



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
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Tax I.D. 62-0814289

Est. 1970

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

## Report Summary

Friday August 09, 2013

Report Number: L650144

Samples Received: 08/06/13

Client Project: 013-0617

Description: 797-03B CMA Cuttings Sampling

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,  
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,  
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,  
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,  
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,  
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-LOW 4FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 11:55

ESC Sample # : L650144-01

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	16.	2.0	mg/kg	Calc.	08/08/13	1
ORP	150		mV	2580 B-2011	08/07/13	1
pH	8.0		su	9045D	08/08/13	1
Sodium Adsorption Ratio	14.			Calc.	08/09/13	1
Specific Conductance	2200		umhos/cm	9050AMod	08/07/13	1
Mercury	0.026	0.020	mg/kg	7471	08/07/13	1
Arsenic	9.5	0.38	mg/kg	6010B	08/08/13	1
Barium	2800	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	16.	0.50	mg/kg	6010B	08/08/13	1
Copper	21.	1.0	mg/kg	6010B	08/08/13	1
Lead	9.2	0.25	mg/kg	6010B	08/08/13	1
Nickel	13.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.5	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	53.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.4		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	110.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	98.5		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	91.5		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	40.	mg/kg	3546/DRO	08/07/13	10
Surrogate recovery(%) o-Terphenyl	72.6		% Rec.	3546/DRO	08/07/13	10

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-01 (PH) - 8.0@22.1c



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OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-LOW 4FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 11:55

ESC Sample # : L650144-01

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
Naphthalene	0.21	0.20	mg/kg	8270C-SIM	08/07/13	10
Phenanthrene	0.079	0.060	mg/kg	8270C-SIM	08/07/13	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/07/13	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/07/13	10
2-Methylnaphthalene	0.27	0.20	mg/kg	8270C-SIM	08/07/13	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/07/13	10
Surrogate Recovery						
Nitrobenzene-d5	87.4		% Rec.	8270C-SIM	08/07/13	10
2-Fluorobiphenyl	46.8		% Rec.	8270C-SIM	08/07/13	10
p-Terphenyl-d14	81.3		% Rec.	8270C-SIM	08/07/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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L650144-01 (PH) - 8.0@22.1c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-HIGH 6FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:05

ESC Sample # : L650144-02

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	17.	2.0	mg/kg	Calc.	08/08/13	1
ORP	150		mV	2580 B-2011	08/07/13	1
pH	8.0		su	9045D	08/08/13	1
Sodium Adsorption Ratio	7.4			Calc.	08/09/13	1
Specific Conductance	1800		umhos/cm	9050AMod	08/07/13	1
Mercury	0.024	0.020	mg/kg	7471	08/07/13	1
Arsenic	16.	0.38	mg/kg	6010B	08/08/13	1
Barium	2800	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	17.	0.50	mg/kg	6010B	08/08/13	1
Copper	24.	1.0	mg/kg	6010B	08/08/13	1
Lead	11.	0.25	mg/kg	6010B	08/08/13	1
Nickel	14.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.6	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	1.0	mg/kg	6010B	08/08/13	2
Zinc	55.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.9		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	99.0		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	110.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	94.6		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	93.5		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	40.	mg/kg	3546/DRO	08/07/13	10
Surrogate recovery(%) o-Terphenyl	63.3		% Rec.	3546/DRO	08/07/13	10

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-02 (PH) - 8.0@22.1c



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Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-HIGH 6FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:05

ESC Sample # : L650144-02

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Naphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Phenanthrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Methylnaphthalene	0.23	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Surrogate Recovery						
Nitrobenzene-d5	53.3		% Rec.	8270C-SIM	08/08/13	10
2-Fluorobiphenyl	71.5		% Rec.	8270C-SIM	08/08/13	10
p-Terphenyl-d14	69.4		% Rec.	8270C-SIM	08/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L650144-02 (PH) - 8.0@22.1c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-CENTER-LOW 5FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:15

ESC Sample # : L650144-03

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	17.	2.0	mg/kg	Calc.	08/08/13	1
ORP	150		mV	2580 B-2011	08/07/13	1
pH	8.1		su	9045D	08/08/13	1
Sodium Adsorption Ratio	9.2			Calc.	08/09/13	1
Specific Conductance	2000		umhos/cm	9050AMod	08/07/13	1
Mercury	0.032	0.020	mg/kg	7471	08/07/13	1
Arsenic	14.	0.38	mg/kg	6010B	08/08/13	1
Barium	2800	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	17.	0.50	mg/kg	6010B	08/08/13	1
Copper	24.	1.0	mg/kg	6010B	08/08/13	1
Lead	11.	0.25	mg/kg	6010B	08/08/13	1
Nickel	15.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.2	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	51.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.9		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	97.6		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	112.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	96.4		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	92.4		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	80.	mg/kg	3546/DRO	08/07/13	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/07/13	20

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-03 (PH) - 8.1@22.1c



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Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : E-CENTER-LOW 5FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:15

ESC Sample # : L650144-03

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Naphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Phenanthrene	0.070	0.060	mg/kg	8270C-SIM	08/08/13	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Methylnaphthalene	0.35	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Surrogate Recovery						
Nitrobenzene-d5	59.5		% Rec.	8270C-SIM	08/08/13	10
2-Fluorobiphenyl	66.5		% Rec.	8270C-SIM	08/08/13	10
p-Terphenyl-d14	68.3		% Rec.	8270C-SIM	08/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L650144-03 (PH) - 8.1@22.1c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : CENTER-HIGH 6FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:25

ESC Sample # : L650144-04

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	16.	2.0	mg/kg	Calc.	08/08/13	1
ORP	200		mV	2580 B-2011	08/07/13	1
pH	8.1		su	9045D	08/08/13	1
Sodium Adsorption Ratio	11.			Calc.	08/09/13	1
Specific Conductance	2100		umhos/cm	9050AMod	08/07/13	1
Mercury	0.030	0.020	mg/kg	7471	08/07/13	1
Arsenic	11.	0.38	mg/kg	6010B	08/08/13	1
Barium	3100	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	16.	0.50	mg/kg	6010B	08/08/13	1
Copper	24.	1.0	mg/kg	6010B	08/08/13	1
Lead	10.	0.25	mg/kg	6010B	08/08/13	1
Nickel	14.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.8	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	54.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.3		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	116.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	94.2		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	92.4		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	80.	mg/kg	3546/DRO	08/07/13	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/07/13	20

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-04 (PH) - 8.1@22.3c  
L650144-04 (SV8270PAHSIM) - Dilution due to matrix





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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : CENTER-HIGH 6FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 12:25

ESC Sample # : L650144-04

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Naphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Phenanthrene	0.13	0.12	mg/kg	8270C-SIM	08/07/13	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
1-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Methylnaphthalene	0.57	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Chloronaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Surrogate Recovery						
Nitrobenzene-d5	129.		% Rec.	8270C-SIM	08/07/13	20
2-Fluorobiphenyl	131.		% Rec.	8270C-SIM	08/07/13	20
p-Terphenyl-d14	97.1		% Rec.	8270C-SIM	08/07/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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L650144-04 (PH) - 8.1@22.3c

L650144-04 (SV8270PAHSIM) - Dilution due to matrix



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Est. 1970

# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-CENTER-LOW 4FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:45

ESC Sample # : L650144-05

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium, Trivalent	16.	2.0	mg/kg	Calc.	08/08/13	1
ORP	190		mV	2580 B-2011	08/07/13	1
pH	8.9		su	9045D	08/08/13	1
Sodium Adsorption Ratio	13.			Calc.	08/09/13	1
Specific Conductance	1900		umhos/cm	9050AMod	08/07/13	1
Mercury	0.028	0.020	mg/kg	7471	08/07/13	1
Arsenic	18.	0.38	mg/kg	6010B	08/08/13	1
Barium	3000	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	16.	0.50	mg/kg	6010B	08/08/13	1
Copper	24.	1.0	mg/kg	6010B	08/08/13	1
Lead	13.	0.25	mg/kg	6010B	08/08/13	1
Nickel	14.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.2	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	54.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.7		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	111.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	96.6		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	91.7		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	80.	mg/kg	3546/DRO	08/07/13	20
Surrogate recovery(%) o-Terphenyl	0.00		% Rec.	3546/DRO	08/07/13	20

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-05 (PH) - 8.9@22.8c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-CENTER-LOW 4FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:45

ESC Sample # : L650144-05

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Naphthalene	0.25	0.20	mg/kg	8270C-SIM	08/08/13	10
Phenanthrene	0.11	0.060	mg/kg	8270C-SIM	08/08/13	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
1-Methylnaphthalene	0.22	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Methylnaphthalene	0.48	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Surrogate Recovery						
Nitrobenzene-d5	92.6		% Rec.	8270C-SIM	08/08/13	10
2-Fluorobiphenyl	73.8		% Rec.	8270C-SIM	08/08/13	10
p-Terphenyl-d14	83.6		% Rec.	8270C-SIM	08/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L650144-05 (PH) - 8.9@22.8c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-CENTER-HIGH 10FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:50

ESC Sample # : L650144-06

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	17.	2.0	mg/kg	Calc.	08/08/13	1
ORP	170		mV	2580 B-2011	08/07/13	1
pH	8.1		su	9045D	08/08/13	1
Sodium Adsorption Ratio	8.8			Calc.	08/09/13	1
Specific Conductance	640		umhos/cm	9050AMod	08/07/13	1
Mercury	0.037	0.020	mg/kg	7471	08/07/13	1
Arsenic	17.	0.38	mg/kg	6010B	08/08/13	1
Barium	2800	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	17.	0.50	mg/kg	6010B	08/08/13	1
Copper	23.	1.0	mg/kg	6010B	08/08/13	1
Lead	11.	0.25	mg/kg	6010B	08/08/13	1
Nickel	15.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.2	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	1.0	mg/kg	6010B	08/08/13	2
Zinc	51.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.9		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	112.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	99.6		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	89.3		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	40.	mg/kg	3546/DRO	08/07/13	10
Surrogate recovery(%) o-Terphenyl	72.1		% Rec.	3546/DRO	08/07/13	10

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-06 (PH) - 8.1@21.9c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-CENTER-HIGH 10FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:50

ESC Sample # : L650144-06

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
Naphthalene	0.21	0.20	mg/kg	8270C-SIM	08/08/13	10
Phenanthrene	0.067	0.060	mg/kg	8270C-SIM	08/08/13	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	08/08/13	10
1-Methylnaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Methylnaphthalene	0.33	0.20	mg/kg	8270C-SIM	08/08/13	10
2-Chloronaphthalene	BDL	0.20	mg/kg	8270C-SIM	08/08/13	10
Surrogate Recovery						
Nitrobenzene-d5	128.		% Rec.	8270C-SIM	08/08/13	10
2-Fluorobiphenyl	92.1		% Rec.	8270C-SIM	08/08/13	10
p-Terphenyl-d14	91.3		% Rec.	8270C-SIM	08/08/13	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L650144-06 (PH) - 8.1@21.9c



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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-LOW 7FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:55

ESC Sample # : L650144-07

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium, Trivalent	16.	2.0	mg/kg	Calc.	08/08/13	1
ORP	190		mV	2580 B-2011	08/07/13	1
pH	8.1		su	9045D	08/08/13	1
Sodium Adsorption Ratio	9.8			Calc.	08/09/13	1
Specific Conductance	2000		umhos/cm	9050AMod	08/07/13	1
Mercury	0.034	0.020	mg/kg	7471	08/07/13	1
Arsenic	13.	0.38	mg/kg	6010B	08/08/13	1
Barium	3200	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	16.	0.50	mg/kg	6010B	08/08/13	1
Copper	23.	1.0	mg/kg	6010B	08/08/13	1
Lead	11.	0.25	mg/kg	6010B	08/08/13	1
Nickel	13.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.2	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	50.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	94.7		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	112.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	99.6		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	93.8		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	BDL	40.	mg/kg	3546/DRO	08/07/13	10
Surrogate recovery(%) o-Terphenyl	71.6		% Rec.	3546/DRO	08/07/13	10

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-07 (PH) - 8.1@21.6c



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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling

ESC Sample # : L650144-07

Sample ID : W-LOW 7FT

Site ID : 797-03B

Collected By : Lilly Griffin  
Collection Date : 08/05/13 13:55

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Naphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Phenanthrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
1-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Chloronaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Surrogate Recovery						
Nitrobenzene-d5	9.70		% Rec.	8270C-SIM	08/07/13	20
2-Fluorobiphenyl	61.0		% Rec.	8270C-SIM	08/07/13	20
p-Terphenyl-d14	83.6		% Rec.	8270C-SIM	08/07/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/09/13 15:11 Printed: 08/09/13 15:17  
L650144-07 (PH) - 8.1@21.6c



12065 Lebanon Rd.  
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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-HIGH 10.5FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 14:00

ESC Sample # : L650144-08

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	08/09/13	1
Chromium,Trivalent	16.	2.0	mg/kg	Calc.	08/08/13	1
ORP	190		mV	2580 B-2011	08/07/13	1
pH	9.6		su	9045D	08/08/13	1
Sodium Adsorption Ratio	10.			Calc.	08/09/13	1
Specific Conductance	1700		umhos/cm	9050AMod	08/07/13	1
Mercury	0.031	0.020	mg/kg	7471	08/07/13	1
Arsenic	12.	0.38	mg/kg	6010B	08/08/13	1
Barium	2800	0.25	mg/kg	6010B	08/08/13	1
Cadmium	BDL	0.25	mg/kg	6010B	08/08/13	1
Chromium	16.	0.50	mg/kg	6010B	08/08/13	1
Copper	23.	1.0	mg/kg	6010B	08/08/13	1
Lead	10.	0.25	mg/kg	6010B	08/08/13	1
Nickel	15.	1.0	mg/kg	6010B	08/08/13	1
Selenium	1.4	1.0	mg/kg	6010B	08/08/13	1
Silver	BDL	0.50	mg/kg	6010B	08/08/13	1
Zinc	52.	1.5	mg/kg	6010B	08/08/13	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	08/08/13	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.3		% Rec.	602/8015	08/08/13	5
Benzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Toluene	BDL	0.025	mg/kg	8260B	08/06/13	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/06/13	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/06/13	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	08/06/13	5
Dibromofluoromethane	105.		% Rec.	8260B	08/06/13	5
a,a,a-Trifluorotoluene	96.9		% Rec.	8260B	08/06/13	5
4-Bromofluorobenzene	87.3		% Rec.	8260B	08/06/13	5
TPH (GC/FID) High Fraction	53.	40.	mg/kg	3546/DRO	08/07/13	10
Surrogate recovery(%) o-Terphenyl	85.8		% Rec.	3546/DRO	08/07/13	10

## Polynuclear Aromatic Hydrocarbons

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
L650144-08 (PH) - 9.6@21.3c  
L650144-08 (SV8270PAHSIM) - Dilution due to matrix





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# REPORT OF ANALYSIS

Blair Rollins  
OXY USA Inc - Grand Junction, CO  
760 Horizon Dr., Ste. 101  
Grand Junction, CO 81506

August 09, 2013

Date Received : August 06, 2013  
Description : 797-03B CMA Cuttings Sampling  
Sample ID : W-HIGH 10.5FT  
Collected By : Lilly Griffin  
Collection Date : 08/05/13 14:00

ESC Sample # : L650144-08

Site ID : 797-03B

Project # : 013-0617

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Fluorene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Naphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Phenanthrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
Pyrene	BDL	0.12	mg/kg	8270C-SIM	08/07/13	20
1-Methylnaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Methylnaphthalene	0.45	0.40	mg/kg	8270C-SIM	08/07/13	20
2-Chloronaphthalene	BDL	0.40	mg/kg	8270C-SIM	08/07/13	20
Surrogate Recovery						
Nitrobenzene-d5	115.		% Rec.	8270C-SIM	08/07/13	20
2-Fluorobiphenyl	113.		% Rec.	8270C-SIM	08/07/13	20
p-Terphenyl-d14	84.8		% Rec.	8270C-SIM	08/07/13	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L650144-08 (PH) - 9.6@21.3c

L650144-08 (SV8270PAHSIM) - Dilution due to matrix

Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L650144-01	WG675642	SAMP	2-Fluorobiphenyl	R2771845	J2
	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
L650144-02	WG675746	SAMP	Silver	R2773401	O
	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
L650144-03	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
	WG675653	SAMP	o-Terphenyl	R2771903	J7
L650144-04	WG675642	SAMP	Nitrobenzene-d5	R2771845	J7
	WG675642	SAMP	2-Fluorobiphenyl	R2771845	J7
	WG675642	SAMP	p-Terphenyl-d14	R2771845	J7
	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
	WG675653	SAMP	o-Terphenyl	R2771903	J7
L650144-05	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
	WG675653	SAMP	o-Terphenyl	R2771903	J7
L650144-06	WG675746	SAMP	Silver	R2773401	O
	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
L650144-07	WG675642	SAMP	Anthracene	R2771845	O
	WG675642	SAMP	Acenaphthene	R2771845	O
	WG675642	SAMP	Acenaphthylene	R2771845	O
	WG675642	SAMP	Benzo(a)anthracene	R2771845	O
	WG675642	SAMP	Benzo(a)pyrene	R2771845	O
	WG675642	SAMP	Benzo(b)fluoranthene	R2771845	O
	WG675642	SAMP	Benzo(g,h,i)perylene	R2771845	O
	WG675642	SAMP	Benzo(k)fluoranthene	R2771845	O
	WG675642	SAMP	Chrysene	R2771845	O
	WG675642	SAMP	Dibenz(a,h)anthracene	R2771845	O
	WG675642	SAMP	Fluoranthene	R2771845	O
	WG675642	SAMP	Fluorene	R2771845	O
	WG675642	SAMP	Indeno(1,2,3-cd)pyrene	R2771845	O
	WG675642	SAMP	Naphthalene	R2771845	O
	WG675642	SAMP	Phenanthrene	R2771845	O
	WG675642	SAMP	Pyrene	R2771845	O
	WG675642	SAMP	1-Methylnaphthalene	R2771845	O
	WG675642	SAMP	2-Methylnaphthalene	R2771845	O
	WG675642	SAMP	2-Chloronaphthalene	R2771845	O
	WG675642	SAMP	Nitrobenzene-d5	R2771845	J7
	WG675642	SAMP	2-Fluorobiphenyl	R2771845	J7
	WG675642	SAMP	p-Terphenyl-d14	R2771845	J7
	WG675653	SAMP	TPH (GC/FID) High Fraction	R2771903	O
L650144-08	WG675642	SAMP	Nitrobenzene-d5	R2771845	J7
	WG675642	SAMP	2-Fluorobiphenyl	R2771845	J7
	WG675642	SAMP	p-Terphenyl-d14	R2771845	J7

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.