

## **ANALYTICAL TABLE**

**TABLE 1  
WINDELL 5-18  
GROUNDWATER SAMPLE RESULTS SUMMARY TABLE  
KERR-McGEE OIL AND GAS ONSHORE LP**

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth To Water (ft. BTOC)
<b>COGCC Standards for groundwater (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
W-GW01	12/18/2013	2.7	8	38.6	301	~4*
E-GW01	1/2/2014	<b>16.1</b>	47.1	9.9	101	~4*
E-GW02	1/10/2014	<b>9.4</b>	17.4	13.3	71.9	~4*
E-GW03	1/20/2014	3.7	9	1.8	27.6	~4*
BH01	10/27/15	<1.0	<1.0	<1.0	<1.0	4.26
BH02	10/27/15	<1.0	<1.0	<1.0	<1.0	4.30
BH03	10/27/15	<1.0	<1.0	<1.0	<1.0	4.26

**Notes:**

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

COGCC = Colorado Oil and Gas Conservation Commission

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

µg/L = Micrograms per liter.

ft. BTOC = Feet below top of casing.

\* feet below ground surface

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

## **LABORATORY ANALYTICAL REPORTS**

# Test Report

## eANALYTICS LABORATORY

January 2, 2014

Client: Tasman Geosciences / Anadarko  
Project: Windell 5-18  
Lab ID: 504  
Date Samples Received: 1/2/2014  
Number of Samples: 1  
Sample Condition: Samples arrived intact and in appropriate sample containers  
Sample Temperature: Within acceptable range of 2-6° C, or as specified in EPA Method

The quality control procedures associated with the requested analyses were satisfactorily passed before the samples were run.

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

Sincerely,



Christopher Dieken  
Quality Assurance Manager



Todd Rhea  
Laboratory Manager



Proudly certified by A2LA & The  
United States Department of Defense  
(DoD ELAP)

**eAnalytics Laboratory**

1767 Rocky Mountain Avenue Loveland CO 80538







Client: Tasman Geosciences / Anadarko

Lab ID: 504

Project: Windell 5-18

Method: EPA8260

Sample Name	Dibromo-fluoromethane % Recovery	1,2 Dichloro-ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo-fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
E-GW01	97	100	98	103	01/02/14	01/02/14	504 1



# Test Report

## eANALYTICS LABORATORY

January 10, 2014

Client: Tasman Geosciences / Anadarko  
Project: Windell 5-18  
Lab ID: 554  
Date Samples Received: 1/10/2014  
Number of Samples: 1  
Sample Condition: Samples arrived intact and in appropriate sample containers  
Sample Temperature: Within acceptable range of 2-6° C, or as specified in EPA Method

The quality control procedures associated with the requested analyses were satisfactorily passed before the samples were run.

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

Sincerely,



Christopher Dieken  
Quality Assurance Manager



Todd Rhea  
Laboratory Manager



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(DoD ELAP)

**eAnalytics Laboratory**

1767 Rocky Mountain Avenue Loveland CO 80538







Client: Tasman Geosciences / Anadarko Lab ID: 554  
 Project: Windell 5-18 Method: EPA8260

Sample Name	Dibromo- fluoromethane % Recovery	1,2 Dichloro- ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo- fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
E-GW02	87	89	99	96	01/10/14	01/10/14	554 1



Client: Tasman Geosciences / Anadarko Lab ID: 554  
 Project: Windell 5-18  
 Analysis: Volatile Organics Method: EPA8260

Sample Name	Benzene % Rec	Toluene % Rec	Ethyl- benzene % Rec	Total Xylenes % Rec	Date Analyzed	Lab ID
Laboratory Control (70-130%)	100	94	101	101	01/10/14	LCS 554 1
Calibration Verification (80-120%)	89	100	97	94	01/10/14	CCV 554 1
Method Blank	< 1.0	< 1.0	< 1.0	< 1.0	01/10/14	MB 554 1

# Test Report

## eANALYTICS LABORATORY

January 20, 2014

Client: Tasman Geosciences / Anadarko  
Project: Windell 5-18  
Lab ID: 620  
Date Samples Received: 1/20/2014  
Number of Samples: 1  
Sample Condition: Samples arrived intact and in appropriate sample containers  
Sample Temperature: Within acceptable range of 2-6° C, or as specified in EPA Method

The quality control procedures associated with the requested analyses were satisfactorily passed before the samples were run.

Thank you for allowing eAnalytics Laboratory to provide laboratory services for you.

Sincerely,



Christopher Dieken  
Quality Assurance Manager



Todd Rhea  
Laboratory Manager



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United States Department of Defense  
(DoD ELAP)

**eAnalytics Laboratory**

1767 Rocky Mountain Avenue Loveland CO 80538







Client: Tasman Geosciences / Anadarko Lab ID: 620  
 Project: Windell 5-18 Method: EPA8260

Sample Name	Dibromo- fluoromethane % Recovery	1,2 Dichloro- ethane-D4 % Recovery	Toluene-D8 % Recovery	Bromo- fluorobenzene % Recovery	Date Sampled	Date Analyzed	Lab ID
E-GW03	91	92	98	94	01/20/14	01/20/14	620 1



October 28, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Windell 5-18

Project Number - [none]

Attached are your analytical results for KMG - Windell 5-18 received by Origins Laboratory, Inc. October 27, 2015. This project is associated with Origins project number X510314-01.

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

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

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

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

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

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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - Windell 5-18

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X510314-01	Water	October 26, 2015 13:05	10/27/2015 16:00
BH02	X510314-02	Water	October 26, 2015 13:17	10/27/2015 16:00
BH03	X510314-03	Water	October 26, 2015 13:25	10/27/2015 16:00

Origins Laboratory, Inc.



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

Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

# ORIGINS

XS10314

page 1 of 1

Client: Tasman Geo  
 Address: \_\_\_\_\_  
 Project Manager: Christine Wasko  
 Project Name: Windell 5-18  
 Project Number: \_\_\_\_\_  
 Telephone Number: 912 250 2907  
 Email Address: Christine@TasmanGeo.com  
 Samples Collected By: Rock Nelson  
 APC Invoice Phil Hobbs

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air/Surface			Other
BH01	10/26/15	1308	3	X								1	
BH02	↓	1317	3	X								2	
BH03	↓	1325	3	X								3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	
Relinquished By:	Date: 10/27/15	Time: 1600	Received By:	Date: 10-27-15	Time: 1600	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>							
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Standard: <input type="checkbox"/> <input checked="" type="checkbox"/>							

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: XS10314 Client: Tasman  
 Client Project ID: Windell 5-18  
 Checklist Completed by: Jeff Smith Shipped Via: HD  
 Date/time completed: 10/27/15 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: NA  
 Matrix(s) Received: (Check all that apply): Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 2-3 °C \_\_\_\_\_ / \_\_\_\_\_ °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 <sup>(1)</sup> ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	X			HCL
Additional Comments (if any):				

<sup>(1)</sup>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 10/27/15

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**BH01**

**10/26/2015 1:05:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X510314-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5J27011	10/27/2015	10/27/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	94.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**BH02**

**10/26/2015 1:17:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X510314-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5J27011	10/27/2015	10/27/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	92.7 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.9 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**BH03**

**10/26/2015 1:25:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X510314-03 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	5J27011	10/27/2015	10/27/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	93.1 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.5 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**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 5J27011 - EPA 5030B (Water)**

**Blank (5J27011-BLK1)**

Prepared: 10/27/2015 Analyzed: 10/27/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5	94.4		84-121			
Surrogate: Toluene-d8	63		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.6		84-114			

Origins Laboratory, Inc.



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 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**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 5J27011 - EPA 5030B (Water)**

**LCS (5J27011-BS1)**

Prepared: 10/27/2015 Analyzed: 10/27/2015

Benzene	42.9	1.0	ug/L	50.0		85.8	75-126			
Toluene	44.0	1.0	"	50.0		88.0	78.7-126			
Ethylbenzene	48.5	1.0	"	50.0		97.0	80-130			
m,p-Xylene	96.8	2.0	"	100		96.8	77.2-133			
o-Xylene	46.2	1.0	"	50.0		92.3	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	84-114			

Origins Laboratory, Inc.



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 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**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 5J27011 - EPA 5030B (Water)**

<b>Matrix Spike (5J27011-MS1)</b>	<b>Source: X510297-01</b>			<b>Prepared: 10/27/2015 Analyzed: 10/27/2015</b>						
Benzene	46.4	1.0	ug/L	50.0	ND	92.9	74-130			
Toluene	46.9	1.0	"	50.0	ND	93.8	73-131			
Ethylbenzene	53.4	1.0	"	50.0	ND	107	76-132			
m,p-Xylene	107	2.0	"	100	ND	107	69-139			
o-Xylene	49.8	1.0	"	50.0	ND	99.6	74-131			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.2	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.9	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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 6899 Pecos Street, Unit C  
 Denver CO 80211

Christine Wasko  
 Project Number: [none]  
 Project: KMG - Windell 5-18

**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 5J27011 - EPA 5030B (Water)**

Matrix Spike Dup (5J27011-MSD1)	Source: X510297-01			Prepared: 10/27/2015 Analyzed: 10/27/2015						
Benzene	48.7	1.0	ug/L	50.0	ND	97.5	74-130	4.83	20	
Toluene	49.0	1.0	"	50.0	ND	97.9	73-131	4.36	20	
Ethylbenzene	54.1	1.0	"	50.0	ND	108	76-132	1.26	20	
m,p-Xylene	108	2.0	"	100	ND	108	69-139	1.44	20	
o-Xylene	52.9	1.0	"	50.0	ND	106	74-131	6.00	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		93.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		102	84-114			

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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: KMG - Windell 5-18

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**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President