



Kerr-McGee Oil & Gas Onshore LP
1099 18th Street, Suite 1800
Denver, Colorado 80202
720-929-6000 Fax 720-929-7000

April 19, 2018

Mr. Peter Gintautas
Environmental Protection Specialist
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**Re: Form 27-Supplemental Remediation Progress Update
Ernie F Adamson Gas Unit-62N65W21SWSW
SWSW Sec 21-T2N-R65W
Spill/Release Point ID 447087
Remediation Project No. 9925**

Dear Mr. Gintautas:

This Supplemental Remediation Progress Update Letter Report has been prepared to document assessment and remediation activities that have been conducted subsequent to the submittal of the Form 27-Initial Site Investigation and Remediation Workplan (Initial Form 27) at the Ernie F Adamson Gas Unit-62N65W21SWSW production facility in Weld County, Colorado (Site). The Initial Form 27 was submitted via email to your office on November 23, 2016. The Colorado Oil and Gas Conservation Commission (COGCC) has issued Remediation Project Number 9925 for this project.

As detailed in the Initial Form 27, Site assessment and remediation activities were initiated by Kerr-McGee McGee Oil & Gas Onshore LP (Kerr-McGee) in July 2016, following the discovery of historical impacts associated with a corroded dump line during abandonment activities at the Site. Based on the results of the initial soil and groundwater assessment presented in the Initial Form 27, hydrocarbon impacts to soil and groundwater were present at the Site below approximately 20 feet below ground surface (bgs).

In order to address remaining hydrocarbon impacted soil that was left in place, and to mitigate remaining groundwater impacts, Tasman Geosciences, Inc. (Tasman) implemented engineered excavation, on-Site chemical oxidation (chemox) soil mixing, and groundwater treatment and removal activities as the selected remedial approach at the Site. Remediation activities were conducted between December 13, 2016, and February 20, 2017. A summary of these remediation activities is presented below:

- 12/13/16: Begin engineered excavation activities (stripping clean overburden, sloping sidewalls) to access remaining impacts below 20 feet bgs. Collect sidewall samples.
- 12/14/16 – 12/19/16: Initiate chemox soil mixing activities, using a dilute solution of hydrogen peroxide; treat approximately 1,400 cubic yards of impacted soil.

- 12/15/16 – 12/21/16: Collect post-mixing confirmation soil samples from treated material. Collect additional sidewall samples.
- 12/27/16: Initiate groundwater peroxide application and mixing. Collect additional confirmation soil samples from treated material.
- 12/30/16: Collect groundwater samples following initial treatment activities.
- 1/3/17: Conduct second groundwater peroxide application and mixing.
- 1/9/17: Collect groundwater samples following second round of treatment activities.
- 1/11/17: Remove approximately 300 cubic yards of saturated soil from phreatic zone.
- 1/13/17 – 1/16/17: Remove approximately 210 barrels of groundwater from excavation area via vacuum truck.
- 1/17/17: Collect groundwater samples following groundwater removal activities.
- 1/17/17 – 1/19/17: Remove approximately 170 additional barrels of groundwater from excavation area via vacuum truck.
- 2/8/17: Conduct third groundwater peroxide application and mixing. Collect additional confirmation soil samples from treated material.
- 2/13/17: Collect groundwater samples following third round of treatment activities.
- 2/15/17: Remove approximately 240 additional barrels of groundwater from excavation area via vacuum truck. Introduce approximately 385 pounds of granular activated carbon into groundwater within excavation area. Initiate excavation backfilling.
- 2/20/17: Complete excavation backfilling and re-grading activities.

During the excavation and remediation activities described above, confirmation soil samples were collected from the sidewalls of the excavation area at two depth intervals, approximately 20 and 32 feet bgs, in order to verify that hydrocarbon impacted soil was successfully remediated to be in full compliance with State standards. A total of 25 soil samples were collected from the excavation sidewalls during remediation activities and submitted to Origins Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by USEPA Method 8260C, and TPH diesel and oil range organics (DRO and ORO) by USEPA Method 8015. Laboratory analytical results indicate that constituent concentrations in the 20 soil samples collected from the final lateral extent of the excavation area were in full compliance with State standards. Soil sample analytical results are summarized in Table 1, soil sample locations are illustrated on Figure 1, and the laboratory analytical reports are included as an attachment.

Confirmation soil samples were also collected from the stockpiled treated soil, at a frequency of approximately one sample per each 100 cubic yards of treated material, following completion of chemox soil mixing activities. A total of 19 post-treatment confirmation soil samples were collected (CS01 – CS19) and submitted to Origins Laboratory for analysis of BTEX, TPH-GRO by USEPA Method 8260C, TPH-DRO and TPH-ORO by USEPA Method 8015. Laboratory analytical results indicate that constituent concentrations in the 19 post-treatment confirmation soil samples were in full compliance with State standards. Confirmation soil sample analytical results are summarized in Table 1, and the laboratory analytical reports are included as an attachment.

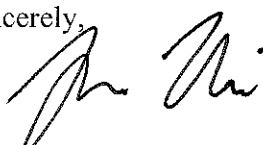
During the excavation and chemox mixing activities described above, groundwater samples were collected from the excavation area following each round of treatment (chemox treatment or groundwater removal), in order to determine the efficacy of the remediation activities. A total of eight groundwater samples were collected during remediation activities, during four separate sampling events. Two groundwater samples (GWN and GWS) were collected from the north and south excavation areas, respectively, during each groundwater sampling event. Groundwater samples were submitted to Origins Laboratory for analysis of BTEX by USEPA Method 8260C. Laboratory analytical results indicate that constituent concentrations in the two groundwater samples collected after the final round of treatment (GWN-04 and GWS-04) were in full compliance with State standards. Excavation groundwater sample analytical results are summarized in Table 2, groundwater sample locations are illustrated on Figure 1, and the laboratory analytical reports are included as an attachment.

Following the completion of remediation and confirmation soil sampling activities, the excavation area was backfilled using the sampled treated soil, stockpiled clean overburden, and clean imported fill material. Temporary groundwater monitoring wells were subsequently installed to evaluate the extent of remaining groundwater impacts, and quarterly groundwater monitoring is ongoing, as described in the Form 27-Supplemental Annual Update.

This report will be attached to the Form 27-Supplemental Annual Update (COGCC Document No. 401441888) to provide additional details regarding the remediation and confirmation sampling activities conducted at the site subsequent to the submittal of the Initial Form 27.

Please contact me at (970) 515-1161 with any questions or if you need additional information.

Sincerely,



Phillip L. Hamlin, P.G.
Senior HSE Representative

Tables: Table 1 – Soil Sample Results Summary Table
 Table 2 – Excavation Groundwater Sample Results Summary Table

Figures: Figure 1 – Excavation Soil and Groundwater Sample Location Map

Attachment: Laboratory Analytical Reports

TABLES

TABLE 1
ERNIE F ADAMSON GAS UNIT-62N65W21SWW
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH- GRO (mg/kg)	TEPH- DRO (mg/kg)	TEPH- ORO (mg/kg)	EC (mmhos/cm)	pH (units)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500			4 mmhos/cm or 2x BG	6-9
S01 @ 12'	07/29/16	12	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.457	7.83
E01 @ 12'	07/29/16	12	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0779	8.52
W01 @ 12'	07/29/16	12	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0151	8.47
B01 @ 14'	07/29/16	12	0.202	<0.050	0.141	0.203	<5.00	<25.0	<100	0.282	7.59
N01 @ 18'	08/02/16	18	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0341	6.95
N02 @ 18'	08/02/16	18	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0209	7.37
W02 @ 18'	08/02/16	18	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0703	7.38
E02 @ 18'	08/02/16	18	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.0810	7.53
B02 @ 15'	08/02/16	15	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.302	8.15
B03 @ 19'	08/02/16	19	0.054	1.18	1.01	23.0	373	462	<100	0.262	8.36
B04 @ 19'	08/02/16	19	<0.050	<0.050	<0.050	0.902	33.4	58.2	<100	0.317	8.37
B05 @ 20'	08/04/16	20	1.54	29.6	17.2	263	2,920	2,460	<100	0.211	9.49*
TP01 @ 36'	08/24/16	36	<0.050	<0.050	0.114	0.234	12.4	91.7	<100	0.143	7.79
TP02 @ 34'	08/24/16	34	0.456	1.16	9.22	149	1,780	753	<100	0.231	8.15
TP03 @ 33'	08/24/16	33	1.34	<0.498	5.68	104	1,050	1,200	<100	0.182	8.32
TP04 @ 32'	08/24/16	32	<0.050	0.076	2.24	36.9	461	659	<100	0.0975	7.84
TP05 @ 33'	08/24/16	33	<0.050	<0.050	<0.050	0.345	73.7	39.4	<100	0.0763	7.67
BH01 @ 31-32'	09/02/16	31-32	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	0.146	8.24
BH02 @ 32.5-34'	09/02/16	32.5-34	<0.002	<0.002	0.006	0.025	1.78	<25.0	<100	0.124	7.56
BH03 @ 31-32'	09/02/16	31-32	<0.050	<0.050	<0.050	<0.050	29.8	37.4	<100	0.150	7.59
N01 @ 32'	12/13/16	32	0.325	0.071	18.8	224	2,640	2,460	<100	NA	NA
E01 @ 32'	12/13/16	32	<0.050	<0.050	0.110	1.88	23.2	31.8	<100	NA	NA
E01 @ 20'	12/13/16	20	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	NA	NA
E02 @ 32'	12/15/16	32	<0.050	<0.050	0.082	1.44	21.8	<25.0	<100	NA	NA
E02 @ 20'	12/15/16	20	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	NA	NA
E03 @ 32'	12/15/16	32	0.097	<0.050	1.16	21.4	329	404	<100	NA	NA
E03 @ 20'	12/15/16	30	<0.050	<0.050	<0.050	<0.050	6.21	<25.0	<100	NA	NA

TABLE 1
ERNIE F ADAMSON GAS UNIT-62N65W21SW
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH- GRO (mg/kg)	TEPH- DRO (mg/kg)	TEPH- ORO (mg/kg)	EC (mmhos/cm)	pH (units)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500			4 mmhos/cm or 2x BG	6-9
S01 @32'	12/15/16	32	<0.050	<0.050	<0.050	0.138	<5.00	<25.0	<100	NA	NA
S01 @20'	12/15/16	20	0.056	0.061	<0.050	0.190	12.5	<25.0	<100	NA	NA
N02 @32'	12/15/16	32	0.051	1.37	2.61	51.5	440	395	<100	NA	NA
N02 @20'	12/15/16	20	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	NA	NA
CS01	12/15/16	-	<0.050	<0.050	0.224	4.40	119	38.9	<100	NA	NA
CS02	12/15/16	-	<0.050	<0.050	0.164	3.15	79.8	26.8	<100	NA	NA
CS03	12/15/16	-	<0.050	<0.050	0.384	0.792	16.8	28.8	<100	NA	NA
CS04	12/15/16	-	<0.050	<0.050	0.237	5.28	68.3	30.2	<100	NA	NA
N03 @32'	12/16/16	32	<0.050	<0.050	0.438	1.23	60.5	79.0	<100	NA	NA
N03 @20'	12/16/16	20	<0.002	<0.002	<0.002	<0.002	<0.200	49.0	<100	NA	NA
E04 @32	12/16/16	32	<0.050	<0.050	0.268	0.661	18.5	42.0	<100	NA	NA
E04 @20'	12/16/16	20	<0.002	<0.002	<0.002	<0.002	<0.200	44.9	<100	NA	NA
N04 @32'	12/21/16	32	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	NA	NA
N04 @20'	12/21/16	20	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	NA	NA
W01 @32'	12/21/16	32	<0.002	<0.002	<0.002	<0.002	0.831	<25.0	<100	NA	NA
W01 @20'	12/21/16	20	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	NA	NA
W02 @32'	12/21/16	32	<0.050	<0.050	<0.050	<0.050	51.0	319	<100	NA	NA
W02 @20'	12/21/16	20	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	NA	NA
W03 @32'	12/21/16	32	<0.050	<0.050	<0.050	<0.050	7.77	<25.0	<100	NA	NA
W03 @20'	12/21/16	20	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	NA	NA
S02 @32'	12/21/16	32	<0.050	<0.050	<0.050	<0.050	11.6	85.4	<100	NA	NA
S02 @20'	12/21/16	20	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	<100	NA	NA
CS05	12/27/16	-	<0.050	<0.050	0.436	1.34	55.4	<25.0	<100	NA	NA
CS06	12/27/16	-	<0.050	<0.050	0.160	0.403	38.4	<25.0	<100	NA	NA
CS07	12/27/16	-	<0.050	<0.050	0.126	0.332	54.8	<25.0	<100	NA	NA
CS08	12/27/16	-	<0.050	<0.050	<0.050	<0.050	15.2	<25.0	<100	NA	NA
CS09	12/27/16	-	<0.050	<0.050	<0.050	<0.050	20.5	<25.0	<100	NA	NA

TABLE 1
ERNIE F ADAMSON GAS UNIT-62N65W21SWSW
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH- GRO (mg/kg)	TEPH- DRO (mg/kg)	TEPH- ORO (mg/kg)	EC (mmhos/cm)	pH (units)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500			4 mmhos/cm or 2x BG	6-9
CS10	12/27/16	-	<0.050	0.096	0.156	5.41	72.2	<25.0	<100	NA	NA
CS11	12/27/16	-	<0.050	<0.050	<0.050	1.11	50.4	<25.0	<100	NA	NA
CS12	12/27/16	-	<0.050	<0.050	<0.050	<0.050	21.8	<25.0	<100	NA	NA
CS13	12/27/16	-	<0.050	<0.050	<0.050	0.124	58.3	<25.0	<100	NA	NA
CS14	12/27/16	-	<0.050	<0.050	<0.050	<0.050	50.3	<25.0	<100	NA	NA
CS15	02/08/17	-	<0.002	<0.002	<0.002	0.010	4.24	<25.0	<100	NA	NA
CS16	02/08/17	-	<0.002	<0.002	0.002	0.067	9.18	<25.0	<100	NA	NA
CS17	02/08/17	-	<0.002	<0.002	<0.002	0.006	0.805	<25.0	<100	NA	NA
CS18	02/08/17	-	<0.002	<0.002	<0.002	<0.002	0.229	<25.0	<100	NA	NA
CS19	02/08/17	-	<0.002	<0.002	<0.002	0.006	1.57	<25.0	<100	NA	NA

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

(*) = pH sample was collected below the designated root zone (>3' bgs)

(-) = No depth assigned to confirmation samples collected from soil mixing treated material stockpile.

NA = Constituent not analyzed.

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

EC = Electrical conductivity

BG = Background

mmhos/cm = Millimhos per centimeter

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

BOLD = Analytical result is in exceedance of COGCC Table 910-1 soil standards.

TABLE 2
ERNIE F ADAMSON GAS UNIT-62N65W21SSW
EXCAVATION GROUNDWATER SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth To Water (ft. BGS)
COGCC Standards for groundwater (µg/L) ⁽¹⁾		5	560	700	1,400	
12/27/2016 - Initial Groundwater Peroxide Application/Mixing						
GWN-01	12/30/16	98.6	242	177	3,090	~35
GWS-01	12/30/16	110	543	500	7,450	~35
1/3/2017 - 2nd Groundwater Peroxide Application/ Mixing						
GWN-02	01/09/17	152	398	1,510	19,700	~35
GWS-02	01/09/17	301	293	679	10,800	~35
1/11/2017 - Removal of 300 cu yds of saturated sediment						
1/13/2017 - Vacuum Removal of Groundwater - 105 BBLs						
1/16/2017 - Vacuum Removal of Groundwater - 105 BBLs						
GWN-03	01/17/17	19.0	19.2	85.0	1,150	~35
GWS-03	01/17/17	4.00	8.76	19.2	305	~35
1/17/2017 - Vacuum Removal of Groundwater - 50 BBLs						
1/19/2017 - Vacuum Removal of Groundwater - 120 BBLs						
2/8/2017 - 3rd Groundwater Peroxide Application/ Mixing						
GWN-04	02/13/17	<4.00	<4.00	<4.00	83.4	~35
GWS-04	02/13/17	<4.00	<4.00	4.00	141	~35
2/15/2017 - Vacuum Removal of Groundwater - 240 BBLs						
2/15/2017 - Addition of 385 pounds of Activated Carbon - Initiate Backfilling						

Notes:

1. Standards for groundwater are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

µg/L = Micrograms per liter.

ft. BGS = Feet below ground surface

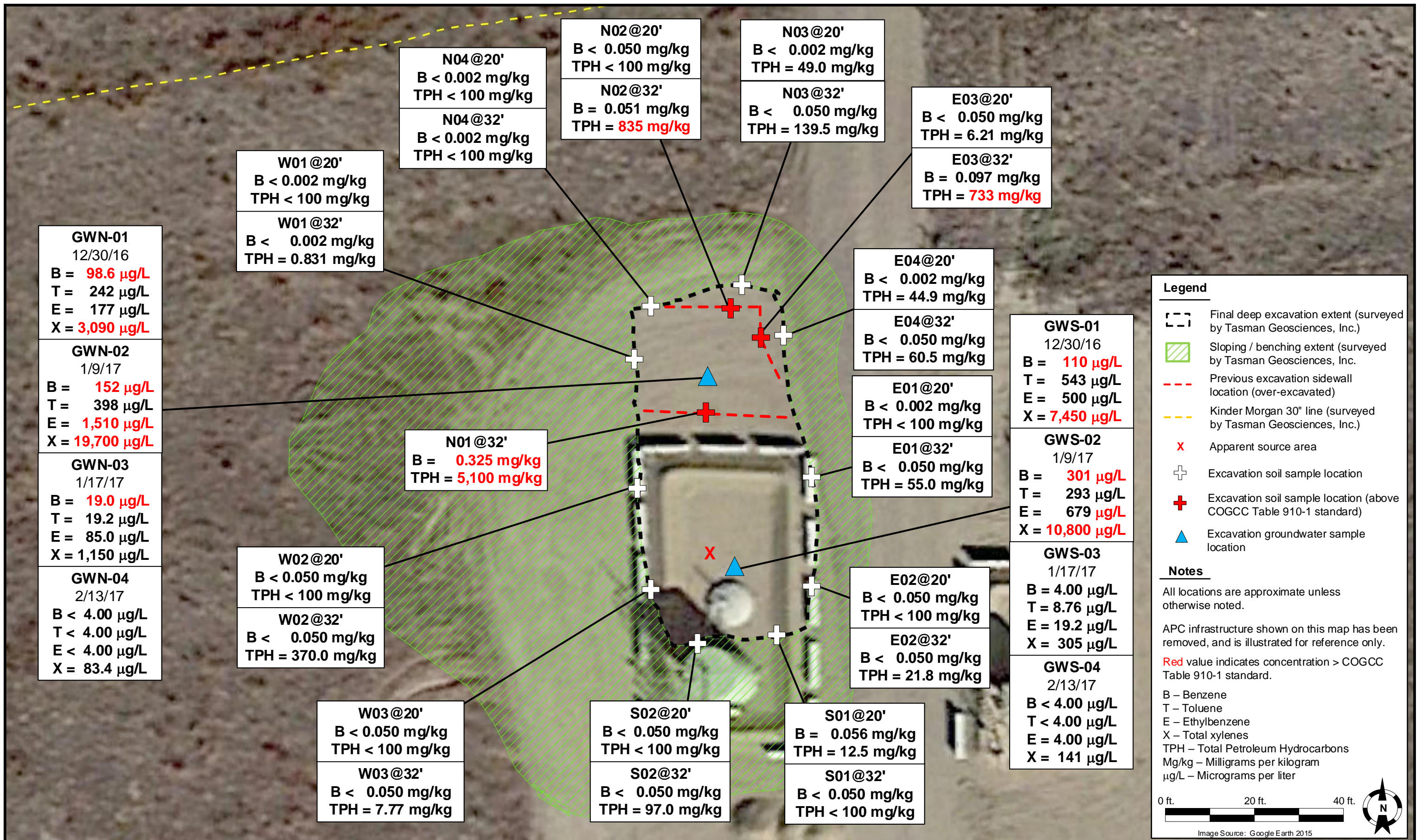
BBLs = Barrels

cu yds = Cubic yards

(~) = approximate depth measured below ground surface.

BOLD = Analytical result is in exceedance of COGCC Table 910-1 groundwater standards.

FIGURE



ATTACHMENT
LABORATORY ANALYTICAL REPORTS



December 14, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1 Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. December 13, 2016. This project is associated with Origins project number X612151-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01 @ 32'	X612151-01	Soil	December 13, 2016 15:00	12/13/2016 16:45
E01 @ 32'	X612151-03	Soil	December 13, 2016 15:10	12/13/2016 16:45
E01 @ 20'	X612151-04	Soil	December 13, 2016 15:15	12/13/2016 16:45

Per the phone call from Rob on 12/14/16, the sample ID for E02 @20' was changed to E01 @ 20' and the sample was taken off hold for a same day TAT.

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

www.originslaboratory.com page 1 of 1

X612151

ORIGINS LABORATORY, INC

Client: APC
Address: _____
Telephone Number: 970 470 9042
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #X1
Project Number: 89101289
Samples Collected By: R. King

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
N01032'	12/13/16	1500	2	X				X			On Hold	1
N01020'	12/13/16	1505	2	X				X			On Hold	2
E01032'	12/13/16	1510	2	X				X			On Hold	3
E02020'	12/13/16	1515	2	X				X			On Hold	4
												5
												6
												7
												8
												9
												10

Relinquished By: [Signature] Date: 12/13/16 Time: 1415
Relinquished By: [Signature] Date: 12/13/16 Time: 1645

Received By: [Signature] Date: 12/13/16 Time: 1645
Received By: [Signature] Date: 12/13/16 Time: 1645

Turnaround Time: ☒ Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard

Temp Received: 3.7 Date Results Needed: _____

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

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X612151

Client: Tasman

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: Jefé Smith

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

Date/time completed: 12-13-12

Airbill #: NA

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

Cooler Number/Temperature: 1 / 37 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: T253

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

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

Reviewed by (Project Manager) Jefé Smith

Date/Time Reviewed 12-13-12

Origins Laboratory, Inc.

Jefé Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N01 @ 32'

12/13/2016 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612151-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	2460	25.0	mg/kg	1	B6L1305	12/13/2016	12/13/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 70.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	2640	50.0	mg/kg	250	B6L1302	12/13/2016	12/13/2016	
Benzene	0.325	0.050	"	25	"	"	12/13/2016	
Toluene	0.071	0.050	"	"	"	"	"	
Ethylbenzene	18.8	0.498	"	250	"	"	12/13/2016	
Xylenes, total	224	0.498	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 93.6 % 70-130 " " "

Surrogate: Toluene-d8 84.3 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 124 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E01 @ 32'

12/13/2016 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612151-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	31.8	25.0	mg/kg	1	B6L1305	12/13/2016	12/13/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

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

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	23.2	5.00	mg/kg	25	B6L1302	12/13/2016	12/13/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.110	0.050	"	"	"	"	"	
Xylenes, total	1.88	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 93.0 % 70-130 " " "

Surrogate: Toluene-d8 101 % 70-130 " " "

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

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E01 @ 20'

12/13/2016 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612151-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1402	12/14/2016	12/14/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 93.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L1401	12/14/2016	12/14/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.8 % 70-130 " " "
Surrogate: Toluene-d8 98.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1302 - EPA 5030 (soil)										
Blank (B6L1302-BLK1)					Prepared: 12/13/2016 Analyzed: 12/13/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.2	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1302 - EPA 5030 (soil)										
LCS (B6L1302-BS1)					Prepared: 12/13/2016 Analyzed: 12/13/2016					
Benzene	0.096	0.002	mg/kg	0.100		95.7	77.1-124			
Toluene	0.084	0.002	"	0.100		84.1	74.5-128			
Ethylbenzene	0.097	0.002	"	0.100		96.9	66.4-127			
m,p-Xylene	0.199	0.004	"	0.200		99.6	76.6-124			
o-Xylene	0.099	0.002	"	0.100		99.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		84.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.7	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1302 - EPA 5030 (soil)

Matrix Spike (B6L1302-MS1)		Source: X612129-01			Prepared: 12/13/2016 Analyzed: 12/13/2016					
Benzene	0.084	0.002	mg/kg	0.100	ND	84.3	71.8-126			
Toluene	0.076	0.002	"	0.100	ND	75.5	65.1-130			
Ethylbenzene	0.091	0.002	"	0.100	ND	90.8	62.2-130			
m,p-Xylene	0.186	0.004	"	0.200	ND	92.9	46.5-137			
o-Xylene	0.091	0.002	"	0.100	ND	91.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		95.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1302 - EPA 5030 (soil)

Matrix Spike Dup (B6L1302-MSD1)		Source: X612129-01			Prepared: 12/13/2016 Analyzed: 12/13/2016					
Benzene	0.094	0.002	mg/kg	0.100	ND	93.8	71.8-126	10.7	11.3	
Toluene	0.083	0.002	"	0.100	ND	83.0	65.1-130	9.44	15.4	
Ethylbenzene	0.097	0.002	"	0.100	ND	96.9	62.2-130	6.46	19.6	
m,p-Xylene	0.197	0.004	"	0.200	ND	98.6	46.5-137	5.96	19.2	
o-Xylene	0.098	0.002	"	0.100	ND	97.6	54.2-134	7.00	17.9	
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1401 - EPA 5030 (soil)										
Blank (B6L1401-BLK1)					Prepared: 12/14/2016 Analyzed: 12/14/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		96.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1401 - EPA 5030 (soil)										
LCS (B6L1401-BS1)					Prepared: 12/14/2016 Analyzed: 12/14/2016					
Benzene	0.096	0.002	mg/kg	0.100		96.2	77.1-124			
Toluene	0.087	0.002	"	0.100		87.3	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		98.6	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.107	0.002	"	0.100		107	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1401 - EPA 5030 (soil)

Matrix Spike (B6L1401-MS1)		Source: X612151-04			Prepared: 12/14/2016 Analyzed: 12/14/2016					
Benzene	0.102	0.002	mg/kg	0.100	ND	102	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	89.6	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.5	62.2-130			
m,p-Xylene	0.206	0.004	"	0.200	ND	103	46.5-137			
o-Xylene	0.108	0.002	"	0.100	ND	108	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1401 - EPA 5030 (soil)

Matrix Spike Dup (B6L1401-MSD1)		Source: X612151-04			Prepared: 12/14/2016 Analyzed: 12/14/2016					
Benzene	0.104	0.002	mg/kg	0.100	ND	104	71.8-126	2.35	11.3	
Toluene	0.091	0.002	"	0.100	ND	91.2	65.1-130	1.81	15.4	
Ethylbenzene	0.103	0.002	"	0.100	ND	103	62.2-130	3.34	19.6	
m,p-Xylene	0.210	0.004	"	0.200	ND	105	46.5-137	1.65	19.2	
o-Xylene	0.111	0.002	"	0.100	ND	111	54.2-134	2.23	17.9	
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1305 - EPA 3580

Blank (B6L1305-BLK1)

Prepared: 12/13/2016 Analyzed: 12/13/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	35		"	50.0		70.8	59-131			

LCS (B6L1305-BS1)

Prepared: 12/13/2016 Analyzed: 12/13/2016

Diesel (C10-C28)	822	50.0	mg/kg	1000		82.2	64-121			
Residual Range Organics (C28-C40)	822	200	"	1000		82.2	58-124			
Surrogate: o-Terphenyl	34		"	50.0		68.0	59-131			

Matrix Spike (B6L1305-MS1)

Source: X612129-01

Prepared: 12/13/2016 Analyzed: 12/13/2016

Diesel (C10-C28)	988	50.0	mg/kg	1000	28.3	96.0	53-125			
Residual Range Organics (C28-C40)	1030	200	"	1000	35.8	99.2	47-133			
Surrogate: o-Terphenyl	41		"	50.0		81.8	59-131			

Matrix Spike Dup (B6L1305-MSD1)

Source: X612129-01

Prepared: 12/13/2016 Analyzed: 12/13/2016

Diesel (C10-C28)	971	50.0	mg/kg	1000	28.3	94.3	53-125	1.77	20	
Residual Range Organics (C28-C40)	1050	200	"	1000	35.8	101	47-133	1.78	20	
Surrogate: o-Terphenyl	43		"	50.0		85.2	59-131			

Batch B6L1402 - EPA 3580

Blank (B6L1402-BLK1)

Prepared: 12/14/2016 Analyzed: 12/14/2016

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1402 - EPA 3580										
Blank (B6L1402-BLK1)					Prepared: 12/14/2016 Analyzed: 12/14/2016					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.1	59-131			
LCS (B6L1402-BS1)					Prepared: 12/14/2016 Analyzed: 12/14/2016					
Diesel (C10-C28)	945	50.0	mg/kg	1000		94.5	64-121			
Residual Range Organics (C28-C40)	857	200	"	1000		85.7	58-124			
Surrogate: o-Terphenyl	40		"	50.0		80.0	59-131			
Matrix Spike (B6L1402-MS1)					Source: X612151-04		Prepared: 12/14/2016 Analyzed: 12/14/2016			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	14.9	100	53-125			
Residual Range Organics (C28-C40)	1010	200	"	1000	16.1	99.7	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.3	59-131			
Matrix Spike Dup (B6L1402-MSD1)					Source: X612151-04		Prepared: 12/14/2016 Analyzed: 12/14/2016			
Diesel (C10-C28)	1020	50.0	mg/kg	1000	14.9	101	53-125	0.322	20	
Residual Range Organics (C28-C40)	1010	200	"	1000	16.1	99.6	47-133	0.104	20	
Surrogate: o-Terphenyl	45		"	50.0		89.4	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



December 16, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1

Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. December 15, 2016. This project is associated with Origins project number X612187-01.

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

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

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

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

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

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



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02@32'	X612187-01	Soil	December 15, 2016 14:00	12/15/2016 17:31
E02@20'	X612187-02	Soil	December 15, 2016 14:05	12/15/2016 17:31
E03@32'	X612187-03	Soil	December 15, 2016 14:10	12/15/2016 17:31
E03@20'	X612187-04	Soil	December 15, 2016 14:15	12/15/2016 17:31
S01@32'	X612187-05	Soil	December 15, 2016 14:20	12/15/2016 17:31
S01@20'	X612187-06	Soil	December 15, 2016 14:25	12/15/2016 17:31
N02@32'	X612187-07	Soil	December 15, 2016 14:30	12/15/2016 17:31
N02@20'	X612187-08	Soil	December 15, 2016 14:35	12/15/2016 17:31
CS01	X612187-09	Soil	December 15, 2016 15:30	12/15/2016 17:31
CS02	X612187-10	Soil	December 15, 2016 15:35	12/15/2016 17:31
CS03	X612187-11	Soil	December 15, 2016 15:40	12/15/2016 17:31
CS04	X612187-12	Soil	December 15, 2016 15:45	12/15/2016 17:31

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

www.originslaboratory.com

page 1 of 2

ORIGINS LABORATORY, INC

Client: APC

Address:

Telephone Number: 9704709042

Email Address: bcornez@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Adamson Ernie F GU #X1

Project Number: 89101289

Samples Collected By: PK

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa		
E02@32'	12/15/16	1400	2	X								1
E02@20'		1405	1									2
E03@32'		1410	1									3
E03@20'		1415	1									4
S01@32'		1420	1									5
S01@20'		1425	1									6
N02@32'		1430	1									7
N02@20'		1435	1									8
C501		1530	1									9
C502		1535	1									10
Relinquished By:	Date: 12/15/16	Time: 1731	Received By:	Date: 12/15/16	Time: 1731	Received By:	Date: 12/15/16	Time: 1731	Received By:	Date: 12/15/16	Time: 1731	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

Temp Received: 10.0

Date Results Needed:

Origins Laboratory, Inc.

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Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

ORIGINS LABORATORY, INC

www.originslaboratory.com
page 2 of 2

Client: APC

Address: _____

Telephone Number: 970 470 9042

Email Address: rconerz@acmco-glo.com

Project Manager: B. S. Carner

Project Name: Adenison Enrie F GU #1X

Project Number: 8901289

Samples Collected By: RKI

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other		
C503	12/15/16	1540	2	X				X	X			8260 8015 TH DRE, DRO	1
C504	12/15/16	1545	2	X				X	X				2
													3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <u>[Signature]</u>	Date: <u>12/15/16</u>	Time: <u>1731</u>	Received By:	Date: <u>12/15/16</u>		Time: <u>1731</u>		Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input type="checkbox"/>					
Relinquished By:	Date:	Time:	Received By: <u>[Signature]</u>	Date: <u>12/15/16</u>		Time: <u>1731</u>							

Temp Received: 10.0° Date Results Needed

Origins Laboratory, Inc.

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 8612187

Client: Tasman Geosciences

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: Joe Henderson

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

Date/time completed: 12/5/16 1150

Airbill #: NP

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

Cooler Number/Temperature: 1 / 10 °C 0 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E02@32'

12/15/2016 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/15/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	72.1 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	21.8	5.00	mg/kg	25	B6L1509	12/15/2016	12/15/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.082	0.050	"	"	"	"	"	
Xylenes, total	1.44	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E02@20'

12/15/2016 2:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/15/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 70.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "
Surrogate: Toluene-d8 96.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 96.7 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E03@32'

12/15/2016 2:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	404	25.0	mg/kg	1	B6L1510	12/15/2016	12/15/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	65.2 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	329	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	0.097	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	1.16	0.050	"	"	"	"	"	
Xylenes, total	21.4	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E03@20'

12/15/2016 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 77.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.21	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "

Surrogate: Toluene-d8 95.9 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 97.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

S01@32'

12/15/2016 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	72.0 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	0.138	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.2 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

S01@20'

12/15/2016 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 71.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	12.5	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	0.056	0.050	"	"	"	"	"	
Toluene	0.061	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	0.190	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "
Surrogate: Toluene-d8 95.3 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.2 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N02@32'

12/15/2016 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	395	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	70.4 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	440	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	0.051	0.050	"	"	"	"	"	
Toluene	1.37	0.050	"	"	"	"	"	
Ethylbenzene	2.61	0.050	"	"	"	"	"	
Xylenes, total	51.5	0.498	"	250	"	"	12/15/2016	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	12/16/2016	
Surrogate: Toluene-d8	113 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N02@20'

12/15/2016 2:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612187-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 84.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L1509	12/15/2016	12/15/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "

Surrogate: Toluene-d8 97.0 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 97.5 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CS01

12/15/2016 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612187-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	38.9	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 69.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	119	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.224	0.050	"	"	"	"	"	
Xylenes, total	4.40	0.050	"	"	"	"	"	

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

Surrogate: Toluene-d8 98.4 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CS02

12/15/2016 3:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612187-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	26.8	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 64.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	79.8	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.164	0.050	"	"	"	"	"	
Xylenes, total	3.15	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "

Surrogate: Toluene-d8 96.1 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 99.0 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CS03

12/15/2016 3:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612187-11 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	28.8	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 65.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	16.8	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.384	0.050	"	"	"	"	"	
Xylenes, total	0.792	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 91.7 % 70-130 " " "
Surrogate: Toluene-d8 99.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CS04

12/15/2016 3:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612187-12 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	30.2	25.0	mg/kg	1	B6L1510	12/15/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 79.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	68.3	5.00	mg/kg	25	B6L1509	12/15/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.237	0.050	"	"	"	"	"	
Xylenes, total	5.28	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 92.8 % 70-130 " " "
Surrogate: Toluene-d8 95.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 108 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1509 - EPA 5030 (soil)										
Blank (B6L1509-BLK1)					Prepared: 12/15/2016 Analyzed: 12/15/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1509 - EPA 5030 (soil)										
LCS (B6L1509-BS1)					Prepared: 12/15/2016 Analyzed: 12/15/2016					
Benzene	0.107	0.002	mg/kg	0.100		107	77.1-124			
Toluene	0.091	0.002	"	0.100		90.7	74.5-128			
Ethylbenzene	0.110	0.002	"	0.100		110	66.4-127			
m,p-Xylene	0.228	0.004	"	0.200		114	76.6-124			
o-Xylene	0.115	0.002	"	0.100		115	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1509 - EPA 5030 (soil)

Matrix Spike (B6L1509-MS1)		Source: X612183-01			Prepared: 12/15/2016 Analyzed: 12/15/2016					
Benzene	0.110	0.002	mg/kg	0.100	ND	110	71.8-126			
Toluene	0.096	0.002	"	0.100	0.004	91.9	65.1-130			
Ethylbenzene	0.117	0.002	"	0.100	ND	117	62.2-130			
m,p-Xylene	0.239	0.004	"	0.200	ND	119	46.5-137			
o-Xylene	0.121	0.002	"	0.100	ND	121	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	48		ug/kg	62.5		76.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1509 - EPA 5030 (soil)										
Matrix Spike Dup (B6L1509-MSD1)			Source: X612183-01		Prepared: 12/15/2016 Analyzed: 12/15/2016					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126	1.76	11.3	
Toluene	0.096	0.002	"	0.100	0.004	91.3	65.1-130	0.687	15.4	
Ethylbenzene	0.114	0.002	"	0.100	ND	114	62.2-130	2.58	19.6	
m,p-Xylene	0.232	0.004	"	0.200	ND	116	46.5-137	2.78	19.2	
o-Xylene	0.119	0.002	"	0.100	ND	119	54.2-134	2.31	17.9	
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1510 - EPA 3580

Blank (B6L1510-BLK1)

Prepared: 12/15/2016 Analyzed: 12/15/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.6	59-131			

LCS (B6L1510-BS1)

Prepared: 12/15/2016 Analyzed: 12/15/2016

Diesel (C10-C28)	1000	50.0	mg/kg	1000		100	64-121			
Residual Range Organics (C28-C40)	955	200	"	1000		95.5	58-124			
Surrogate: o-Terphenyl	42		"	50.0		84.8	59-131			

Matrix Spike (B6L1510-MS1)

Source: X612183-01

Prepared: 12/15/2016 Analyzed: 12/15/2016

Diesel (C10-C28)	979	50.0	mg/kg	1000	ND	97.9	53-125			
Residual Range Organics (C28-C40)	914	200	"	1000	15.2	89.9	47-133			
Surrogate: o-Terphenyl	42		"	50.0		84.1	59-131			

Matrix Spike Dup (B6L1510-MSD1)

Source: X612183-01

Prepared: 12/15/2016 Analyzed: 12/15/2016

Diesel (C10-C28)	980	50.0	mg/kg	1000	ND	98.0	53-125	0.114	20	
Residual Range Organics (C28-C40)	898	200	"	1000	15.2	88.2	47-133	1.85	20	
Surrogate: o-Terphenyl	43		"	50.0		85.9	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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December 19, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1 Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. December 16, 2016. This project is associated with Origins project number X612205-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N03 @ 32'	X612205-01	Soil	December 16, 2016 9:30	12/16/2016 16:40
N03 @ 20'	X612205-02	Soil	December 16, 2016 9:35	12/16/2016 16:40
E04 @ 32'	X612205-03	Soil	December 16, 2016 9:40	12/16/2016 16:40
E04 @ 20'	X612205-04	Soil	December 16, 2016 9:45	12/16/2016 16:40

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

www.originslaboratory.com page 1 of 1

X612205

Client: ALC
Address: _____
Telephone Number: 9704109042
Email Address: 160122@bms.mn-822024

Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #X1
Project Number: 89101289
Samples Collected By: P. Irvin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summation			Other
N03@32'	12/11/15	0930	2	X									1
N03@20'	12/11/15	0935	1										2
E04@32'	12/11/15	0940	1										3
E04@20'	12/11/15	0945	1										4
													5
													6
													7
													8
													9
													10

Relinquished By: _____ Date: 12/11/15 Time: 16:10
Relinquished By: _____ Date: 12/16/16 Time: 16:40

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐

Temp Received: 3,3 Date Results Needed: _____

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

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X612203

Client: Tasman

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: JFF Smith

Shipped Via: Exel 40
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12-16-12

Airbill #: NA

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

Cooler Number/Temperature: 1 13.2 °C °C °C (Describe) °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<u>/</u>			
Is there ice present (document if blue ice is used)	<u>/</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<u>/</u>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<u>/</u>		
Were all samples received intact ⁽¹⁾ ?	<u>/</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>/</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<u>/</u>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>/</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>/</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>/</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>/</u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<u>/</u>	<u>X</u>	
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)			<u>X</u>	
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: JFF Smith (Project Manager)

Date/Time Reviewed: 12-16-12

Origins Laboratory, Inc.

Jen Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N03 @ 32'

12/16/2016 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612205-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	79.0	25.0	mg/kg	1	B6L1504	12/16/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

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

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	60.5	5.00	mg/kg	25	B6L1602	12/16/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.438	0.050	"	"	"	"	"	
Xylenes, total	1.23	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 95.3 % 70-130 " " "
Surrogate: Toluene-d8 94.1 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 112 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N03 @ 20'

12/16/2016 9:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612205-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	49.0	25.0	mg/kg	1	B6L1504	12/16/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	75.5 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L1602	12/16/2016	12/16/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E04 @ 32'

12/16/2016 9:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612205-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	42.0	25.0	mg/kg	1	B6L1504	12/16/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 64.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	18.5	5.00	mg/kg	25	B6L1602	12/16/2016	12/16/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.268	0.050	"	"	"	"	"	
Xylenes, total	0.661	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 88.5 % 70-130 " " "

Surrogate: Toluene-d8 98.6 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

E04 @ 20'

12/16/2016 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612205-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	44.9	25.0	mg/kg	1	B6L1504	12/16/2016	12/16/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	79.1 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L1602	12/16/2016	12/16/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	
Surrogate: Toluene-d8	94.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1602 - EPA 5030 (soil)										
Blank (B6L1602-BLK1)					Prepared: 12/16/2016 Analyzed: 12/16/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		93.6	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.9	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1602 - EPA 5030 (soil)

LCS (B6L1602-BS1)

Prepared: 12/16/2016 Analyzed: 12/16/2016

Benzene	0.097	0.002	mg/kg	0.100		97.1	77.1-124			
Toluene	0.081	0.002	"	0.100		81.2	74.5-128			
Ethylbenzene	0.093	0.002	"	0.100		92.8	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.4	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		85.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1602 - EPA 5030 (soil)

Matrix Spike (B6L1602-MS1)		Source: X612181-01			Prepared: 12/16/2016 Analyzed: 12/16/2016					
Benzene	0.095	0.002	mg/kg	0.100	ND	95.1	71.8-126			
Toluene	0.079	0.002	"	0.100	ND	78.6	65.1-130			
Ethylbenzene	0.091	0.002	"	0.100	ND	91.0	62.2-130			
m,p-Xylene	0.190	0.004	"	0.200	ND	94.8	46.5-137			
o-Xylene	0.097	0.002	"	0.100	ND	97.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	55		ug/kg	62.5		88.6	70-130			
Surrogate: Toluene-d8	59		"	62.5		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L1602 - EPA 5030 (soil)										
Matrix Spike Dup (B6L1602-MSD1)										
					Source: X612181-01					
										Prepared: 12/16/2016 Analyzed: 12/16/2016
Benzene	0.093	0.002	mg/kg	0.100	ND	93.2	71.8-126	1.98	11.3	
Toluene	0.078	0.002	"	0.100	ND	78.5	65.1-130	0.178	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	92.1	62.2-130	1.27	19.6	
m,p-Xylene	0.189	0.004	"	0.200	ND	94.3	46.5-137	0.487	19.2	
o-Xylene	0.096	0.002	"	0.100	ND	96.0	54.2-134	1.18	17.9	
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L1504 - EPA 3580

Blank (B6L1504-BLK1)

Prepared: 12/15/2016 Analyzed: 12/16/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		75.3	59-131			

LCS (B6L1504-BS1)

Prepared: 12/15/2016 Analyzed: 12/16/2016

Diesel (C10-C28)	710	50.0	mg/kg	1000		71.0	64-121			
Residual Range Organics (C28-C40)	843	200	"	1000		84.3	58-124			
Surrogate: o-Terphenyl	33		"	50.0		65.8	59-131			

Matrix Spike (B6L1504-MS1)

Source: X612152-01

Prepared: 12/15/2016 Analyzed: 12/16/2016

Diesel (C10-C28)	731	50.0	mg/kg	1000	58.6	67.2	53-125			
Residual Range Organics (C28-C40)	920	200	"	1000	95.6	82.5	47-133			
Surrogate: o-Terphenyl	35		"	50.0		69.5	59-131			

Matrix Spike Dup (B6L1504-MSD1)

Source: X612152-01

Prepared: 12/15/2016 Analyzed: 12/16/2016

Diesel (C10-C28)	784	50.0	mg/kg	1000	58.6	72.6	53-125	7.69	20	
Residual Range Organics (C28-C40)	999	200	"	1000	95.6	90.3	47-133	9.05	20	
Surrogate: o-Terphenyl	38		"	50.0		76.1	59-131			

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

December 22, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1 Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. December 21, 2016. This project is associated with Origins project number X612259-01.

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

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

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

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

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

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



Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N04@32'	X612259-01	Soil	December 21, 2016 10:30	12/21/2016 15:00
N04@20'	X612259-02	Soil	December 21, 2016 10:35	12/21/2016 15:00
W01@32'	X612259-03	Soil	December 21, 2016 10:40	12/21/2016 15:00
W01@20'	X612259-04	Soil	December 21, 2016 10:45	12/21/2016 15:00
W02@32'	X612259-05	Soil	December 21, 2016 10:50	12/21/2016 15:00
W02@20'	X612259-06	Soil	December 21, 2016 10:55	12/21/2016 15:00
W03@32'	X612259-07	Soil	December 21, 2016 11:00	12/21/2016 15:00
W03@20'	X612259-08	Soil	December 21, 2016 11:05	12/21/2016 15:00
S02@32'	X612259-09	Soil	December 21, 2016 11:10	12/21/2016 15:00
S02@20'	X612259-10	Soil	December 21, 2016 11:15	12/21/2016 15:00

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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page 1 of 1

162259

ORIGINS LABORATORY, INC

Client: APC
Address:
Telephone Number: 970 470 9042
Email Address: FOR N2 Q15 M10 780.10m

Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #X1
Project Number: 89101289
Samples Collected By: R. Lin

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			
N04 @ 32'	12/21/16	1030	2	X					X			89101289 6 BTEX 8760 8015 THY 8015 PCB	1
N04 @ 20'		1035	1										2
W01 @ 32'		1040	1										3
W01 @ 20'		1045	1										4
W02 @ 32'		1050	1										5
W02 @ 20'		1055	1										6
W03 @ 32'		1100	1										7
W03 @ 20'		1105	1										8
S02 @ 32'		1110	1										9
S02 @ 20'		1115	1										10
Relinquished By:	Date: 12/21/16	Time: 1500		Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Turnaround Time:	
Relinquished By:	Date:	Time:		Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Received By:	Some Day	24 Hr
												48 Hr	72 Hr
												Standard	

Temp Received: 10.1 Date Results Needed: 10/21/16

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

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X1612259

Client: Tasman Geosciences

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: Joe Henderson

Shipped Via: W/D
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12/21/16 1632

Airbill #: NA

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

Cooler Number/Temperature: 1 / 10.1 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: TC03

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

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

Reviewed by (Project Manager)

12/21/16
Date/Time Reviewed

Origins Laboratory, Inc.

Joe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N04@32'

12/21/2016 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	67.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

N04@20'
12/21/2016 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

<i>Surrogate: o-Terphenyl</i>	78.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

<i>Surrogate: 1,2-Dichloroethane-d4</i>	113 %	70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	99.1 %	70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.1 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W01@32'

12/21/2016 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	83.6 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.831	0.200	mg/kg	1	B6L2104	12/21/2016	12/22/2016	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W01@20'
12/21/2016 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	82.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"	
Surrogate: Toluene-d8	97.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W02@32'

12/21/2016 10:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	319	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	73.7 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	51.0	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.3 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W02@20'

12/21/2016 10:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	92.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W03@32'

12/21/2016 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	82.6 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	7.77	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

W03@20'

12/21/2016 11:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	67.4 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

S02@32'

12/21/2016 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	85.4	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	72.1 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	11.6	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

S02@20'

12/21/2016 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612259-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2105	12/21/2016	12/22/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	90.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6L2104	12/21/2016	12/22/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.8 %	70-130			"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.4 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B6L2104 - EPA 5030 (soil)										
Blank (B6L2104-BLK1)					Prepared: 12/21/2016 Analyzed: 12/21/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	56		ug/kg	62.5		90.0	70-130			
Surrogate: Toluene-d8	58		"	62.5		92.3	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: 89101289
 Project: KMG - Adamson Ernie F GU #X1

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 B6L2104 - EPA 5030 (soil)										
LCS (B6L2104-BS1)					Prepared: 12/21/2016 Analyzed: 12/21/2016					
Benzene	0.095	0.002	mg/kg	0.100		94.9	77.1-124			
Toluene	0.097	0.002	"	0.100		97.2	74.5-128			
Ethylbenzene	0.093	0.002	"	0.100		92.9	66.4-127			
m,p-Xylene	0.187	0.004	"	0.200		93.3	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2104 - EPA 5030 (soil)

Matrix Spike (B6L2104-MS1)		Source: X612258-02			Prepared: 12/21/2016 Analyzed: 12/21/2016					
Benzene	0.067	0.002	mg/kg	0.100	ND	66.9	71.8-126			QM-07
Toluene	0.067	0.002	"	0.100	ND	66.6	65.1-130			
Ethylbenzene	0.064	0.002	"	0.100	ND	64.1	62.2-130			
m,p-Xylene	0.129	0.004	"	0.200	ND	64.4	46.5-137			
o-Xylene	0.063	0.002	"	0.100	ND	62.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	71		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2104 - EPA 5030 (soil)

Matrix Spike Dup (B6L2104-MSD1)		Source: X612258-02			Prepared: 12/21/2016 Analyzed: 12/21/2016					
Benzene	0.062	0.002	mg/kg	0.100	ND	61.6	71.8-126	8.19	11.3	QM-07
Toluene	0.059	0.002	"	0.100	ND	59.2	65.1-130	11.7	15.4	QM-07
Ethylbenzene	0.056	0.002	"	0.100	ND	56.0	62.2-130	13.4	19.6	QM-07
m,p-Xylene	0.113	0.004	"	0.200	ND	56.6	46.5-137	12.9	19.2	
o-Xylene	0.055	0.002	"	0.100	ND	55.3	54.2-134	12.7	17.9	
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2105 - EPA 3580

Blank (B6L2105-BLK1)

Prepared: 12/21/2016 Analyzed: 12/22/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	51		"	50.0		101	59-131			

LCS (B6L2105-BS1)

Prepared: 12/21/2016 Analyzed: 12/22/2016

Diesel (C10-C28)	835	50.0	mg/kg	1000		83.5	64-121			
Residual Range Organics (C28-C40)	816	200	"	1000		81.6	58-124			
Surrogate: o-Terphenyl	45		"	50.0		90.2	59-131			

Matrix Spike (B6L2105-MS1)

Source: X612258-02

Prepared: 12/21/2016 Analyzed: 12/22/2016

Diesel (C10-C28)	829	50.0	mg/kg	1000	ND	82.9	53-125			
Residual Range Organics (C28-C40)	795	200	"	1000	ND	79.5	47-133			
Surrogate: o-Terphenyl	34		"	50.0		68.6	59-131			

Matrix Spike Dup (B6L2105-MSD1)

Source: X612258-02

Prepared: 12/21/2016 Analyzed: 12/22/2016

Diesel (C10-C28)	881	50.0	mg/kg	1000	ND	88.1	53-125	6.14	20	
Residual Range Organics (C28-C40)	844	200	"	1000	ND	84.4	47-133	6.03	20	
Surrogate: o-Terphenyl	45		"	50.0		89.8	59-131			

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

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 28, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #1X Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #1X received by Origins Laboratory, Inc. December 27, 2016. This project is associated with Origins project number X612300-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #1X

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS05	X612300-01	Soil	December 27, 2016 14:20	12/27/2016 16:30
CS06	X612300-02	Soil	December 27, 2016 14:25	12/27/2016 16:30
CS07	X612300-03	Soil	December 27, 2016 14:30	12/27/2016 16:30
CS08	X612300-04	Soil	December 27, 2016 14:35	12/27/2016 16:30
CS09	X612300-05	Soil	December 27, 2016 14:40	12/27/2016 16:30
CS10	X612300-06	Soil	December 27, 2016 14:45	12/27/2016 16:30
CS11	X612300-07	Soil	December 27, 2016 14:50	12/27/2016 16:30
CS12	X612300-08	Soil	December 27, 2016 14:55	12/27/2016 16:30
CS13	X612300-09	Soil	December 27, 2016 15:00	12/27/2016 16:30
CS14	X612300-10	Soil	December 27, 2016 15:05	12/27/2016 16:30

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

www.originslaboratory.com

page 1 of 1

XU2300

ORIGINS
LABORATORY, INC

Client: APL
Address: _____
Telephone Number: 303-889-4525
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #1X
Project Number: 89101289
Samples Collected By: Z. Mathis

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ #		
CS05	12/27/16	1420	2	X					X			See Data
CS06		1425	1									
CS07		1430	1									
CS08		1435	1									
CS09		1440	1									
CS10		1445	1									
CS11		1450	1									
CS12		1455	1									
CS13		1500	1									
CS14		1505	1									
Relinquished By: <u>Z. Mathis</u>	Date: <u>12/27/16</u>	Time: <u>1630</u>		Received By: <u>[Signature]</u>				Date: <u>12/27/16</u>			Time: <u>1630</u>	Turnaround Time: <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr
Relinquished By:	Date:	Time:		Received By:				Date:			Time:	Standard <u>2h</u>

Date Results Needed

Temp Received: 9.9

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X612306

Client: Tasman

Client Project ID: _____

Checklist Completed by: Jen Pellegrini

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

Date/time completed: 12/27/16

Airbill #: NA

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

Cooler Number/Temperature: 1 / 9.9 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

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

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

Reviewed By: Jen Pellegrini (Project Manager)

Date/Time Reviewed: 12/27/16

Origins Laboratory, Inc.

Jen Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS05

12/27/2016 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	91.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	55.4	5.00	mg/kg	25	B6L2709	12/27/2016	12/28/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.436	0.050	"	"	"	"	"	
Xylenes, total	1.34	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
Surrogate: Toluene-d8	97.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS06

12/27/2016 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612300-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	82.4 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	38.4	5.00	mg/kg	25	B6L2709	12/27/2016	12/28/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.160	0.050	"	"	"	"	"	
Xylenes, total	0.403	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.2 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS07

12/27/2016 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612300-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	54.8	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	0.126	0.050	"	"	"	"	"	
Xylenes, total	0.332	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "

Surrogate: Toluene-d8 96.7 % 70-130 " " "

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

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS08

12/27/2016 2:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612300-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 98.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	15.2	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.9 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS09

12/27/2016 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 85.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	20.5	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "

Surrogate: Toluene-d8 99.3 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS10

12/27/2016 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/27/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 72.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	72.2	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	0.096	0.050	"	"	"	"	"	
Ethylbenzene	0.156	0.050	"	"	"	"	"	
Xylenes, total	5.41	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 97.3 % 70-130 " " "

Surrogate: Toluene-d8 95.7 % 70-130 " " "

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

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS11

12/27/2016 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/28/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 73.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	50.4	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	1.11	0.050	"	"	"	"	"	

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

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

Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS12

12/27/2016 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/28/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 89.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	21.8	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 107 % 70-130 " " "

Surrogate: Toluene-d8 99.0 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS13

12/27/2016 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/28/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 88.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	58.3	5.00	mg/kg	25	B6L2709	12/27/2016	12/27/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	0.124	0.050	"	"	"	"	"	

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

Surrogate: Toluene-d8 97.2 % 70-130 " " "

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

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS14

12/27/2016 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612300-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6L2712	12/27/2016	12/28/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	71.6 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	50.3	5.00	mg/kg	25	B6L2709	12/27/2016	12/28/2016	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B6L2709 - EPA 5030 (soil)										
Blank (B6L2709-BLK1)					Prepared: 12/27/2016 Analyzed: 12/27/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B6L2709 - EPA 5030 (soil)										
LCS (B6L2709-BS1)					Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		95.8	66.4-127			
m,p-Xylene	0.192	0.004	"	0.200		95.8	76.6-124			
o-Xylene	0.094	0.002	"	0.100		94.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	55		ug/kg	62.5		87.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2709 - EPA 5030 (soil)

Matrix Spike (B6L2709-MS1)		Source: X612298-01			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.098	0.002	"	0.100	ND	98.0	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	93.0	62.2-130			
m,p-Xylene	0.184	0.004	"	0.200	ND	91.8	46.5-137			
o-Xylene	0.091	0.002	"	0.100	ND	91.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		85.4	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2709 - EPA 5030 (soil)

Matrix Spike Dup (B6L2709-MSD1)		Source: X612298-01			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	0.105	0.002	mg/kg	0.100	ND	105	71.8-126	4.00	11.3	
Toluene	0.103	0.002	"	0.100	ND	103	65.1-130	4.92	15.4	
Ethylbenzene	0.096	0.002	"	0.100	ND	96.1	62.2-130	3.32	19.6	
m,p-Xylene	0.193	0.004	"	0.200	ND	96.4	46.5-137	4.84	19.2	
o-Xylene	0.096	0.002	"	0.100	ND	96.0	54.2-134	5.11	17.9	
Surrogate: 1,2-Dichloroethane-d4	70		ug/kg	62.5		112	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.4	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L2712 - EPA 3580

Blank (B6L2712-BLK1)

Prepared: 12/27/2016 Analyzed: 12/27/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		93.3	59-131			

LCS (B6L2712-BS1)

Prepared: 12/27/2016 Analyzed: 12/27/2016

Diesel (C10-C28)	847	50.0	mg/kg	1000		84.7	64-121			
Residual Range Organics (C28-C40)	765	200	"	1000		76.5	58-124			
Surrogate: o-Terphenyl	43		"	50.0		85.4	59-131			

Matrix Spike (B6L2712-MS1)

Source: X612298-01

Prepared: 12/27/2016 Analyzed: 12/27/2016

Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	53-125			
Residual Range Organics (C28-C40)	958	200	"	1000	ND	95.8	47-133			
Surrogate: o-Terphenyl	50		"	50.0		100	59-131			

Matrix Spike Dup (B6L2712-MSD1)

Source: X612298-01

Prepared: 12/27/2016 Analyzed: 12/27/2016

Diesel (C10-C28)	820	50.0	mg/kg	1000	ND	82.0	53-125	20.6	20	QR-02
Residual Range Organics (C28-C40)	774	200	"	1000	ND	77.4	47-133	21.3	20	QR-02
Surrogate: o-Terphenyl	43		"	50.0		85.5	59-131			

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #1X

Notes and Definitions

U Sample is Non-Detect.

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



February 10, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #1X

Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #1X received by Origins Laboratory, Inc. February 08, 2017. This project is associated with Origins project number X702183-01.

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

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

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

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

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

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



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS15	X702183-01	Soil	February 8, 2017 10:00	02/08/2017 15:45
CS16	X702183-02	Soil	February 8, 2017 10:05	02/08/2017 15:45
CS17	X702183-03	Soil	February 8, 2017 10:10	02/08/2017 15:45
CS18	X702183-04	Soil	February 8, 2017 10:15	02/08/2017 15:45
CS19	X702183-05	Soil	February 8, 2017 10:20	02/08/2017 15:45

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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X702183

page 1 of 1

Client: APC
Address: _____
Telephone Number: 970 470 9042
Email Address: CORNEZ@tasmangeo.com
Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #1X
Project Number: 89101289
Samples Collected By: R Irvin

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa	Other	Other	
C515	2/9/17	1000	2	X					X				1
C516	1005		1										2
C517	1010		1										3
C518	1015		1										4
C519	1020		1										5
													6
													7
													8
													9
													10
Relinquished By:	Date: 2/8/17	Time: 1545	Received By:	Date: 2/8/17	Time: 1545	Received By:	Date: 2/8/17	Time: 1545	Received By:	Date: 2/8/17	Time: 1545	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:	Received By:	Date:	Time:		

Temp Received: 9.6 Date Results Needed

Origins Laboratory, Inc.

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1702183

Client: Tasman Geosciences

Client Project ID: KMG - Adamson Ernie F GU #1

Checklist Completed by: Dr. Lee

Shipped Via: Pick-up

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

Date/time completed: 2-8-12 18:15

Airbill #: _____

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

Cooler Number/Temperature: 1 / 9.6 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

Thermometer ID: R003

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

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 2/11/12

Origins Laboratory, Inc.

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS15

2/8/2017 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702183-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7B0902	02/09/2017	02/09/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	110 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	4.24	0.200	mg/kg	1	B7B0901	02/09/2017	02/09/2017	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	0.010	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	87.9 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	114 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS16

2/8/2017 10:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702183-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7B0902	02/09/2017	02/09/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	108 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	9.18	0.200	mg/kg	1	B7B0901	02/09/2017	02/09/2017	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	0.002	0.002	"	"	"	"	"	
Xylenes, total	0.067	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.9 %	70-130			"	"	"	
Surrogate: Toluene-d8	76.8 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	152 %	70-130			"	"	" S-04	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS17

2/8/2017 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702183-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7B0902	02/09/2017	02/09/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 93.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.805	0.200	mg/kg	1	B7B0901	02/09/2017	02/09/2017	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	0.006	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 97.8 % 70-130 " " "
Surrogate: Toluene-d8 109 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 87.2 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS18

2/8/2017 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702183-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7B0902	02/09/2017	02/09/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	91.3 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.229	0.200	mg/kg	1	B7B0901	02/09/2017	02/09/2017	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	94.5 %	70-130			"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	93.6 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

CS19

2/8/2017 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702183-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7B0902	02/09/2017	02/09/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	92.9 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	1.57	0.200	mg/kg	1	B7B0901	02/09/2017	02/09/2017	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	0.006	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	86.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Blank (B7B0901-BLK1)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	64		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	58		"	62.5		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Blank (B7B0901-BLK2)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Blank (B7B0901-BLK3)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		94.2	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.1	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Blank (B7B0901-BLK4)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.5	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.8	70-130			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
LCS (B7B0901-BS1)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.102	0.002	mg/kg	0.100		102	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.104	0.002	"	0.100		104	66.4-127			
m,p-Xylene	0.209	0.004	"	0.200		104	76.6-124			
o-Xylene	0.105	0.002	"	0.100		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		ug/kg	62.5		92.1	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

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Bob Cornez
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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 B7B0901 - EPA 5030 (soil)										
LCS (B7B0901-BS2)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.084	0.002	mg/kg	0.100		84.2	77.1-124			
Toluene	0.088	0.002	"	0.100		87.9	74.5-128			
Ethylbenzene	0.091	0.002	"	0.100		90.8	66.4-127			
m,p-Xylene	0.184	0.004	"	0.200		91.9	76.6-124			
o-Xylene	0.090	0.002	"	0.100		89.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	66		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
LCS (B7B0901-BS3)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.091	0.002	mg/kg	0.100		91.2	77.1-124			
Toluene	0.117	0.002	"	0.100		117	74.5-128			
Ethylbenzene	0.107	0.002	"	0.100		107	66.4-127			
m,p-Xylene	0.220	0.004	"	0.200		110	76.6-124			
o-Xylene	0.107	0.002	"	0.100		107	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	47		ug/kg	62.5		75.8	70-130			
Surrogate: Toluene-d8	72		"	62.5		114	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.0	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
LCS (B7B0901-BS4)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.098	0.002	mg/kg	0.100		98.4	77.1-124			
Toluene	0.104	0.002	"	0.100		104	74.5-128			
Ethylbenzene	0.103	0.002	"	0.100		103	66.4-127			
m,p-Xylene	0.213	0.004	"	0.200		107	76.6-124			
o-Xylene	0.107	0.002	"	0.100		107	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	51		ug/kg	62.5		82.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.1	70-130			

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Denver CO 80211

Bob Cornez
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Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike (B7B0901-MS1)		Source: X702183-01			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.084	0.002	mg/kg	0.100	ND	84.4	71.8-126			
Toluene	0.094	0.002	"	0.100	ND	93.7	65.1-130			
Ethylbenzene	0.088	0.002	"	0.100	ND	87.7	62.2-130			
m,p-Xylene	0.179	0.004	"	0.200	0.001	88.8	46.5-137			
o-Xylene	0.112	0.002	"	0.100	0.010	102	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	50		ug/kg	62.5		80.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	73		"	62.5		117	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike (B7B0901-MS2)		Source: X702183-02			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.094	0.002	mg/kg	0.100	ND	93.9	71.8-126			
Toluene	0.088	0.002	"	0.100	ND	88.5	65.1-130			
Ethylbenzene	0.081	0.002	"	0.100	0.002	79.1	62.2-130			
m,p-Xylene	0.152	0.004	"	0.200	0.007	72.5	46.5-137			
o-Xylene	0.164	0.002	"	0.100	0.060	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		85.2	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	72		"	62.5		115	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike (B7B0901-MS3)		Source: X702183-03			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.099	0.002	mg/kg	0.100	ND	99.3	71.8-126			
Toluene	0.107	0.002	"	0.100	ND	107	65.1-130			
Ethylbenzene	0.089	0.002	"	0.100	ND	88.8	62.2-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	91.2	46.5-137			
o-Xylene	0.095	0.002	"	0.100	0.006	88.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.9	70-130			
Surrogate: Toluene-d8	70		"	62.5		113	70-130			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		86.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike (B7B0901-MS4)		Source: X702183-04			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.102	0.002	mg/kg	0.100	ND	102	71.8-126			
Toluene	0.113	0.002	"	0.100	ND	113	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	ND	93.9	62.2-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	91.2	46.5-137			
o-Xylene	0.096	0.002	"	0.100	ND	96.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.1	70-130			
Surrogate: Toluene-d8	72		"	62.5		116	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.0	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike Dup (B7B0901-MSD1)		Source: X702183-01			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.098	0.002	mg/kg	0.100	ND	97.7	71.8-126	14.6	11.3	QR-02
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	8.46	15.4	
Ethylbenzene	0.093	0.002	"	0.100	ND	93.4	62.2-130	6.29	19.6	
m,p-Xylene	0.206	0.004	"	0.200	0.001	102	46.5-137	14.3	19.2	
o-Xylene	0.122	0.002	"	0.100	0.010	112	54.2-134	8.90	17.9	
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		83.8	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	71		"	62.5		113	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0901 - EPA 5030 (soil)

Matrix Spike Dup (B7B0901-MSD2)		Source: X702183-02			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.097	0.002	mg/kg	0.100	ND	96.9	71.8-126	3.15	11.3	
Toluene	0.089	0.002	"	0.100	ND	89.4	65.1-130	1.03	15.4	
Ethylbenzene	0.074	0.002	"	0.100	0.002	71.8	62.2-130	9.40	19.6	
m,p-Xylene	0.158	0.004	"	0.200	0.007	75.8	46.5-137	4.18	19.2	
o-Xylene	0.183	0.002	"	0.100	0.060	123	54.2-134	11.1	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	79		"	62.5		126	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Matrix Spike Dup (B7B0901-MSD3)			Source: X702183-03		Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.086	0.002	mg/kg	0.100	ND	86.5	71.8-126	13.8	11.3	QR-02
Toluene	0.098	0.002	"	0.100	ND	97.6	65.1-130	8.74	15.4	
Ethylbenzene	0.086	0.002	"	0.100	ND	85.9	62.2-130	3.39	19.6	
m,p-Xylene	0.170	0.004	"	0.200	ND	85.2	46.5-137	6.78	19.2	
o-Xylene	0.092	0.002	"	0.100	0.006	86.6	54.2-134	2.35	17.9	
Surrogate: 1,2-Dichloroethane-d4	46		ug/kg	62.5		73.2	70-130			
Surrogate: Toluene-d8	61		"	62.5		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0901 - EPA 5030 (soil)										
Matrix Spike Dup (B7B0901-MSD4)		Source: X702183-04			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Benzene	0.100	0.002	mg/kg	0.100	ND	100	71.8-126	1.76	11.3	
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130	7.26	15.4	
Ethylbenzene	0.098	0.002	"	0.100	ND	98.3	62.2-130	4.60	19.6	
m,p-Xylene	0.189	0.004	"	0.200	ND	94.7	46.5-137	3.73	19.2	
o-Xylene	0.102	0.002	"	0.100	ND	102	54.2-134	6.25	17.9	
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.7	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0902 - EPA 3580

Blank (B7B0902-BLK1)

Prepared: 02/09/2017 Analyzed: 02/09/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		94.4	59-131			

Blank (B7B0902-BLK2)

Prepared: 02/09/2017 Analyzed: 02/09/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	61		"	50.0		121	59-131			

Blank (B7B0902-BLK3)

Prepared: 02/09/2017 Analyzed: 02/09/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	49		"	50.0		97.1	59-131			

Blank (B7B0902-BLK4)

Prepared: 02/09/2017 Analyzed: 02/09/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	35		"	50.0		70.3	59-131			

LCS (B7B0902-BS1)

Prepared: 02/09/2017 Analyzed: 02/09/2017

Diesel (C10-C28)	963	50.0	mg/kg	1000		96.3	64-121			
Residual Range Organics (C28-C40)	1050	200	"	1000		105	58-124			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0902 - EPA 3580										
LCS (B7B0902-BS1)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Surrogate: o-Terphenyl	43		mg/kg	50.0		86.1	59-131			
LCS (B7B0902-BS2)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	799	50.0	mg/kg	1000		79.9	64-121			
Residual Range Organics (C28-C40)	787	200	"	1000		78.7	58-124			
Surrogate: o-Terphenyl	35		"	50.0		70.6	59-131			
LCS (B7B0902-BS3)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	813	50.0	mg/kg	1000		81.3	64-121			
Residual Range Organics (C28-C40)	822	200	"	1000		82.2	58-124			
Surrogate: o-Terphenyl	35		"	50.0		69.8	59-131			
LCS (B7B0902-BS4)					Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	1120	200	"	1000		112	58-124			
Surrogate: o-Terphenyl	45		"	50.0		90.7	59-131			
Matrix Spike (B7B0902-MS1)					Source: X702183-01		Prepared: 02/09/2017 Analyzed: 02/09/2017			
Diesel (C10-C28)	1030	50.0	mg/kg	1000	17.8	101	53-125			
Residual Range Organics (C28-C40)	1100	200	"	1000	ND	110	47-133			
Surrogate: o-Terphenyl	46		"	50.0		91.5	59-131			
Matrix Spike (B7B0902-MS2)					Source: X702183-02		Prepared: 02/09/2017 Analyzed: 02/09/2017			
Diesel (C10-C28)	830	50.0	mg/kg	1000	ND	83.0	53-125			
Residual Range Organics (C28-C40)	821	200	"	1000	ND	82.1	47-133			
Surrogate: o-Terphenyl	41		"	50.0		82.5	59-131			
Matrix Spike (B7B0902-MS3)					Source: X702183-03		Prepared: 02/09/2017 Analyzed: 02/09/2017			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B7B0902 - EPA 3580										
Matrix Spike (B7B0902-MS3)		Source: X702183-03			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	53-125			
Residual Range Organics (C28-C40)	1040	200	"	1000	ND	104	47-133			
Surrogate: o-Terphenyl	47		"	50.0		94.0	59-131			
Matrix Spike (B7B0902-MS4)		Source: X702183-04			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	53-125			
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	47-133			
Surrogate: o-Terphenyl	45		"	50.0		89.2	59-131			
Matrix Spike Dup (B7B0902-MSD1)		Source: X702183-01			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	842	50.0	mg/kg	1000	17.8	82.4	53-125	20.7	20	QR-02
Residual Range Organics (C28-C40)	815	200	"	1000	ND	81.5	47-133	29.6	20	QR-02
Surrogate: o-Terphenyl	36		"	50.0		72.3	59-131			
Matrix Spike Dup (B7B0902-MSD2)		Source: X702183-02			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	53-125	21.9	20	QR-02
Residual Range Organics (C28-C40)	1110	200	"	1000	ND	111	47-133	30.3	20	QR-02
Surrogate: o-Terphenyl	44		"	50.0		88.5	59-131			
Matrix Spike Dup (B7B0902-MSD3)		Source: X702183-03			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	856	50.0	mg/kg	1000	ND	85.6	53-125	19.0	20	
Residual Range Organics (C28-C40)	871	200	"	1000	ND	87.1	47-133	17.9	20	
Surrogate: o-Terphenyl	45		"	50.0		89.8	59-131			
Matrix Spike Dup (B7B0902-MSD4)		Source: X702183-04			Prepared: 02/09/2017 Analyzed: 02/09/2017					
Diesel (C10-C28)	1070	50.0	mg/kg	1000	ND	107	53-125	14.3	20	
Residual Range Organics (C28-C40)	1140	200	"	1000	ND	114	47-133	13.3	20	
Surrogate: o-Terphenyl	48		"	50.0		96.4	59-131			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B0902 - EPA 3580

Matrix Spike Dup (B7B0902-MSD4)

Source: X702183-04

Prepared: 02/09/2017 Analyzed: 02/09/2017

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Notes and Definitions

U Sample is Non-Detect.

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

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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December 30, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #1X Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #1X received by Origins Laboratory, Inc. December 30, 2016. This project is associated with Origins project number X612325-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #1X

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GWN-01	X612325-01	Water	December 30, 2016 10:20	12/30/2016 11:25
GWS-01	X612325-02	Water	December 30, 2016 10:30	12/30/2016 11:25

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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page / of /

XU12325

ORIGINS
LABORATORY, INC

Client: APC
Address: _____
Telephone Number: 303-889-9525
Email Address: cornez@tasman-geo.com
Project Manager: Bob Cornez
Project Name: Adamson Ernie
Project Number: 89101289
Samples Collected By: M. Sohn

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			
GWJ-01	12/30/10	1020	3		X			X					1
GW S-01	4	1030	3	X				X					2
													3
													4
													5
													6
													7
													8
													9
													10

Effluents, not preserved

Relinquished By: MZL Date: 12/30/10 Time: 11:25
Relinquished By: _____ Date: _____ Time: _____

Received By: yo Date: 12/30/10 Time: 11:25
Received By: _____ Date: _____ Time: _____

Turnaround Time: ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard

Temp Received: 7.3 Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: K612325

Client: Tasman

Client Project ID: KMG-Adamson Ernie

Checklist Completed by: Jen Pellegrini

Shipped Via: 4D

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

Date/time completed: 12/30/11

Airbill #: N/A

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

Cooler Number/Temperature: 1 17.3 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>sampled same day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<u>headspace in one vol of GWS-01</u>
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

12/30/11
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

GWN-01

12/30/2016 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X612325-01 (Water)

BTEX by EPA 8260C

Benzene	98.6	4.00	ug/L	4	B6L3001	12/30/2016	12/30/2016	
Toluene	242	4.00	"	"	"	"	"	
Ethylbenzene	177	4.00	"	"	"	"	"	
Xylenes, total	3090	50.0	"	50	"	"	12/30/2016	

Surrogate: 1,2-Dichloroethane-d4	98.8 %	84-121			"	"	12/30/2016	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

GWS-01

12/30/2016 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X612325-02 (Water)

BTEX by EPA 8260C

Benzene	110	4.00	ug/L	4	B6L3001	12/30/2016	12/30/2016	
Toluene	543	4.00	"	"	"	"	"	
Ethylbenzene	500	4.00	"	"	"	"	"	
Xylenes, total	7450	50.0	"	50	"	"	12/30/2016	
Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	12/30/2016	
Surrogate: Toluene-d8	109 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B6L3001 - EPA 5030B (Water)										
Blank (B6L3001-BLK1)					Prepared: 12/30/2016 Analyzed: 12/30/2016					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5	107		84-121			
Surrogate: Toluene-d8	58		"	62.5	93.0		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.4		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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 B6L3001 - EPA 5030B (Water)										
LCS (B6L3001-BS1)					Prepared: 12/30/2016 Analyzed: 12/30/2016					
Benzene	54.9	1.00	ug/L	50.0		110	73.3-129			
Toluene	48.5	1.00	"	50.0		97.0	76.2-123			
Ethylbenzene	49.8	1.00	"	50.0		99.6	73.6-130			
m,p-Xylene	102	2.00	"	100		102	76.1-126			
o-Xylene	48.8	1.00	"	50.0		97.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		89.5	84-121			
Surrogate: Toluene-d8	60		"	62.5		95.7	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L3001 - EPA 5030B (Water)

Matrix Spike (B6L3001-MS1)		Source: X612307-01			Prepared: 12/30/2016 Analyzed: 12/30/2016					
Benzene	52.2	1.00	ug/L	50.0	ND	104	74-130			
Toluene	47.1	1.00	"	50.0	ND	94.2	73-131			
Ethylbenzene	46.4	1.00	"	50.0	ND	92.9	76-132			
m,p-Xylene	94.6	2.00	"	100	ND	94.6	69-139			
o-Xylene	45.5	1.00	"	50.0	ND	90.9	74-131			
Surrogate: 1,2-Dichloroethane-d4	54		"	62.5		87.1	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6L3001 - EPA 5030B (Water)

Matrix Spike Dup (B6L3001-MSD1)		Source: X612307-01			Prepared: 12/30/2016 Analyzed: 12/30/2016					
Benzene	53.5	1.00	ug/L	50.0	ND	107	74-130	2.50	20	
Toluene	49.1	1.00	"	50.0	ND	98.3	73-131	4.26	20	
Ethylbenzene	47.9	1.00	"	50.0	ND	95.7	76-132	3.01	20	
m,p-Xylene	99.1	2.00	"	100	ND	99.1	69-139	4.63	20	
o-Xylene	47.3	1.00	"	50.0	ND	94.6	74-131	3.95	20	
Surrogate: 1,2-Dichloroethane-d4	70		"	62.5		112	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.1	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #1X

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



January 09, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1 Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. January 09, 2017. This project is associated with Origins project number X701073-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GWN-02	X701073-01	Water	January 9, 2017 9:40	01/09/2017 11:03
GWS-02	X701073-02	Water	January 9, 2017 9:50	01/09/2017 11:03

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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page 1 of 1

X701073

ORIGINS
LABORATORY, INC

Client: LPC

Address: _____

Telephone Number: 303-889-9525

Email Address: EOneil@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Adamson Ernie F GU #X1

Project Number: 89101289

Samples Collected By: Zach Mathis

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Sampling Container #			
GWS-02	1/9/16	140	3	X				X					1
GWS-02	1/9/16	150	X	X				X					2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: Zach Mathis

Relinquished By: AKD

Date: 1/9/16

Date: 1/9/16

Time: 1055

Time: 1103

Received By: AKD

Received By: JMK

Date: 1/9/17

Date: 1-9-17

Time: 1035

Time: 1103

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐

Temp Received: 4.9

Date Results Needed

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X701073

Client: Tasman

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: Jeff Smith

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

Date/time completed: 1-9-17

Airbill #: N/A

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

Cooler Number/Temperature: 1 1 49 °C 1 °C 1 °C (Describe) °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<u>X</u>			
Is there ice present (document if blue ice is used)	<u>X</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<u>X</u>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<u>X</u>		
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)	<u>X</u>			<u>HCL</u>
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 1-9-17

Origins Laboratory, Inc.

Jeff Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

GWN-02

1/9/2017 9:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X701073-01 (Water)

BTEX by EPA 8260C

Benzene	152	50.0	ug/L	50	B7A0603	01/09/2017	01/09/2017	
Toluene	398	50.0	"	"	"	"	"	
Ethylbenzene	1510	50.0	"	"	"	"	"	
Xylenes, total	19700	50.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	105 %	84-121			"	"	"	
Surrogate: Toluene-d8	81.6 %	85-115			"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	135 %	84-114			"	"	"	S-04

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

GWS-02

1/9/2017 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X701073-02 (Water)

BTEX by EPA 8260C

Benzene	301	4.00	ug/L	4	B7A0603	01/09/2017	01/09/2017
Toluene	293	4.00	"	"	"	"	"
Ethylbenzene	679	100	"	100	"	"	01/09/2017
Xylenes, total	10800	100	"	"	"	"	"
Surrogate: 1,2-Dichloroethane-d4	99.9 %	84-121			"	"	01/09/2017
Surrogate: Toluene-d8	101 %	85-115			"	"	01/09/2017
Surrogate: 4-Bromofluorobenzene	98.9 %	84-114			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A0603 - EPA 5030B (Water)

Blank (B7A0603-BLK1)

Prepared: 01/06/2017 Analyzed: 01/09/2017

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.2	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.3	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A0603 - EPA 5030B (Water)

LCS (B7A0603-BS1)

Prepared: 01/06/2017 Analyzed: 01/09/2017

Benzene	47.3	1.00	ug/L	50.0		94.7	73.3-129
Toluene	51.9	1.00	"	50.0		104	76.2-123
Ethylbenzene	52.9	1.00	"	50.0		106	73.6-130
m,p-Xylene	106	2.00	"	100		106	76.1-126
o-Xylene	53.4	1.00	"	50.0		107	76.6-124
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.6	84-121
Surrogate: Toluene-d8	65		"	62.5		104	85-115
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.8	84-114

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A0603 - EPA 5030B (Water)

Matrix Spike (B7A0603-MS1)		Source: X701064-01			Prepared: 01/06/2017 Analyzed: 01/09/2017					
Benzene	61.7	1.00	ug/L	50.0	ND	123	74-130			
Toluene	67.0	1.00	"	50.0	ND	134	73-131			QM-07
Ethylbenzene	68.3	1.00	"	50.0	0.130	136	76-132			QM-07
m,p-Xylene	136	2.00	"	100	0.380	135	69-139			
o-Xylene	67.3	1.00	"	50.0	ND	135	74-131			QM-07
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A0603 - EPA 5030B (Water)

Matrix Spike Dup (B7A0603-MSD1)		Source: X701064-01			Prepared: 01/06/2017 Analyzed: 01/09/2017					
Benzene	55.3	1.00	ug/L	50.0	ND	111	74-130	10.9	20	
Toluene	60.3	1.00	"	50.0	ND	121	73-131	10.5	20	
Ethylbenzene	62.2	1.00	"	50.0	0.130	124	76-132	9.37	20	
m,p-Xylene	123	2.00	"	100	0.380	123	69-139	9.74	20	
o-Xylene	61.6	1.00	"	50.0	ND	123	74-131	8.78	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.6	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.9	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

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.

Origins Laboratory, Inc.



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



January 17, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #X1 Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #X1 received by Origins Laboratory, Inc. January 17, 2017. This project is associated with Origins project number X701165-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GWS-03	X701165-01	Water	January 17, 2017 7:30	01/17/2017 10:30
GWN-03	X701165-02	Water	January 17, 2017 7:35	01/17/2017 10:30

Origins Laboratory, Inc.



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

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

ORIGINS
LABORATORY, INC.

www.originslaboratory.com

X7016S

page 1 of 1

Client: ARC
Address: _____
Telephone Number: 970 470 9092
Email Address: c10n20t@smmexpco.com

Project Manager: Pob Jones
Project Name: Admission Price F 6W #V1
Project Number: 89101239
Samples Collected By: R. Mann

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix		Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil		
6WS-03	11/17/17	0730	3	X	X	X		X		X	1
6WN-03	11/17/17	0735	3	X	X	X		X		X	2
											3
											4
											5
											6
											7
											8
											9
											10
Relinquished By:	Date: 11/17/17	Time: 1340		Received By:				Received By:		Date: 1-17-17	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:		Received By:				Received By:		Date: 1-17-17	

Temp Received - 6.8

Date Results Needed

Origins Laboratory, Inc.

Jeff Pellipini

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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X701165

Client: Tasman

Client Project ID: Adamson Ernie F GU #X1

Checklist Completed by: Jef Smith

Shipped Via: H/D

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

Date/time completed: 1-17-12

Airbill #: NA

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

Cooler Number/Temperature: 1 16.8 °C 1 °C 1 °C 1 °C

Thermometer ID: TU03

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

Date/Time Reviewed: 1-17-12

Origins Laboratory, Inc.

Jef Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

GWS-03

1/17/2017 7:30:00AM

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

Origins Laboratory, Inc. X701165-01 (Water)

BTEX by EPA 8260C

Benzene	4.00	4.00	ug/L	4	B7A1702	01/17/2017	01/17/2017
Toluene	8.76	4.00	"	"	"	"	"
Ethylbenzene	19.2	4.00	"	"	"	"	"
Xylenes, total	305	4.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"
Surrogate: Toluene-d8	97.9 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	97.0 %	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

GWN-03

1/17/2017 7:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X701165-02 (Water)

BTEX by EPA 8260C

Benzene	19.0	4.00	ug/L	4	B7A1702	01/17/2017	01/17/2017
Toluene	19.2	4.00	"	"	"	"	"
Ethylbenzene	85.0	4.00	"	"	"	"	"
Xylenes, total	1150	4.00	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"
Surrogate: Toluene-d8	97.6 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	98.4 %	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B7A1702 - EPA 5030B (Water)										
Blank (B7A1702-BLK1)					Prepared: 01/17/2017 Analyzed: 01/17/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A1702 - EPA 5030B (Water)

Blank (B7A1702-BLK2)

Prepared: 01/17/2017 Analyzed: 01/17/2017

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5	98.3		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.

Tasman Geosciences
 6899 Pecos Street, Unit C
 Denver CO 80211

Bob Cornez
 Project Number: 89101289
 Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A1702 - EPA 5030B (Water)

LCS (B7A1702-BS1)

Prepared: 01/17/2017 Analyzed: 01/17/2017

Benzene	43.2	1.00	ug/L	50.0		86.3	73.3-129			
Toluene	47.9	1.00	"	50.0		95.8	76.2-123			
Ethylbenzene	49.1	1.00	"	50.0		98.3	73.6-130			
m,p-Xylene	97.0	2.00	"	100		97.0	76.1-126			
o-Xylene	49.1	1.00	"	50.0		98.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	55		"	62.5		88.2	84-121			
Surrogate: Toluene-d8	68		"	62.5		108	85-115			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7A1702 - EPA 5030B (Water)

LCS (B7A1702-BS2)

Prepared: 01/17/2017 Analyzed: 01/17/2017

Benzene	52.8	1.00	ug/L	50.0		106	73.3-129			
Toluene	52.2	1.00	"	50.0		104	76.2-123			
Ethylbenzene	53.6	1.00	"	50.0		107	73.6-130			
m,p-Xylene	105	2.00	"	100		105	76.1-126			
o-Xylene	53.4	1.00	"	50.0		107	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.0	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.5	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B7A1702 - EPA 5030B (Water)

Matrix Spike (B7A1702-MS1)		Source: X701151-01			Prepared: 01/17/2017 Analyzed: 01/17/2017					
Benzene	53.7	1.00	ug/L	50.0	ND	107	74-130			
Toluene	53.1	1.00	"	50.0	ND	106	73-131			
Ethylbenzene	55.0	1.00	"	50.0	ND	110	76-132			
m,p-Xylene	109	2.00	"	100	0.320	109	69-139			
o-Xylene	54.4	1.00	"	50.0	0.110	109	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.1	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B7A1702 - EPA 5030B (Water)

Matrix Spike (B7A1702-MS2)		Source: X701151-04			Prepared: 01/17/2017 Analyzed: 01/17/2017					
Benzene	58.4	1.00	ug/L	50.0	0.590	116	74-130			
Toluene	56.0	1.00	"	50.0	ND	112	73-131			
Ethylbenzene	57.8	1.00	"	50.0	ND	116	76-132			
m,p-Xylene	114	2.00	"	100	ND	114	69-139			
o-Xylene	57.5	1.00	"	50.0	ND	115	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.0	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.6	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B7A1702 - EPA 5030B (Water)

Matrix Spike Dup (B7A1702-MSD1)		Source: X701151-01			Prepared: 01/17/2017 Analyzed: 01/17/2017					
Benzene	52.7	1.00	ug/L	50.0	ND	105	74-130	1.82	20	
Toluene	52.2	1.00	"	50.0	ND	104	73-131	1.67	20	
Ethylbenzene	54.1	1.00	"	50.0	ND	108	76-132	1.69	20	
m,p-Xylene	107	2.00	"	100	0.320	106	69-139	2.12	20	
o-Xylene	53.3	1.00	"	50.0	0.110	106	74-131	2.17	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.3	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #X1

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 B7A1702 - EPA 5030B (Water)

Matrix Spike Dup (B7A1702-MSD2)		Source: X701151-04			Prepared: 01/17/2017 Analyzed: 01/17/2017					
Benzene	53.7	1.00	ug/L	50.0	0.590	106	74-130	8.29	20	
Toluene	52.0	1.00	"	50.0	ND	104	73-131	7.33	20	
Ethylbenzene	53.7	1.00	"	50.0	ND	107	76-132	7.39	20	
m,p-Xylene	107	2.00	"	100	ND	107	69-139	6.71	20	
o-Xylene	52.7	1.00	"	50.0	ND	105	74-131	8.79	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		96.9	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.6	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.2	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.

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #X1

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



February 14, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Adamson Ernie F GU #1X Project Number - 89101289

Attached are your analytical results for KMG - Adamson Ernie F GU #1X received by Origins Laboratory, Inc. February 13, 2017. This project is associated with Origins project number X702244-01.

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

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

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

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

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

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



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89101289

Project: KMG - Adamson Ernie F GU #1X

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GWN-4	X702244-01	Water	February 13, 2017 12:30	02/13/2017 17:04
GWS-4	X702244-02	Water	February 13, 2017 12:45	02/13/2017 17:04

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Client: APL
Address: Bob Cornez
Telephone Number: 9104709047
Email Address: cornez@tasman-geo.com
Project Manager: Bob Cornez
Project Name: Adamson Ernie F GU #1X
Project Number: 89101289
Samples Collected By: 21, 2M

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			Other
6WN-4	2/13/17	1230	3					X					1
GWS-4	2/13/17	1245	3					X					2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>[Signature]</u>	2/13/17	1704	<u>[Signature]</u>	2/13/17	1704	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

1.2°

Temp Received-

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X702244

Client: Tasman

Client Project ID: KMG - Adamson Ernie F GU #1X

Checklist Completed by: Don Lu

Shipped Via: Pick-up

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

Date/time completed: 2-13-12 1755

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1.2 °C _____ / _____ °C _____ / _____ °C (Describe)

Thermometer ID: T003

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

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

Reviewed by (Project Manager) Don Lu

2-13-12 1755
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

GWN-4

2/13/2017 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702244-01 (Water)

BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B7B1306	02/13/2017	02/13/2017	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	83.4	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89101289
Project: KMG - Adamson Ernie F GU #1X

GWS-4

2/13/2017 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X702244-02 (Water)

BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B7B1306	02/13/2017	02/13/2017	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	4.00	4.00	"	"	"	"	"	
Xylenes, total	141	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	

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Tasman Geosciences
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 Denver CO 80211

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 Project: KMG - Adamson Ernie F GU #1X

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 B7B1306 - EPA 5030B (Water)										
Blank (B7B1306-BLK1)					Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	103		84-121			
Surrogate: Toluene-d8	64		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5	94.9		84-114			

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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 B7B1306 - EPA 5030B (Water)										
Blank (B7B1306-BLK2)					Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	103		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.8		84-114			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

LCS (B7B1306-BS1)

Prepared: 02/13/2017 Analyzed: 02/13/2017

Benzene	45.2	1.00	ug/L	50.0		90.4	73.3-129
Toluene	46.1	1.00	"	50.0		92.1	76.2-123
Ethylbenzene	47.3	1.00	"	50.0		94.7	73.6-130
m,p-Xylene	93.8	2.00	"	100		93.8	76.1-126
o-Xylene	46.6	1.00	"	50.0		93.2	76.6-124
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.1	84-121
Surrogate: Toluene-d8	64		"	62.5		102	85-115
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

LCS (B7B1306-BS2)

Prepared: 02/13/2017 Analyzed: 02/13/2017

Benzene	44.0	1.00	ug/L	50.0		87.9	73.3-129			
Toluene	44.7	1.00	"	50.0		89.3	76.2-123			
Ethylbenzene	46.9	1.00	"	50.0		93.9	73.6-130			
m,p-Xylene	92.9	2.00	"	100		92.9	76.1-126			
o-Xylene	46.5	1.00	"	50.0		93.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

Matrix Spike (B7B1306-MS1)		Source: X702177-06			Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	52.1	1.00	ug/L	50.0	ND	104	74-130			
Toluene	52.1	1.00	"	50.0	ND	104	73-131			
Ethylbenzene	53.1	1.00	"	50.0	ND	106	76-132			
m,p-Xylene	106	2.00	"	100	0.230	106	69-139			
o-Xylene	51.3	1.00	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.1	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

Matrix Spike (B7B1306-MS2)		Source: X702177-07			Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	50.4	1.00	ug/L	50.0	ND	101	74-130			
Toluene	49.8	1.00	"	50.0	ND	99.7	73-131			
Ethylbenzene	51.1	1.00	"	50.0	ND	102	76-132			
m,p-Xylene	100	2.00	"	100	ND	100	69-139			
o-Xylene	49.3	1.00	"	50.0	ND	98.6	74-131			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		90.4	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

Matrix Spike Dup (B7B1306-MSD1)		Source: X702177-06			Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	49.3	1.00	ug/L	50.0	ND	98.6	74-130	5.62	20	
Toluene	49.0	1.00	"	50.0	ND	97.9	73-131	6.14	20	
Ethylbenzene	50.7	1.00	"	50.0	ND	101	76-132	4.60	20	
m,p-Xylene	100	2.00	"	100	0.230	100	69-139	5.49	20	
o-Xylene	49.2	1.00	"	50.0	ND	98.4	74-131	4.26	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		90.5	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7B1306 - EPA 5030B (Water)

Matrix Spike Dup (B7B1306-MSD2)		Source: X702177-07			Prepared: 02/13/2017 Analyzed: 02/13/2017					
Benzene	48.0	1.00	ug/L	50.0	ND	95.9	74-130	4.92	20	
Toluene	46.6	1.00	"	50.0	ND	93.2	73-131	6.72	20	
Ethylbenzene	47.7	1.00	"	50.0	ND	95.4	76-132	6.94	20	
m,p-Xylene	94.2	2.00	"	100	ND	94.2	69-139	6.42	20	
o-Xylene	46.7	1.00	"	50.0	ND	93.3	74-131	5.48	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.2	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

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Tasman Geosciences

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Bob Cornez

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Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini For Noelle Doyle Mathis, President