| o-Xylene | 55.7 | 1.0 | " | 50.0 | ND | 111 | 74-131 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 68 | | " | 62.5 | | 108 | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 100 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 99.1 | 84-114 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2502 - EPA 5030B (Water)

| Matrix Spike Dup (B5K2502-MSD1) | Source: X511239-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | | |
|----------------------------------|--------------------|-----|------|---|----|------|--------|------|----|--|
| Benzene | 48.4 | 1.0 | ug/L | 50.0 | ND | 96.8 | 74-130 | 7.88 | 20 | |
| Toluene | 47.4 | 1.0 | " | 50.0 | ND | 94.9 | 73-131 | 6.98 | 20 | |
| Ethylbenzene | 49.5 | 1.0 | " | 50.0 | ND | 99.0 | 76-132 | 5.98 | 20 | |
| m,p-Xylene | 101 | 2.0 | " | 100 | ND | 101 | 69-139 | 7.53 | 20 | |
| o-Xylene | 50.8 | 1.0 | " | 50.0 | ND | 102 | 74-131 | 9.19 | 20 | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | " | 62.5 | | 104 | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 101 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 61 | | " | 62.5 | | 98.3 | 84-114 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2507 - EPA 5030 (soil)

Blank (B5K2507-BLK1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|----------------------------------|------|-------|-------|------|--|------|--------|--|--|--|
| 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 | 68.5 | | ug/kg | 62.5 | | 110 | 70-130 | | | |
| Surrogate: Toluene-d8 | 57.6 | | " | 62.5 | | 92.2 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 64.5 | | " | 62.5 | | 103 | 70-130 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2507 - EPA 5030 (soil)

LCS (B5K2507-BS1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|--|------|----------|--|--|--|
| Benzene | 0.105 | 0.002 | mg/kg | 0.100 | | 105 | 77.1-124 | | | |
| Toluene | 0.089 | 0.002 | " | 0.100 | | 88.7 | 74.5-128 | | | |
| Ethylbenzene | 0.096 | 0.002 | " | 0.100 | | 95.7 | 66.4-127 | | | |
| m,p-Xylene | 0.197 | 0.004 | " | 0.200 | | 98.7 | 76.6-124 | | | |
| o-Xylene | 0.095 | 0.002 | " | 0.100 | | 95.3 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 66.7 | | ug/kg | 62.5 | | 107 | 70-130 | | | |
| Surrogate: Toluene-d8 | 57.5 | | " | 62.5 | | 92.0 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63.3 | | " | 62.5 | | 101 | 70-130 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2507 - EPA 5030 (soil)

| Matrix Spike (B5K2507-MS1) | Source: X511301-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|--|--|--|
| Benzene | 0.101 | 0.002 | mg/kg | 0.100 | 0.004 | 96.8 | 71.8-126 | | | |
| Toluene | 0.091 | 0.002 | " | 0.100 | ND | 90.9 | 65.1-130 | | | |
| Ethylbenzene | 0.093 | 0.002 | " | 0.100 | ND | 92.8 | 62.2-130 | | | |
| m,p-Xylene | 0.193 | 0.004 | " | 0.200 | ND | 96.5 | 46.5-137 | | | |
| o-Xylene | 0.092 | 0.002 | " | 0.100 | ND | 91.7 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 66.4 | | ug/kg | 62.5 | | 106 | 70-130 | | | |
| Surrogate: Toluene-d8 | 57.5 | | " | 62.5 | | 92.0 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63.2 | | " | 62.5 | | 101 | 70-130 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5K2507 - EPA 5030 (soil)

| Matrix Spike Dup (B5K2507-MSD1) | Source: X511301-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|-------|------|--|
| Benzene | 0.101 | 0.002 | mg/kg | 0.100 | 0.004 | 96.8 | 71.8-126 | 0.00 | 11.3 | |
| Toluene | 0.089 | 0.002 | " | 0.100 | ND | 89.0 | 65.1-130 | 2.13 | 15.4 | |
| Ethylbenzene | 0.092 | 0.002 | " | 0.100 | ND | 91.6 | 62.2-130 | 1.32 | 19.6 | |
| m,p-Xylene | 0.193 | 0.004 | " | 0.200 | ND | 96.3 | 46.5-137 | 0.218 | 19.2 | |
| o-Xylene | 0.091 | 0.002 | " | 0.100 | ND | 90.7 | 54.2-134 | 1.14 | 17.9 | |
| Surrogate: 1,2-Dichloroethane-d4 | 67.2 | | ug/kg | 62.5 | | 108 | 70-130 | | | |
| Surrogate: Toluene-d8 | 57.3 | | " | 62.5 | | 91.7 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 63.7 | | " | 62.5 | | 102 | 70-130 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

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 B5K2506 - EPA 3580

Blank (B5K2506-BLK1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|-----------------------------------|----|-----|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | | | | | | | |
| Residual Range Organics (C28-C36) | ND | 200 | " | | | | | | | |
| Surrogate: o-Terphenyl | 42 | | " | 50.0 | | 84.6 | 59-131 | | | |

LCS (B5K2506-BS1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | 690 | 50 | mg/kg | | | | 64-121 | | | |
| Residual Range Organics (C28-C36) | 750 | 200 | " | 1000 | | 75.4 | 58-124 | | | |
| Surrogate: o-Terphenyl | 41 | | " | 50.0 | | 82.4 | 59-131 | | | |

Matrix Spike (B5K2506-MS1)

Source: X511301-01

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|-----------------------------------|------|-----|-------|------|----|-----|--------|--|--|--|
| Diesel (C10-C28) | 1100 | 50 | mg/kg | | ND | | 53-125 | | | |
| Residual Range Organics (C28-C36) | 1200 | 200 | " | 1000 | 18 | 114 | 47-133 | | | |
| Surrogate: o-Terphenyl | 52 | | " | 50.0 | | 104 | 59-131 | | | |

Matrix Spike Dup (B5K2506-MSD1)

Source: X511301-01

Prepared: 11/25/2015 Analyzed: 11/25/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|----|------|--------|------|----|-------|
| Diesel (C10-C28) | 690 | 50 | mg/kg | | ND | | 53-125 | 41.5 | 20 | QM-07 |
| Residual Range Organics (C28-C36) | 730 | 200 | " | 1000 | 18 | 71.4 | 47-133 | 45.2 | 20 | QM-07 |
| Surrogate: o-Terphenyl | 41 | | " | 50.0 | | 81.9 | 59-131 | | | |

Origins Laboratory, Inc.



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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 B5K2504 - NO PREP | | | | | | | | | | |
| Duplicate (B5K2504-DUP1) | | Source: X511301-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | |
| pH | 7.26 | | pH Units | | 7.53 | | | 3.65 | 25 | |
| Batch B5K2505 - NO PREP | | | | | | | | | | |
| Blank (B5K2505-BLK1) | | | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | |
| Specific Conductance (EC) | 0.00360 | | mmhos/cm | | | | | | | |
| Duplicate (B5K2505-DUP1) | | Source: X511301-01 | | | Prepared: 11/25/2015 Analyzed: 11/25/2015 | | | | | |
| Specific Conductance (EC) | 0.0858 | | mmhos/cm | | 0.0909 | | | 5.77 | 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.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #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.

Jen Pellegrini For Noelle Doyle Mathis, President

December 02, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Lorenz #1

Project Number - 014215233

Attached are your analytical results for KMG - Lorenz #1 received by Origins Laboratory, Inc. December 01, 2015. This project is associated with Origins project number X512013-01.

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



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|------------|---------------|--------|------------------------|------------------|
| N02 @ 2.5' | X512013-01 | Soil | December 1, 2015 14:45 | 12/01/2015 16:58 |
| S02 @ 2.5' | X512013-02 | Soil | December 1, 2015 14:55 | 12/01/2015 16:58 |

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS12013

Client: LTE

Client Project ID: Lorenz #1

Checklist Completed by: Jeff Smith

Shipped Via: H/D

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

Date/time completed: 12/1/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 2.7 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

| Requirement Description | Yes | No | N/A | Comments (if any) |
|--|-----|----|-----|-------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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.

Jeff Smith
 Reviewed by (Project Manager)

12/1/15
 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.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

N02 @ 2.5'
12/1/2015 2:45:00PM

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

Origins Laboratory, Inc.
X512013-01 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|------------|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | 260 | 25 | mg/kg | 1 | B5L0102 | 12/01/2015 | 12/01/2015 | |
| Residual Range Organics (C28-C36) | 160 | 100 | " | " | " | " | " | |

Surrogate: *o*-Terphenyl 75.9 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|--------------|-------|-------|---|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | 1.24 | 0.200 | mg/kg | 1 | B5L0106 | 12/01/2015 | 12/01/2015 | |
| Benzene | 0.002 | 0.002 | " | " | " | " | " | |
| Toluene | ND | 0.002 | " | " | " | " | " | |
| Ethylbenzene | 0.012 | 0.002 | " | " | " | " | " | |
| Xylenes, total | 0.174 | 0.002 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 89.6 % 70-130 " " "
 Surrogate: Toluene-d8 103 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 93.7 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|-------------|--|----------|---|---------|------------|------------|--|
| pH | 8.36 | | pH Units | 1 | B5L0107 | 12/01/2015 | 12/01/2015 | |
|----|-------------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|---------------|--|----------|---|---------|---|------------|--|
| Specific Conductance (EC) | 0.0893 | | mmhos/cm | " | B5L0108 | " | 12/01/2015 | |
|---------------------------|---------------|--|----------|---|---------|---|------------|--|

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

S02 @ 2.5'
12/1/2015 2:55:00PM

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

Origins Laboratory, Inc.
X512013-02 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|-----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | 200 | 25 | mg/kg | 1 | B5L0102 | 12/01/2015 | 12/01/2015 | |
| Residual Range Organics (C28-C36) | ND | 100 | " | " | " | " | " | |

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

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|-------|-------|-------|----|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | 200 | 5.00 | mg/kg | 25 | B5L0106 | 12/01/2015 | 12/01/2015 | |
| Benzene | 0.107 | 0.050 | " | " | " | " | " | |
| Toluene | ND | 0.050 | " | " | " | " | " | |
| Ethylbenzene | 0.874 | 0.050 | " | " | " | " | " | |
| Xylenes, total | ND | 0.050 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 83.6 % 70-130 " " "
Surrogate: Toluene-d8 118 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 109 % 70-130 " " "

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 7.79 | | pH Units | 1 | B5L0107 | 12/01/2015 | 12/01/2015 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|-------|--|----------|---|---------|---|------------|--|
| Specific Conductance (EC) | 0.131 | | mmhos/cm | " | B5L0108 | " | 12/01/2015 | |
|---------------------------|-------|--|----------|---|---------|---|------------|--|

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0106 - EPA 5030 (soil)

Blank (B5L0106-BLK1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|----------------------------------|------|-------|-------|------|--|------|--------|--|--|--|
| 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 | 56.9 | | ug/kg | 62.5 | | 91.0 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64.0 | | " | 62.5 | | 102 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 59.9 | | " | 62.5 | | 95.8 | 70-130 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0106 - EPA 5030 (soil)

LCS (B5L0106-BS1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|--|------|----------|--|--|--|
| 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 | 0.082 | 0.002 | " | 0.100 | | 82.0 | 66.4-127 | | | |
| m,p-Xylene | 0.165 | 0.004 | " | 0.200 | | 82.4 | 76.6-124 | | | |
| o-Xylene | 0.083 | 0.002 | " | 0.100 | | 83.4 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 57.1 | | ug/kg | 62.5 | | 91.4 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64.7 | | " | 62.5 | | 104 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 61.4 | | " | 62.5 | | 98.3 | 70-130 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0106 - EPA 5030 (soil)

| Matrix Spike (B5L0106-MS1) | Source: X512013-01 | | | Prepared: 12/01/2015 Analyzed: 12/01/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|--|--|-----------------|
| Benzene | 0.099 | 0.002 | mg/kg | 0.100 | 0.002 | 97.8 | 71.8-126 | | | |
| Toluene | 0.092 | 0.002 | " | 0.100 | ND | 91.8 | 65.1-130 | | | |
| Ethylbenzene | 0.111 | 0.002 | " | 0.100 | 0.012 | 99.2 | 62.2-130 | | | |
| m,p-Xylene | 0.477 | 0.004 | " | 0.200 | 0.174 | 151 | 46.5-137 | | | QM-07, QR-02 |
| o-Xylene | 0.081 | 0.002 | " | 0.100 | ND | 81.1 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 59.4 | | ug/kg | 62.5 | | 95.0 | 70-130 | | | |
| Surrogate: Toluene-d8 | 64.6 | | " | 62.5 | | 103 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 60.1 | | " | 62.5 | | 96.1 | 70-130 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0106 - EPA 5030 (soil)

| Matrix Spike Dup (B5L0106-MSD1) | Source: X512013-01 | | | Prepared: 12/01/2015 Analyzed: 12/01/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|------|------|-----------------|
| Benzene | 0.104 | 0.002 | mg/kg | 0.100 | 0.002 | 102 | 71.8-126 | 4.50 | 11.3 | |
| Toluene | 0.101 | 0.002 | " | 0.100 | ND | 101 | 65.1-130 | 9.98 | 15.4 | |
| Ethylbenzene | 0.107 | 0.002 | " | 0.100 | 0.012 | 94.9 | 62.2-130 | 3.91 | 19.6 | |
| m,p-Xylene | 0.390 | 0.004 | " | 0.200 | 0.174 | 108 | 46.5-137 | 20.1 | 19.2 | QR-02, QR-03 |
| o-Xylene | 0.088 | 0.002 | " | 0.100 | ND | 88.0 | 54.2-134 | 8.14 | 17.9 | |
| Surrogate: 1,2-Dichloroethane-d4 | 54.0 | | ug/kg | 62.5 | | 86.4 | 70-130 | | | |
| Surrogate: Toluene-d8 | 65.1 | | " | 62.5 | | 104 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 58.3 | | " | 62.5 | | 93.3 | 70-130 | | | |

Origins Laboratory, Inc.



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

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

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 B5L0102 - EPA 3580

Blank (B5L0102-BLK1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|-----------------------------------|----|-----|-------|------|--|-----|--------|--|--|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | | | | | | | |
| Residual Range Organics (C28-C36) | ND | 200 | " | | | | | | | |
| Surrogate: o-Terphenyl | 77 | | " | 50.0 | | 155 | 59-131 | | | |

LCS (B5L0102-BS1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | 890 | 50 | mg/kg | 1000 | | 88.6 | 64-121 | | | |
| Residual Range Organics (C28-C36) | 890 | 200 | " | 1000 | | 89.5 | 58-124 | | | |
| Surrogate: o-Terphenyl | 48 | | " | 50.0 | | 96.4 | 59-131 | | | |

Matrix Spike (B5L0102-MS1)

Source: X512005-01

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|----|------|--------|--|--|--|
| Diesel (C10-C28) | 870 | 50 | mg/kg | 1000 | ND | 87.0 | 53-125 | | | |
| Residual Range Organics (C28-C36) | 940 | 200 | " | 1000 | 26 | 91.7 | 47-133 | | | |
| Surrogate: o-Terphenyl | 51 | | " | 50.0 | | 101 | 59-131 | | | |

Matrix Spike Dup (B5L0102-MSD1)

Source: X512005-01

Prepared: 12/01/2015 Analyzed: 12/01/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|----|------|--------|------|----|--|
| Diesel (C10-C28) | 880 | 50 | mg/kg | 1000 | ND | 87.9 | 53-125 | 1.07 | 20 | |
| Residual Range Organics (C28-C36) | 930 | 200 | " | 1000 | 26 | 90.1 | 47-133 | 1.76 | 20 | |
| Surrogate: o-Terphenyl | 50 | | " | 50.0 | | 101 | 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.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 B5L0107 - NO PREP | | | | | | | | | | |
| Duplicate (B5L0107-DUP1) | | Source: X512013-01 | | | Prepared: 12/01/2015 Analyzed: 12/01/2015 | | | | | |
| pH | 8.38 | | pH Units | | 8.36 | | | 0.239 | 25 | |
| Batch B5L0108 - NO PREP | | | | | | | | | | |
| Blank (B5L0108-BLK1) | | Prepared: 12/01/2015 Analyzed: 12/01/2015 | | | | | | | | |
| Specific Conductance (EC) | 0.00290 | | mmhos/cm | | | | | | | |
| Duplicate (B5L0108-DUP1) | | Source: X512013-01 | | | Prepared: 12/01/2015 Analyzed: 12/01/2015 | | | | | |
| Specific Conductance (EC) | 0.0783 | | mmhos/cm | | 0.0893 | | | 13.1 | 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.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

Notes and Definitions

- 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.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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.

December 03, 2015

LT Environmental, Inc.

John Cocroft

4600 West 60th Avenue

Arvada CO 80003

Project Name - KMG - Lorenz #1

Project Number - 014215233

Attached are your analytical results for KMG - Lorenz #1 received by Origins Laboratory, Inc. December 02, 2015. This project is associated with Origins project number X512026-01.

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



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|------------|---------------|--------|------------------------|------------------|
| W02 @ 0.5' | X512026-01 | Soil | December 2, 2015 10:45 | 12/02/2015 16:35 |
| GW02 | X512026-02 | Water | December 2, 2015 15:30 | 12/02/2015 16:35 |

Mike changed the sample ID on -01 from W01 @ 0.5' to W02 @ 0.5' on 12/3/15.

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.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS12026 Client: LTE
 Client Project ID: Lorenz #1
 Checklist Completed by: Jeff Smith Shipped Via: HTD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Date/time completed: 12/2/15 Airbill #: NA
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____ (Describe)
 Cooler Number/Temperature: 1 / 1.5 °C _____ / _____ °C _____ / _____ °C
 Thermometer ID: T003

| Requirement Description | Yes | No | N/A | Comments (if any) |
|---|-----|----|-----|-------------------|
| If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ? | 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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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.

Jeff Smith Reviewed by (Project Manager) 12/2/15 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.

LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

W02 @ 0.5'
12/2/2015 10:45:00AM

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

Origins Laboratory, Inc.
X512026-01 (Soil)

DRO/RRO by EPA8015C

| | | | | | | | | |
|-----------------------------------|----|-----|-------|---|---------|------------|------------|--|
| Diesel (C10-C28) | ND | 25 | mg/kg | 1 | B5L0205 | 12/02/2015 | 12/02/2015 | |
| Residual Range Organics (C28-C36) | ND | 100 | " | " | " | " | " | |

Surrogate: o-Terphenyl 89.6 % 59-131 " " "

GBTEX by EPA 8260C

| | | | | | | | | |
|-----------------------------|----|-------|-------|---|---------|------------|------------|--|
| Gasoline Range Hydrocarbons | ND | 0.200 | mg/kg | 1 | B5L0204 | 12/02/2015 | 12/02/2015 | |
| Benzene | ND | 0.002 | " | " | " | " | " | |
| Toluene | ND | 0.002 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.002 | " | " | " | " | " | |
| Xylenes, total | ND | 0.002 | " | " | " | " | " | |

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "

Surrogate: Toluene-d8 88.9 % 70-130 " " "

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

pH in Soil by EPA 9045D

| | | | | | | | | |
|----|------|--|----------|---|---------|------------|------------|--|
| pH | 8.03 | | pH Units | 1 | B5L0208 | 12/02/2015 | 12/02/2015 | |
|----|------|--|----------|---|---------|------------|------------|--|

Specific Conductance by Modified 9050A

| | | | | | | | | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|
| Specific Conductance (EC) | 0.489 | | mmhos/cm | " | B5L0209 | 12/02/2015 | 12/02/2015 | |
|---------------------------|-------|--|----------|---|---------|------------|------------|--|

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #1

GW02
12/2/2015 3:30:00PM

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

Origins Laboratory, Inc.
X512026-02 (Water)

BTEX by EPA 8260C

| | | | | | | | | |
|----------------|------|-----|------|---|---------|------------|------------|--|
| Benzene | 1.5 | 1.0 | ug/L | 1 | B5L0105 | 12/02/2015 | 12/02/2015 | |
| Toluene | ND | 1.0 | " | " | " | " | " | |
| Ethylbenzene | 8.3 | 1.0 | " | " | " | " | " | |
| Xylenes, total | 49.0 | 1.0 | " | " | " | " | " | |

| | | | | | | | | |
|----------------------------------|-------|----------|--|--|---|---|---|--|
| Surrogate: 1,2-Dichloroethane-d4 | 108 % | 87.4-110 | | | " | " | " | |
| Surrogate: Toluene-d8 | 108 % | 83.7-117 | | | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | 106 % | 84.1-109 | | | " | " | " | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

Blank (B5L0105-BLK1)

Prepared: 12/01/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|----|-----|------|------|--|------|--------|--|--|--|
| Benzene | ND | 1.0 | ug/L | | | | | | | |
| Toluene | ND | 1.0 | " | | | | | | | |
| Ethylbenzene | ND | 1.0 | " | | | | | | | |
| Xylenes, total | ND | 1.0 | " | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 55 | | " | 62.5 | | 88.4 | 84-121 | | | |
| Surrogate: Toluene-d8 | 61 | | " | 62.5 | | 98.4 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 65 | | " | 62.5 | | 104 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

Blank (B5L0105-BLK2)

Prepared: 12/01/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|----|-----|------|------|--|-----|--------|--|--|--|
| Benzene | ND | 1.0 | ug/L | | | | | | | |
| Toluene | ND | 1.0 | " | | | | | | | |
| Ethylbenzene | ND | 1.0 | " | | | | | | | |
| Xylenes, total | ND | 1.0 | " | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 70 | | " | 62.5 | | 111 | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 100 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 65 | | " | 62.5 | | 104 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

LCS (B5L0105-BS1)

Prepared: 12/01/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|----------|--|--|--|
| Benzene | 47.1 | 1.0 | ug/L | 50.0 | | 94.2 | 75-126 | | | |
| Toluene | 48.5 | 1.0 | " | 50.0 | | 97.1 | 78.7-126 | | | |
| Ethylbenzene | 47.7 | 1.0 | " | 50.0 | | 95.3 | 80-130 | | | |
| m,p-Xylene | 93.5 | 2.0 | " | 100 | | 93.5 | 77.2-133 | | | |
| o-Xylene | 46.6 | 1.0 | " | 50.0 | | 93.2 | 77.9-126 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 54 | | " | 62.5 | | 86.4 | 84-121 | | | |
| Surrogate: Toluene-d8 | 61 | | " | 62.5 | | 98.1 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 65 | | " | 62.5 | | 104 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

LCS (B5L0105-BS2)

Prepared: 12/01/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|------|-----|------|------|--|------|----------|--|--|--|
| Benzene | 55.5 | 1.0 | ug/L | 50.0 | | 111 | 75-126 | | | |
| Toluene | 54.8 | 1.0 | " | 50.0 | | 110 | 78.7-126 | | | |
| Ethylbenzene | 56.3 | 1.0 | " | 50.0 | | 113 | 80-130 | | | |
| m,p-Xylene | 115 | 2.0 | " | 100 | | 115 | 77.2-133 | | | |
| o-Xylene | 57.9 | 1.0 | " | 50.0 | | 116 | 77.9-126 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 65 | | " | 62.5 | | 104 | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 101 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 62 | | " | 62.5 | | 99.1 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

| Matrix Spike (B5L0105-MS1) | Source: X512001-01 | | | Prepared: 12/01/2015 Analyzed: 12/02/2015 | | | | | | |
|-----------------------------------|---------------------------|-----|------|--|----|------|--------|--|--|--|
| Benzene | 57.0 | 1.0 | ug/L | 50.0 | ND | 114 | 74-130 | | | |
| Toluene | 57.7 | 1.0 | " | 50.0 | ND | 115 | 73-131 | | | |
| Ethylbenzene | 55.5 | 1.0 | " | 50.0 | ND | 111 | 76-132 | | | |
| m,p-Xylene | 110 | 2.0 | " | 100 | ND | 110 | 69-139 | | | |
| o-Xylene | 55.2 | 1.0 | " | 50.0 | ND | 110 | 74-131 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 54 | | " | 62.5 | | 86.3 | 84-121 | | | |
| Surrogate: Toluene-d8 | 63 | | " | 62.5 | | 100 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

| Matrix Spike (B5L0105-MS2) | Source: X512001-02 | | | Prepared: 12/01/2015 Analyzed: 12/02/2015 | | | | | | |
|-----------------------------------|---------------------------|-----|------|--|------|-----|--------|--|--|--|
| Benzene | 54.6 | 1.0 | ug/L | 50.0 | 1.2 | 107 | 74-130 | | | |
| Toluene | 54.8 | 1.0 | " | 50.0 | 4.4 | 101 | 73-131 | | | |
| Ethylbenzene | 115 | 1.0 | " | 50.0 | 63.1 | 104 | 76-132 | | | |
| m,p-Xylene | 584 | 2.0 | " | 100 | 471 | 113 | 69-139 | | | |
| o-Xylene | 72.9 | 1.0 | " | 50.0 | 22.9 | 100 | 74-131 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 66 | | " | 62.5 | | 106 | 84-121 | | | |
| Surrogate: Toluene-d8 | 65 | | " | 62.5 | | 104 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 84-114 | | | |

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 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

| Matrix Spike Dup (B5L0105-MSD1) | Source: X512001-01 | | | Prepared: 12/01/2015 Analyzed: 12/02/2015 | | | | | | |
|----------------------------------|--------------------|-----|------|---|----|------|--------|------|----|------|
| Benzene | 50.5 | 1.0 | ug/L | 50.0 | ND | 101 | 74-130 | 12.0 | 20 | |
| Toluene | 51.9 | 1.0 | " | 50.0 | ND | 104 | 73-131 | 10.5 | 20 | |
| Ethylbenzene | 48.4 | 1.0 | " | 50.0 | ND | 96.8 | 76-132 | 13.6 | 20 | |
| m,p-Xylene | 98.3 | 2.0 | " | 100 | ND | 98.3 | 69-139 | 11.4 | 20 | |
| o-Xylene | 49.4 | 1.0 | " | 50.0 | ND | 98.9 | 74-131 | 10.9 | 20 | |
| Surrogate: 1,2-Dichloroethane-d4 | 52 | | " | 62.5 | | 83.2 | 84-121 | | | S-04 |
| Surrogate: Toluene-d8 | 64 | | " | 62.5 | | 102 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 64 | | " | 62.5 | | 102 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0105 - EPA 5030B (Water)

| Matrix Spike Dup (B5L0105-MSD2) | Source: X512001-02 | | | Prepared: 12/01/2015 Analyzed: 12/02/2015 | | | | | | |
|----------------------------------|--------------------|-----|------|---|------|-----|--------|--------|----|-------|
| Benzene | 53.4 | 1.0 | ug/L | 50.0 | 1.2 | 105 | 74-130 | 2.07 | 20 | |
| Toluene | 54.8 | 1.0 | " | 50.0 | 4.4 | 101 | 73-131 | 0.0729 | 20 | |
| Ethylbenzene | 116 | 1.0 | " | 50.0 | 63.1 | 106 | 76-132 | 1.01 | 20 | |
| m,p-Xylene | 624 | 2.0 | " | 100 | 471 | 154 | 69-139 | 6.65 | 20 | QM-07 |
| o-Xylene | 76.9 | 1.0 | " | 50.0 | 22.9 | 108 | 74-131 | 5.30 | 20 | |
| Surrogate: 1,2-Dichloroethane-d4 | 66 | | " | 62.5 | | 106 | 84-121 | | | |
| Surrogate: Toluene-d8 | 67 | | " | 62.5 | | 106 | 85-115 | | | |
| Surrogate: 4-Bromofluorobenzene | 63 | | " | 62.5 | | 101 | 84-114 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0204 - EPA 5030 (soil)

Blank (B5L0204-BLK1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|------|-------|-------|------|--|------|--------|--|--|--|
| 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 | 72.2 | | ug/kg | 62.5 | | 115 | 70-130 | | | |
| Surrogate: Toluene-d8 | 54.9 | | " | 62.5 | | 87.9 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 62.9 | | " | 62.5 | | 101 | 70-130 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0204 - EPA 5030 (soil)

LCS (B5L0204-BS1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|----------------------------------|-------|-------|-------|-------|--|------|----------|--|--|--|
| Benzene | 0.100 | 0.002 | mg/kg | 0.100 | | 100 | 77.1-124 | | | |
| Toluene | 0.086 | 0.002 | " | 0.100 | | 86.4 | 74.5-128 | | | |
| Ethylbenzene | 0.087 | 0.002 | " | 0.100 | | 86.7 | 66.4-127 | | | |
| m,p-Xylene | 0.181 | 0.004 | " | 0.200 | | 90.7 | 76.6-124 | | | |
| o-Xylene | 0.087 | 0.002 | " | 0.100 | | 86.8 | 76.6-124 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 67.7 | | ug/kg | 62.5 | | 108 | 70-130 | | | |
| Surrogate: Toluene-d8 | 56.2 | | " | 62.5 | | 89.9 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 64.8 | | " | 62.5 | | 104 | 70-130 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0204 - EPA 5030 (soil)

| Matrix Spike (B5L0204-MS1) | Source: X512021-02 | | | Prepared: 12/02/2015 Analyzed: 12/02/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|--|--|--|
| Benzene | 0.212 | 0.002 | mg/kg | 0.200 | ND | 106 | 71.8-126 | | | |
| Toluene | 0.182 | 0.002 | " | 0.200 | ND | 90.9 | 65.1-130 | | | |
| Ethylbenzene | 0.182 | 0.002 | " | 0.200 | ND | 91.2 | 62.2-130 | | | |
| m,p-Xylene | 0.378 | 0.004 | " | 0.400 | 0.002 | 93.9 | 46.5-137 | | | |
| o-Xylene | 0.181 | 0.002 | " | 0.200 | 0.001 | 89.9 | 54.2-134 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 68.3 | | ug/kg | 62.5 | | 109 | 70-130 | | | |
| Surrogate: Toluene-d8 | 54.8 | | " | 62.5 | | 87.7 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 64.7 | | " | 62.5 | | 104 | 70-130 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch B5L0204 - EPA 5030 (soil)

| Matrix Spike Dup (B5L0204-MSD1) | Source: X512021-02 | | | Prepared: 12/02/2015 Analyzed: 12/02/2015 | | | | | | |
|----------------------------------|--------------------|-------|-------|---|-------|------|----------|------|------|--|
| Benzene | 0.220 | 0.002 | mg/kg | 0.200 | ND | 110 | 71.8-126 | 3.78 | 11.3 | |
| Toluene | 0.186 | 0.002 | " | 0.200 | ND | 93.1 | 65.1-130 | 2.37 | 15.4 | |
| Ethylbenzene | 0.188 | 0.002 | " | 0.200 | ND | 94.1 | 62.2-130 | 3.14 | 19.6 | |
| m,p-Xylene | 0.388 | 0.004 | " | 0.400 | 0.002 | 96.5 | 46.5-137 | 2.68 | 19.2 | |
| o-Xylene | 0.187 | 0.002 | " | 0.200 | 0.001 | 92.8 | 54.2-134 | 3.11 | 17.9 | |
| Surrogate: 1,2-Dichloroethane-d4 | 68.2 | | ug/kg | 62.5 | | 109 | 70-130 | | | |
| Surrogate: Toluene-d8 | 55.5 | | " | 62.5 | | 88.7 | 70-130 | | | |
| Surrogate: 4-Bromofluorobenzene | 65.6 | | " | 62.5 | | 105 | 70-130 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

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 B5L0205 - EPA 3580

Blank (B5L0205-BLK1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|-----------------------------------|----|-----|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | ND | 50 | mg/kg | | | | | | | |
| Residual Range Organics (C28-C36) | ND | 200 | " | | | | | | | |
| Surrogate: o-Terphenyl | 45 | | " | 50.0 | | 90.9 | 59-131 | | | |

LCS (B5L0205-BS1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|--|------|--------|--|--|--|
| Diesel (C10-C28) | 860 | 50 | mg/kg | 1000 | | 85.6 | 64-121 | | | |
| Residual Range Organics (C28-C36) | 930 | 200 | " | 1000 | | 92.8 | 58-124 | | | |
| Surrogate: o-Terphenyl | 43 | | " | 50.0 | | 85.0 | 59-131 | | | |

Matrix Spike (B5L0205-MS1)

Source: X512021-02

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|----|------|--------|--|--|--|
| Diesel (C10-C28) | 890 | 50 | mg/kg | 1000 | ND | 88.9 | 53-125 | | | |
| Residual Range Organics (C28-C36) | 900 | 200 | " | 1000 | 22 | 87.6 | 47-133 | | | |
| Surrogate: o-Terphenyl | 39 | | " | 50.0 | | 78.1 | 59-131 | | | |

Matrix Spike Dup (B5L0205-MSD1)

Source: X512021-02

Prepared: 12/02/2015 Analyzed: 12/02/2015

| | | | | | | | | | | |
|-----------------------------------|-----|-----|-------|------|----|------|--------|-------|----|--|
| Diesel (C10-C28) | 910 | 50 | mg/kg | 1000 | ND | 91.2 | 53-125 | 2.50 | 20 | |
| Residual Range Organics (C28-C36) | 890 | 200 | " | 1000 | 22 | 87.1 | 47-133 | 0.553 | 20 | |
| Surrogate: o-Terphenyl | 45 | | " | 50.0 | | 90.7 | 59-131 | | | |

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LT Environmental, Inc.
 4600 West 60th Avenue
 Arvada CO 80003

John Cocroft
 Project Number: 014215233
 Project: KMG - Lorenz #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 B5L0208 - NO PREP | | | | | | | | | | |
| Duplicate (B5L0208-DUP1) | | Source: X512026-01 | | | Prepared: 12/02/2015 Analyzed: 12/02/2015 | | | | | |
| pH | 8.07 | | pH Units | | 8.03 | | | 0.497 | 25 | |
| Batch B5L0209 - NO PREP | | | | | | | | | | |
| Blank (B5L0209-BLK1) | | Prepared: 12/02/2015 Analyzed: 12/02/2015 | | | | | | | | |
| Specific Conductance (EC) | 0.00370 | | mmhos/cm | | | | | | | |
| Duplicate (B5L0209-DUP1) | | Source: X512026-01 | | | Prepared: 12/02/2015 Analyzed: 12/02/2015 | | | | | |
| Specific Conductance (EC) | 0.497 | | mmhos/cm | | 0.489 | | | 1.62 | 25 | |

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Arvada CO 80003

John Cocroft
Project Number: 014215233
Project: KMG - Lorenz #1

Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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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