



## ANALYTICAL SUMMARY REPORT

May 18, 2016

EOG Resources Inc  
600 17th St Ste 1000 N  
Denver, CO 80202

Work Order: C16050401

Project Name: Randall Creek 2-29H Subsequent Samples

Energy Laboratories, Inc. Casper WY received the following 4 samples for EOG Resources Inc on 5/11/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C16050401-001	RC2_1	05/10/16 8:25	05/11/16	Soil	Ultrasonic Extraction Diesel Range Organics Percent Moisture Volatile Organics, Methanol Extraction 8260-Volatile Organic Compounds- BTEX
C16050401-002	RC2_2	05/10/16 8:50	05/11/16	Soil	Same As Above
C16050401-003	RC2_3	05/10/16 8:40	05/11/16	Soil	Same As Above
C16050401-004	RC2_4	05/10/16 8:30	05/11/16	Soil	Same As Above

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

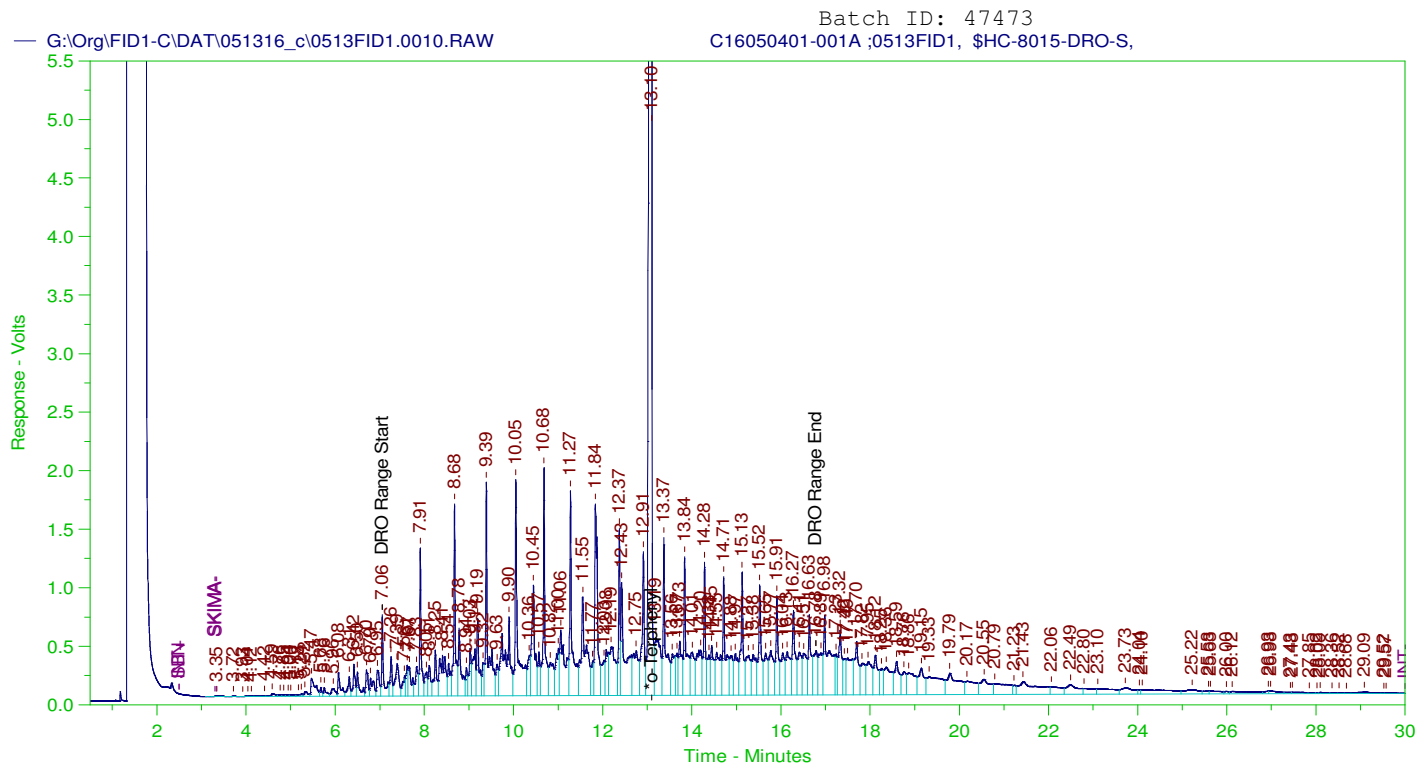
**Client:** EOG Resources Inc  
**Project:** Randall Creek 2-29H Subsequent Samples  
**Lab ID:** C16050401-001  
**Client Sample ID:** RC2\_1

**Report Date:** 05/18/16  
**Collection Date:** 05/10/16 08:25  
**DateReceived:** 05/11/16  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	15.3	wt%		0.2		D2974	05/16/16 09:35 / tkr
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Benzene	ND	mg/kg-dry		0.17		SW8260B	05/17/16 15:54 / dm
<b>ORGANIC CHARACTERISTICS</b>							
Diesel Range Organics (DRO)	97	mg/kg-dry		10		SW8015B	05/13/16 16:52 / bah
Surr: o-Terphenyl	71.0	%REC		32-106		SW8015B	05/13/16 16:52 / bah

**Report**  
**Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



#### DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C16050401-001A ;0513FID1, \$HC-8015-DRO-S,  
Raw File: G:\Org\FID1-C\DAT\051316\_c\0513FID1.0010.RAW  
Date & Time Acquired: 5/13/2016 16:52:57  
Method File: G:\Org\FID1-C\Methods\FID1\_BASE\_CAL\_050616\_R.met  
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1\_050616\_R.CAL  
Sample Weight: 30.2 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 68775  
Rt range for Diesel Range Organics (C10 to C28): 6.95 to 16.7  
Rt range for Oil Range Organics (C28 to C40+): 16.56 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	13.099	66.225	55.087	83.18	-

DRO Area:2.024572E+08 DRO AMOUNT: 97.47555  
TEH Area:2.80846E+08 TEH AMOUNT: 135.2168  
Oil Area:7.249741E+07 OIL AMOUNT: 34.90478



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

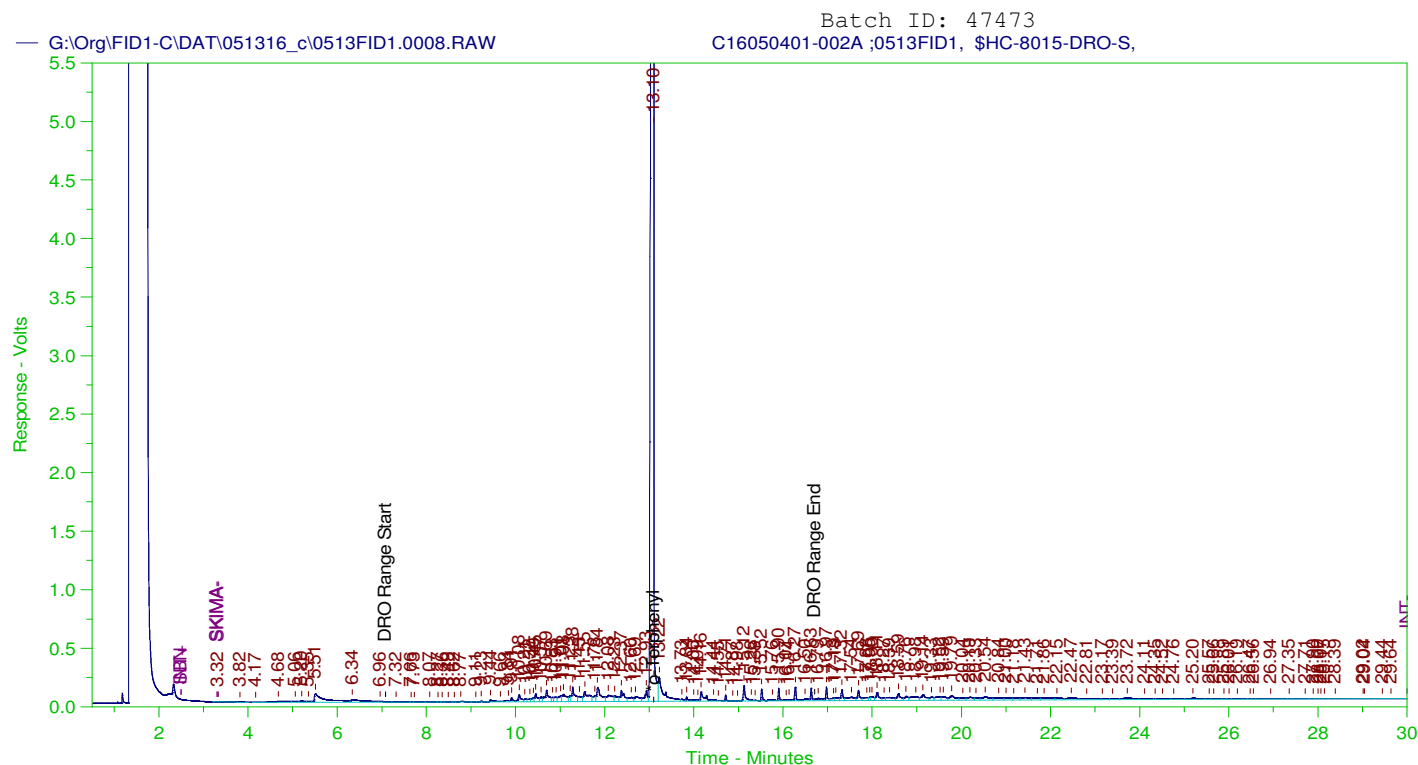
**Client:** EOG Resources Inc  
**Project:** Randall Creek 2-29H Subsequent Samples  
**Lab ID:** C16050401-002  
**Client Sample ID:** RC2\_2

**Report Date:** 05/18/16  
**Collection Date:** 05/10/16 08:50  
**DateReceived:** 05/11/16  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	12.2	wt%		0.2		D2974	05/16/16 09:35 / tkr
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Benzene	ND	mg/kg-dry		0.17		SW8260B	05/17/16 16:29 / dm
<b>ORGANIC CHARACTERISTICS</b>							
Diesel Range Organics (DRO)	ND	mg/kg-dry		10		SW8015B	05/13/16 15:20 / bah
Surr: o-Terphenyl	72.0	%REC		32-106		SW8015B	05/13/16 15:20 / bah

**Report**  
**Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



#### DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C16050401-002A ;0513FID1, \$HC-8015-DRO-S,  
Raw File: G:\Org\FID1-C\DAT\051316\_c\0513FID1.0008.RAW  
Date & Time Acquired: 5/13/2016 15:20:59  
Method File: G:\Org\FID1-C\Methods\FID1\_BASE\_CAL\_050616\_R.met  
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1\_050616\_R.CAL  
Sample Weight: 30.1 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 68775  
Rt range for Diesel Range Organics (C10 to C28): 6.95 to 16.7  
Rt range for Oil Range Organics (C28 to C40+): 16.56 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	13.097	66.445	54.596	82.17

DRO Area:1.257846E+07 DRO AMOUNT: 6.076175  
TEH Area:2.511317E+07 TEH AMOUNT: 12.13122  
Oil Area:1.086164E+07 OIL AMOUNT: 5.246844



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

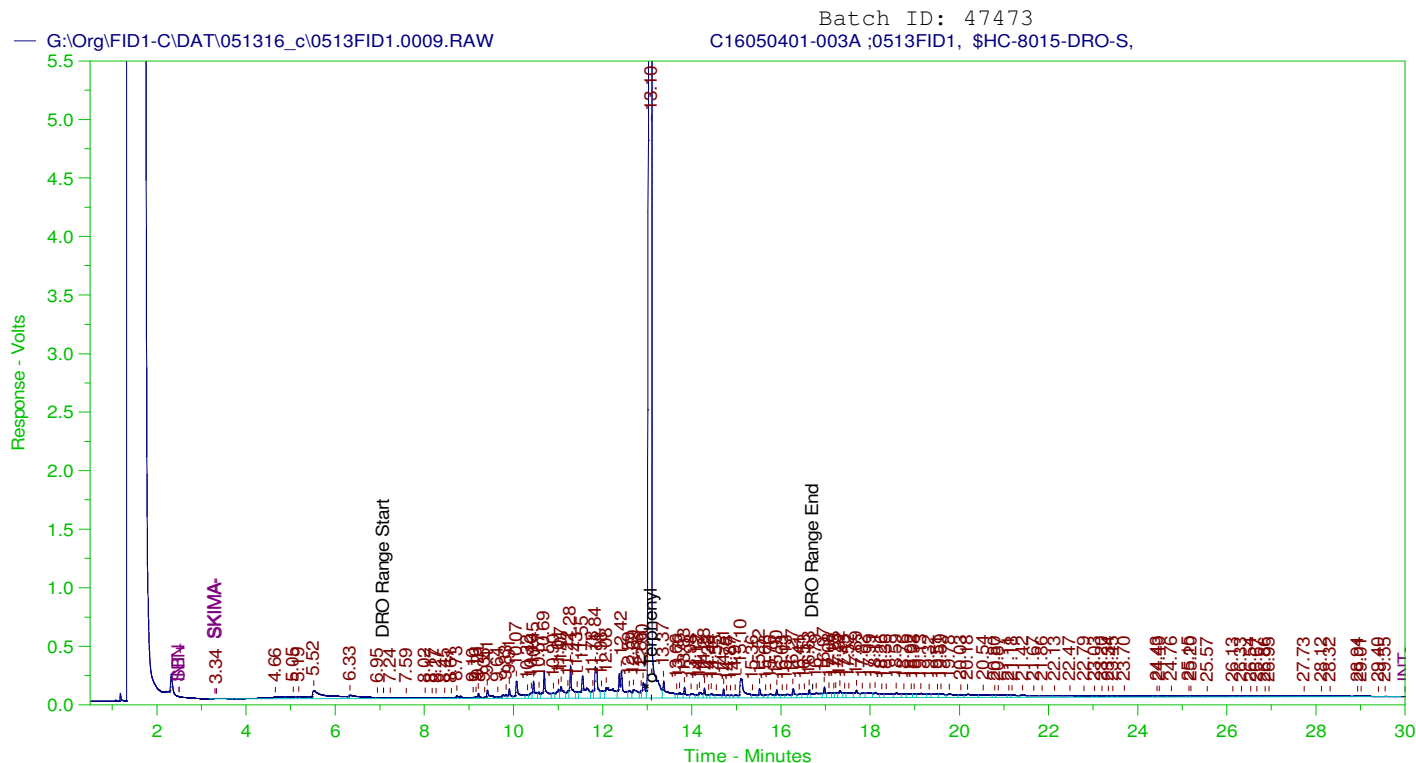
**Client:** EOG Resources Inc  
**Project:** Randall Creek 2-29H Subsequent Samples  
**Lab ID:** C16050401-003  
**Client Sample ID:** RC2\_3

**Report Date:** 05/18/16  
**Collection Date:** 05/10/16 08:40  
**Date Received:** 05/11/16  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	5.8	wt%		0.2		D2974	05/16/16 09:35 / tkr
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Benzene	ND	mg/kg-dry		0.17		SW8260B	05/17/16 17:04 / dm
<b>ORGANIC CHARACTERISTICS</b>							
Diesel Range Organics (DRO)	ND	mg/kg-dry		10		SW8015B	05/13/16 16:06 / bah
Surr: o-Terphenyl	77.0	%REC		32-106		SW8015B	05/13/16 16:06 / bah

**Report**  
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ND - Not detected at the reporting limit.



#### DIESEL RANGE ORGANICS CHROMATOGRAM

Sample Name: C16050401-003A ;0513FID1, \$HC-8015-DRO-S,  
Raw File: G:\Org\FID1-C\DAT\051316\_c\0513FID1.0009.RAW  
Date & Time Acquired: 5/13/2016 16:06:56  
Method File: G:\Org\FID1-C\Methods\FID1\_BASE\_CAL\_050616\_R.met  
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1\_050616\_R.CAL  
Sample Weight: 30.6 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 68775  
Rt range for Diesel Range Organics (C10 to C28): 6.95 to 16.7  
Rt range for Oil Range Organics (C28 to C40+): 16.56 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	13.096	65.359	53.675	82.12

DRO Area:2.01276E+07	DRO AMOUNT: 9.56401
TEH Area:3.380103E+07	TEH AMOUNT: 16.0612
Oil Area:1.111791E+07	OIL AMOUNT: 5.282885



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** EOG Resources Inc  
**Project:** Randall Creek 2-29H Subsequent Samples  
**Lab ID:** C16050401-004  
**Client Sample ID:** RC2\_4

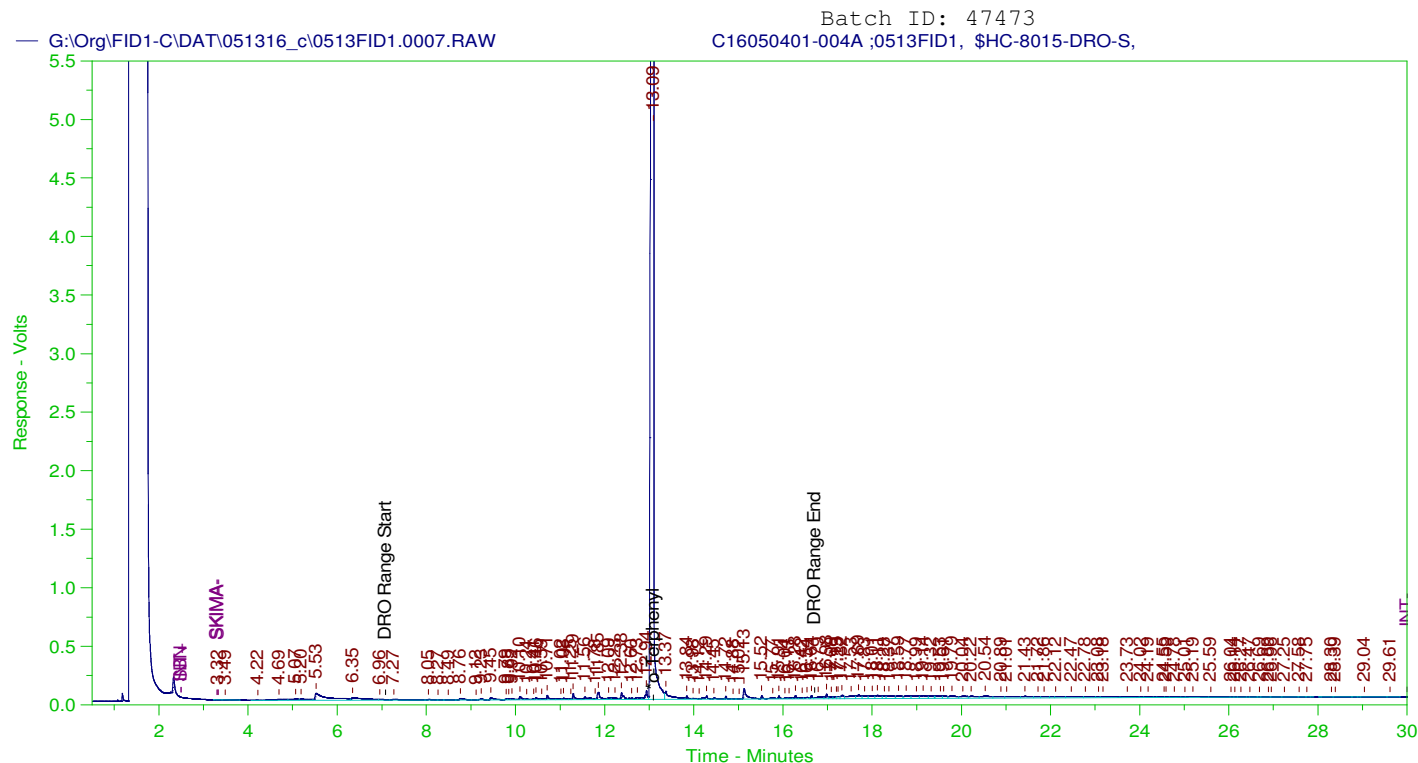
**Report Date:** 05/18/16  
**Collection Date:** 05/10/16 08:30  
**DateReceived:** 05/11/16  
**Matrix:** Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL CHARACTERISTICS</b>							
Moisture	6.3	wt%		0.2		D2974	05/16/16 09:35 / tkr
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Benzene	ND	mg/kg-dry		0.17		SW8260B	05/17/16 17:39 / dm
<b>ORGANIC CHARACTERISTICS</b>							
Diesel Range Organics (DRO)	ND	mg/kg-dry		10		SW8015B	05/13/16 14:34 / bah
Surr: o-Terphenyl	75.0	%REC		32-106		SW8015B	05/13/16 14:34 / bah

**Report**  
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ND - Not detected at the reporting limit.





# **DIESEL RANGE ORGANICS CHROMATOGRAM**

Sample Name: C16050401-004A ;0513FID1, \$HC-8015-DRO-S,  
Raw File: G:\Org\FID1-C\DAT\051316\_c\0513FID1.0007.RAW  
Date & Time Acquired: 5/13/2016 14:34:46  
Method File: G:\Org\FID1-C\Methods\FID1\_BASE\_CAL\_050616\_R.met  
Calibration File: \\cafle\organics\Org\FID1-C\Cals\FID1\_050616\_R.CAL  
Sample Weight: 30.2 Dilution: 1 S.A.: 1

Mean RF for Hydrocarbon Range Calculations: 68775  
Rt range for Diesel Range Organics (C10 to C28): 6.95 to 16.7  
Rt range for Oil Range Organics (C28 to C40+): 16.56 to End Time

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
*o-Terphenyl	13.095	66.225	52.791	79.71

DRO Area:4829800	DRO AMOUNT: 2.325367
TEH Area:1.342819E+07	TEH AMOUNT: 6.465169
Oil Area:6789625	OIL AMOUNT: 3.26895



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** EOG Resources Inc

**Report Date:** 05/18/16

**Project:** Randall Creek 2-29H Subsequent Samples

**Work Order:** C16050401

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8015B</b>										Batch: 47473
<b>Lab ID: LCS-47473</b>	2	Laboratory Control Sample				Run: FID1-C_160513A				05/13/16 11:30
Diesel Range Organics (DRO)		512	mg/kg	10	77	53.2	114			
Surr: o-Terphenyl				0.67	90	66.4	127			
<b>Lab ID: LCSD-47473</b>	2	Laboratory Control Sample Duplicate				Run: FID1-C_160513A				05/13/16 12:16
Diesel Range Organics (DRO)		553	mg/kg	10	83	53.2	114	7.6	20	
Surr: o-Terphenyl				0.67	95	66.4	127			
<b>Lab ID: MB-47473</b>	2	Method Blank				Run: FID1-C_160513A				05/13/16 13:02
Diesel Range Organics (DRO)		ND	mg/kg	10						
Surr: o-Terphenyl				0.67	80	56	147			
<b>Lab ID: C16050283-001AMS</b>	2	Sample Matrix Spike				Run: FID1-C_160513A				05/13/16 21:28
Diesel Range Organics (DRO)		763	mg/kg-dry	79	77	62.6	122			
Surr: o-Terphenyl				7.9	103	76.7	134			
<b>Lab ID: C16050283-001AMSD</b>	2	Sample Matrix Spike Duplicate				Run: FID1-C_160513A				05/13/16 22:14
Diesel Range Organics (DRO)		746	mg/kg-dry	79	74	62.6	122	2.3	20	
Surr: o-Terphenyl				7.9	106	76.7	134	0.0	30	
<b>Method: SW8015B</b>										Analytical Run: R211661
<b>Lab ID: CCV_0513FID102r</b>	2	Continuing Calibration Verification Standard								05/13/16 10:44
Total Extractable Hydrocarbons		588	mg/kg	10	88	85	115			
Surr: o-Terphenyl				0.67	103	56	147			
<b>Lab ID: CCV_0513FID112r</b>	2	Continuing Calibration Verification Standard								05/13/16 18:24
Total Extractable Hydrocarbons		586	mg/kg	10	88	85	115			
Surr: o-Terphenyl				0.67	102	56	147			

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** EOG Resources Inc

**Report Date:** 05/18/16

**Project:** Randall Creek 2-29H Subsequent Samples

**Work Order:** C16050401

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>										Batch: 47484
<b>Lab ID: MB-47484</b>	5	Method Blank				Run: 5975VOC1_160513E				05/13/16 23:07
Benzene		ND	mg/kg	0.20						
Surr: 1,2-Dichlorobenzene-d4				0.20	123	70	130			
Surr: Dibromofluoromethane				0.20	114	70	130			
Surr: p-Bromofluorobenzene				0.20	126	70	130			
Surr: Toluene-d8				0.20	111	70	130			
<b>Lab ID: LCS-47484</b>	5	Laboratory Control Sample				Run: 5975VOC1_160513E				05/14/16 05:31
Benzene		2.07	mg/kg	0.20	104	70	130			
Surr: 1,2-Dichlorobenzene-d4				0.20	114	70	130			
Surr: Dibromofluoromethane				0.20	117	70	130			
Surr: p-Bromofluorobenzene				0.20	114	70	130			
Surr: Toluene-d8				0.20	116	70	130			
<b>Lab ID: LCSD-47484</b>	5	Laboratory Control Sample Duplicate				Run: 5975VOC1_160513E				05/14/16 06:06
Benzene		2.00	mg/kg	0.20	100	70	130	3.5	20	
Surr: 1,2-Dichlorobenzene-d4				0.20	109	70	130	0.0	10	
Surr: Dibromofluoromethane				0.20	109	70	130	0.0	10	
Surr: p-Bromofluorobenzene				0.20	110	70	130	0.0	10	
Surr: Toluene-d8				0.20	108	70	130	0.0	10	
<b>Lab ID: C16050401-004AMS</b>	5	Sample Matrix Spike				Run: 5975VOC1_160513E				05/14/16 06:41
Benzene		1.90	mg/kg	0.20	95	70	130			
Surr: 1,2-Dichlorobenzene-d4				0.20	109	70	130			
Surr: Dibromofluoromethane				0.20	108	70	130			
Surr: p-Bromofluorobenzene				0.20	114	70	130			
Surr: Toluene-d8				0.20	115	70	130			
<b>Method: SW8260B</b>										Analytical Run: R211772
<b>Lab ID: 17-May-16_CCV_3</b>	5	Continuing Calibration Verification Standard								05/17/16 12:15
Benzene		2.17	mg/kg	0.20	108	70	130			
Surr: 1,2-Dichlorobenzene-d4				0.20	105	70	130			
Surr: Dibromofluoromethane				0.20	94	70	130			
Surr: p-Bromofluorobenzene				0.20	102	70	130			
Surr: Toluene-d8				0.20	102	70	130			

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



# Work Order Receipt Checklist

EOG Resources Inc

C16050401

Login completed by: Tessa Parke

Date Received: 5/11/2016

Reviewed by: Tessa Parke

Received by: res

Reviewed Date: 5/11/2016

Carrier name: Ground

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	3.8°C On Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Contact and Corrective Action Comments:

None



## Chain of Custody and Analytical Request Record

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This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at [www.energylab.com](http://www.energylab.com) for additional information, downloadable fee schedule, forms, and links.