



12065 Lebanon Rd.
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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

Tuesday October 04, 2011

Report Number: L538906

Samples Received: 09/29/11

Client Project: 900546.0013.010

Description: Oxy Cuttings

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:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
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REPORT OF ANALYSIS

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

October 04, 2011

Date Received : September 29, 2011
 Description : Oxy Cuttings
 Sample ID : 609-33-S4-DISPOSAL-N
 Collected By : CJB
 Collection Date : 09/27/11 07:50

ESC Sample # : L538906-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	1.1	0.71	2.0	mg/kg	JP1	3060A/7	10/04/11	1
Chromium,Trivalent	9.6	0.17	2.0	mg/kg		Calc.	10/03/11	1
ORP	180			mV	T8	2580	10/03/11	1
pH	9.2			su		9045D	09/30/11	1
Sodium Adsorption Ratio	36.					Calc.	10/01/11	1
Specific Conductance	1900			umhos/cm		9050AMo	09/30/11	1
Mercury	0.0072	0.0015	0.020	mg/kg	J	7471	09/30/11	1
Arsenic	2.6	0.32	1.0	mg/kg		6010B	10/03/11	1
Barium	590	0.050	0.25	mg/kg		6010B	10/03/11	1
Cadmium	0.54	0.040	0.25	mg/kg		6010B	10/03/11	1
Chromium	11.	0.085	0.50	mg/kg		6010B	10/03/11	1
Copper	16.	0.21	1.0	mg/kg		6010B	10/03/11	1
Lead	7.4	0.090	0.25	mg/kg		6010B	10/03/11	1
Nickel	9.6	0.26	1.0	mg/kg		6010B	10/03/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	10/03/11	1
Silver	U	0.16	0.50	mg/kg		6010B	10/03/11	1
Zinc	38.	0.34	1.5	mg/kg		6010B	10/03/11	1
TPH (GC/FID) Low Fraction	2.1	0.25	0.50	mg/kg		8015D/G	09/30/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	107.			% Rec.		602/801	09/30/11	5
Benzene	0.44	0.0017	0.0050	mg/kg		8260B	10/01/11	5
Toluene	0.24	0.0016	0.025	mg/kg		8260B	10/01/11	5
Ethylbenzene	0.030	0.0019	0.0050	mg/kg		8260B	10/01/11	5
Total Xylenes	0.096	0.0023	0.015	mg/kg		8260B	10/01/11	5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	10/01/11	5
Dibromofluoromethane	106.			% Rec.		8260B	10/01/11	5
a,a,a-Trifluorotoluene	115.			% Rec.		8260B	10/01/11	5
4-Bromofluorobenzene	105.			% Rec.		8260B	10/01/11	5
TPH (GC/FID) High Fraction	1900	31.	160	mg/kg		3546/DR	10/03/11	39.94
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	10/03/11	39.94

U = ND (Not Detected)
 MDL = Minimum Detection Limit = LOD
 RDL = Reported Detection Limit = LOQ = PQL = EQL
 Note:

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Reported: 10/04/11 17:22 Printed: 10/04/11 17:46
 L538906-01 (PH) - 9.18@19.7c



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October 04, 2011

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 Sample ID : 609-33-S4-DISPOSAL-N
 Collected By : CJB
 Collection Date : 09/27/11 07:50

ESC Sample # : L538906-01

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.038	0.30	mg/kg		8270C-S	10/01/11	50
Acenaphthene	U	0.035	0.30	mg/kg		8270C-S	10/01/11	50
Acenaphthylene	0.045	0.029	0.30	mg/kg	J	8270C-S	10/01/11	50
Benzo(a)anthracene	0.12	0.046	0.30	mg/kg	J	8270C-S	10/01/11	50
Benzo(a)pyrene	U	0.031	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(b)fluoranthene	U	0.041	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(g,h,i)perylene	U	0.062	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(k)fluoranthene	U	0.067	0.30	mg/kg		8270C-S	10/01/11	50
Chrysene	0.076	0.055	0.30	mg/kg	J	8270C-S	10/01/11	50
Dibenz(a,h)anthracene	U	0.056	0.30	mg/kg		8270C-S	10/01/11	50
Fluoranthene	U	0.052	0.30	mg/kg		8270C-S	10/01/11	50
Fluorene	0.12	0.028	0.30	mg/kg	J	8270C-S	10/01/11	50
Indeno(1,2,3-cd)pyrene	U	0.058	0.30	mg/kg		8270C-S	10/01/11	50
Naphthalene	0.88	0.032	0.30	mg/kg		8270C-S	10/01/11	50
Phenanthrene	0.35	0.037	0.30	mg/kg		8270C-S	10/01/11	50
Pyrene	0.065	0.030	0.30	mg/kg	J	8270C-S	10/01/11	50
1-Methylnaphthalene	0.87	0.039	0.30	mg/kg		8270C-S	10/01/11	50
2-Methylnaphthalene	1.2	0.029	0.30	mg/kg		8270C-S	10/01/11	50
2-Chloronaphthalene	U	0.030	0.30	mg/kg		8270C-S	10/01/11	50
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	10/01/11	50
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	10/01/11	50
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	10/01/11	50

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October 04, 2011

Date Received : September 29, 2011
 Description : Oxy Cuttings
 Sample ID : 609-33-S4-DISPOSAL-NW
 Collected By : CJB
 Collection Date : 09/27/11 07:45

ESC Sample # : L538906-02

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chromium,Hexavalent	U	0.71	2.0	mg/kg		3060A/7	10/04/11	1
Chromium,Trivalent	11.	0.17	2.0	mg/kg		Calc.	10/03/11	1
ORP	170			mV	T8	2580	10/03/11	1
pH	8.4			su		9045D	09/30/11	1
Sodium Adsorption Ratio	35.					Calc.	10/01/11	1
Specific Conductance	2100			umhos/cm		9050AMo	09/30/11	1
Mercury	0.010	0.0015	0.020	mg/kg	J	7471	09/30/11	1
Arsenic	3.7	0.32	1.0	mg/kg		6010B	10/03/11	1
Barium	1400	0.050	0.25	mg/kg		6010B	10/03/11	1
Cadmium	0.59	0.040	0.25	mg/kg		6010B	10/03/11	1
Chromium	11.	0.085	0.50	mg/kg		6010B	10/03/11	1
Copper	11.	0.21	1.0	mg/kg		6010B	10/03/11	1
Lead	10.	0.090	0.25	mg/kg		6010B	10/03/11	1
Nickel	6.8	0.26	1.0	mg/kg		6010B	10/03/11	1
Selenium	U	0.32	1.0	mg/kg		6010B	10/03/11	1
Silver	0.17	0.16	0.50	mg/kg	J	6010B	10/03/11	1
Zinc	37.	0.34	1.5	mg/kg		6010B	10/03/11	1
TPH (GC/FID) Low Fraction	3.1	0.25	0.50	mg/kg		8015D/G	09/30/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	100.			% Rec.		602/801	09/30/11	5
Benzene	0.025	0.0017	0.0050	mg/kg		8260B	10/01/11	5
Toluene	0.036	0.0016	0.025	mg/kg		8260B	10/01/11	5
Ethylbenzene	0.0034	0.0019	0.0050	mg/kg	J	8260B	10/01/11	5
Total Xylenes	0.037	0.0023	0.015	mg/kg		8260B	10/01/11	5
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	10/01/11	5
Dibromofluoromethane	108.			% Rec.		8260B	10/01/11	5
a,a,a-Trifluorotoluene	111.			% Rec.		8260B	10/01/11	5
4-Bromofluorobenzene	94.1			% Rec.		8260B	10/01/11	5
TPH (GC/FID) High Fraction	1600	31.	160	mg/kg		3546/DR	10/03/11	39.94
Surrogate recovery(%) o-Terphenyl	0.00			% Rec.	J7	3546/DR	10/03/11	39.94

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 L538906-02 (PH) - 8.38@20.2c



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October 04, 2011

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 Sample ID : 609-33-S4-DISPOSAL-NW
 Collected By : CJB
 Collection Date : 09/27/11 07:45

ESC Sample # : L538906-02

Site ID :

Project # : 900546.0013.010

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.045	0.038	0.30	mg/kg	J	8270C-S	10/01/11	50
Acenaphthene	U	0.035	0.30	mg/kg		8270C-S	10/01/11	50
Acenaphthylene	U	0.029	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(a)anthracene	0.12	0.046	0.30	mg/kg	J	8270C-S	10/01/11	50
Benzo(a)pyrene	U	0.031	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(b)fluoranthene	U	0.041	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(g,h,i)perylene	U	0.062	0.30	mg/kg		8270C-S	10/01/11	50
Benzo(k)fluoranthene	U	0.067	0.30	mg/kg		8270C-S	10/01/11	50
Chrysene	0.11	0.055	0.30	mg/kg	J	8270C-S	10/01/11	50
Dibenz(a,h)anthracene	U	0.056	0.30	mg/kg		8270C-S	10/01/11	50
Fluoranthene	U	0.052	0.30	mg/kg		8270C-S	10/01/11	50
Fluorene	0.14	0.028	0.30	mg/kg	J	8270C-S	10/01/11	50
Indeno(1,2,3-cd)pyrene	U	0.058	0.30	mg/kg		8270C-S	10/01/11	50
Naphthalene	0.42	0.032	0.30	mg/kg		8270C-S	10/01/11	50
Phenanthrene	0.43	0.037	0.30	mg/kg		8270C-S	10/01/11	50
Pyrene	0.064	0.030	0.30	mg/kg	J	8270C-S	10/01/11	50
1-Methylnaphthalene	0.27	0.039	0.30	mg/kg	J	8270C-S	10/01/11	50
2-Methylnaphthalene	0.95	0.029	0.30	mg/kg		8270C-S	10/01/11	50
2-Chloronaphthalene	U	0.030	0.30	mg/kg		8270C-S	10/01/11	50
Surrogate Recovery								
Nitrobenzene-d5	0.00			% Rec.	J7	8270C-S	10/01/11	50
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C-S	10/01/11	50
p-Terphenyl-d14	0.00			% Rec.	J7	8270C-S	10/01/11	50

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier	
L538906-01	WG558143	SAMP	o-Terphenyl	R1882612	J7	
	WG558284	SAMP	Chromium, Hexavalent	R1883194	JP1	
	WG558092	SAMP	Mercury	R1878852	J	
	WG558076	SAMP	Acenaphthylene	R1880112	J	
	WG558076	SAMP	Benzo(a)anthracene	R1880112	J	
	WG558076	SAMP	Chrysene	R1880112	J	
	WG558076	SAMP	Fluorene	R1880112	J	
	WG558076	SAMP	Pyrene	R1880112	J	
	WG558076	SAMP	Nitrobenzene-d5	R1880112	J7	
	WG558076	SAMP	2-Fluorobiphenyl	R1880112	J7	
	WG558076	SAMP	p-Terphenyl-d14	R1880112	J7	
	WG558330	SAMP	ORP	R1881872	T8	
	L538906-02	WG558050	SAMP	Silver	R1881532	J
		WG558143	SAMP	o-Terphenyl	R1882612	J7
WG558092		SAMP	Mercury	R1878852	J	
WG558153		SAMP	Ethylbenzene	R1880653	J	
WG558076		SAMP	Anthracene	R1880112	J	
WG558076		SAMP	Benzo(a)anthracene	R1880112	J	
WG558076		SAMP	Chrysene	R1880112	J	
WG558076		SAMP	Fluorene	R1880112	J	
WG558076		SAMP	Pyrene	R1880112	J	
WG558076		SAMP	1-Methylnaphthalene	R1880112	J	
WG558076		SAMP	Nitrobenzene-d5	R1880112	J7	
WG558076		SAMP	2-Fluorobiphenyl	R1880112	J7	
WG558076		SAMP	p-Terphenyl-d14	R1880112	J7	
WG558330		SAMP	ORP	R1881872	T8	

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

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.