

**State of Colorado**  
**Oil and Gas Conservation Commission**

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

REM 9383

Document 2144730

Date 12/04/2015

## SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

### CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release   ☐ Plug & Abandon   ☐ Central Facility Closure   ☐ Site/Facility Closure   ☐ Other (describe): \_\_\_\_\_

OGCC Employee:

☐ Spill   ☐ Complaint  
☐ Inspection   ☐ NOAV

Tracking No:

OGCC Operator Number: 66571Name of Operator: OXY USA WTP LPAddress: 760 Horizon Drive, Suite 101City: Grand Junction State: CO Zip: 81506

Contact Name and Telephone:

Blair K. RollinsNo: (970) 263-3637Fax: (970) 263-3694

API Number: \_\_\_\_\_

County: GarfieldFacility Name: Spill point 443923Facility Number: Spill point 443923

Well Name: \_\_\_\_\_

Well Number: \_\_\_\_\_

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SENW, Sec 16, T6S, R97W, 6th PM Latitude: 39.524566 Longitude: -108.225131

### TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced water & CondensateSite Conditions: Is location within a sensitive area (according to Rule 901a)?   ☐ Y   ☐ N   If yes, attach evaluation.Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Non-crop landSoil type, if not previously identified on Form 2A or Federal Surface Use Plan: Parachute - Rhone loams, 5 - 30% slopesPotential receptors (water wells within 1/4 mi, surface waters, etc.): Dry drainage feature located approximately 500' west of location, surface water pond located approximately 1400 feet south of the location.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

☒ Soils☐ Vegetation☐ Groundwater☐ Surface Water

Extent of Impact:

Contamination found in spoils pile (~2 CY)NoneNoneNone

How Determined:

Laboratory analysisVisuallyVisuallyVisually

### REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Please reference initial spill report document #400934578 and supplemental spill report document #400938681.

Describe how source is to be removed:

The impacted material was scraped into a small pile on the cutslope to allow for confirmation sampling of the spill area and characterization of the spoils. Confirmation sampling of the spill area identified no existing contamination present within the spill path, please reference laboratory analytical results table attached.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Oxy proposes to install a berm around the spoils pile to ensure snow melt and spring runoff precipitation events do not migrate the spoils pile from the cutslope where it is currently located. Once favorable conditions exist, Oxy will spread the spoils pile out for stabilization of the impacted spoils. Following spreading of the material, Oxy will ensure compliance with COGCC Table 910-1 standards prior to reuse on the well pad location.



Page 2  
**REMEDIATION WORKPLAN (Cont.)**

Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):  
During scraping of the spilled material on the pad location, Oxy did not identify any impacts to groundwater. Oxy walked around the pad to ensure no expressions of the spilled material had migrated off the pad location.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.  
Oxy will spread the impacted spoils pile on the well pad location in the spring of 2016 to allow for stabilization of the material. Following favorable laboratory analysis of the spoils pile, Oxy will spread the material back onto the working surface of the well pad for incorporation. Oxy will cap and seed the spread out material as part of final well pad reclamation.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

Oxy will install the berm around the spoils pile to ensure to migration of contaminants occurs through the winter. When temperatures become favorable for stabilization, Oxy will spread the material on the location for stabilization. Oxy will confirm effectiveness of remediation by collecting soil samples for laboratory analysis.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Following successful remediation of the impacted soils pile, Oxy will spread the material onto the working surface of the well pad to be reincorporated into the location. Oxy will cap and reseed the incorporated material as part of final pad reclamation activities.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: <u>11/9/2015</u>	Date Site Investigation Completed: <u>11/20/2015</u>	Date Remediation Plan Submitted: <u>12/2/15</u>
Remediation Start Date: <u>4/1/2016</u>	Anticipated Completion Date: <u>7/1/2016</u>	Actual Completion Date: <u>TBD</u>

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Blair K. Rollins

Signed: [Signature]

Title: HES Specialist

Date: December 2, 2015

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



OXY USA WTP LP

760 Horizon Drive, Suite 101  
Grand Junction, CO 81506

## 697-16-28 Spill Sample Location Map

Revision: 12/2/2015 Garfield County, CO

0 50 100 150  
Feet



### Sample Location

● Spill area sample

● Spoil pile sample

■ Spoil Pile

697-16-28 Frac Tank Overflow Spill	
Location:	697-16-28

	Sample Identifications (mg/kg)			
	Lab Report #	L524257	15111272	15111272
	Date Sampled	07/01/2011	11/20/2015	11/20/2015
	Sample Type	Background	Spill area	Spoil
	Sample Name	BG-W 6"	Low Spot	Spoil

Organics in Soil	MCL (mg/Kg)			
<b>TPH (GRO and DRO)</b>	<b>500</b>		<b>290</b>	<b>820</b>
<b>Benzene</b>	<b>0.17</b>		<0.038	<0.039
<b>Toluene</b>	<b>85</b>		0.39	0.26
<b>Ethylbenzene</b>	<b>100</b>		0.11	0.18
<b>Xylenes</b>	<b>175</b>		3	4.6

Organics in Soil (PAH's)				
<b>Acenaphthene</b>	<b>1000</b>		<0.0083	<0.0086
<b>Anthracene</b>	<b>1000</b>		<0.0083	0.011
<b>Benzo(A)anthracene</b>	<b>0.22</b>		<0.0083	0.024
<b>Benzo(B)fluoranthene</b>	<b>0.22</b>		<0.0083	0.035
<b>Benzo(K)fluoranthene</b>	<b>2.2</b>		<0.0083	0.014
<b>Benzo(A)pyrene</b>	<b>0.022</b>		0.011	<b>0.026</b>
<b>Chrysene</b>	<b>22</b>		<0.0083	0.031
<b>Dibenzo(A,H)anthracene</b>	<b>0.022</b>		<0.0083	0.009
<b>Fluoranthene</b>	<b>1000</b>		0.01	0.028
<b>Flourene</b>	<b>1000</b>		0.013	<0.0086
<b>Indeno(1,2,3,C,D)pyrene</b>	<b>0.22</b>		<0.0083	0.017
<b>Naphthalene</b>	<b>23</b>		0.045	0.19
<b>Pyrene</b>	<b>1000</b>		0.026	0.035

Inorganics in Soil				
<b>EC</b>	<b>&lt;4 mmhos/cm or 2X background</b>	0.03	<b>9.90</b>	2.3
<b>SAR</b>	<b>&lt;12</b>		6.6	5.1
<b>pH</b>	<b>6-9</b>	6.4	8.2	8.6

Metals in Soils				
<b>Arsenic</b>	<b>0.39</b>	<b>30</b>	27	24
<b>Barium</b>	<b>15,000</b>		420	640
<b>Cadmium</b>	<b>70</b>		<0.93	<0.93
<b>Chromium III</b>	<b>120,000</b>		25	31.0
<b>Chromium VI</b>	<b>23</b>		<1.2	<1.2
<b>Copper</b>	<b>3100</b>		19	24.0
<b>Lead</b>	<b>400</b>		16	18.0
<b>Mercury</b>	<b>23</b>		0.029	0.029
<b>Nickel</b>	<b>1600</b>		23	26.0
<b>Selenium</b>	<b>390</b>		1.5	1.40
<b>Silver</b>	<b>390</b>		<0.46	<0.47
<b>Zinc</b>	<b>23,000</b>		76.0	91.0





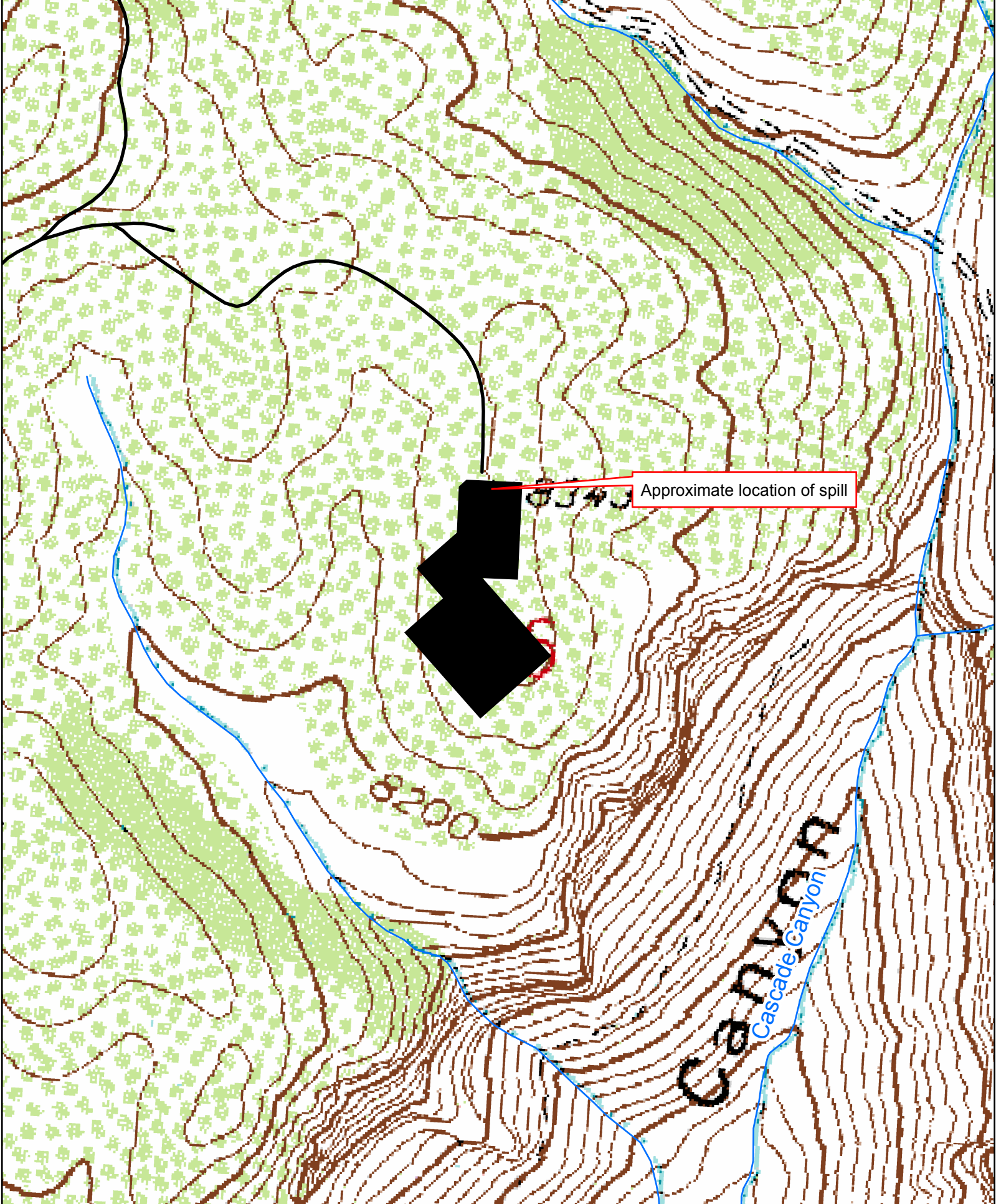
Approximate location of spill

016

Cascade Canyon

697-16-28 Pad (Location ID #335643) Spill on November 9, 2015  
QtrQtr: SENW    Section: 16    Township: 6S    Range 97W    Meridian: 6th





Approximate location of spill

Cascade Canyon

697-16-28 Pad (Location ID #335643) Spill on November 9, 2015  
QtrQtr: SENW    Section: 16    Township: 6S    Range 97W    Meridian: 6th



02-Dec-2015

Blair Rollins  
Oxy USA WTP LP  
760 Horizon Dr.  
Grand Junction, CO 81506

Re: **697-16-28 Spill**

Work Order: **15111272**

Dear Blair,

ALS Environmental received 2 samples on 21-Nov-2015 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 26.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

*Chad Whelton*

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 532786

### Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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**Client:** Oxy USA WTP LP  
**Project:** 697-16-28 Spill  
**Work Order:** 15111272**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
15111272-01	Low Spot	Soil		11/20/2015 08:30	11/21/2015 10:00	<input type="checkbox"/>
15111272-02	Spoil	Soil		11/20/2015 09:00	11/21/2015 10:00	<input type="checkbox"/>



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**Client:** Oxy USA WTP LP**Project:** 697-16-28 Spill**Work Order:** 15111272**Case Narrative**

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Batch 79333, Method ICP\_6010\_S, Sample 15111272-02B MS/MSD: The MS and MSD recoveries were outside of the control limits for Barium and Zinc; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required.

Batch 79333, Method ICP\_6010\_S, Sample 15111272-02B MS/MSD: The MS and MSD recovery was above the upper control limit for Chromium. The corresponding result in the parent sample may be biased high.

Batch 79333, Method ICP\_6010\_S, Sample 15111272-02B MS/MSD: The MS and MSD recovery was below the lower control limit for Arsenic. The corresponding result in the parent sample may be biased low.

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

# ALS Group USA, Corp

Date: 02-Dec-15

**Client:** Oxy USA WTP LP  
**Project:** 697-16-28 Spill  
**Sample ID:** Low Spot  
**Collection Date:** 11/20/2015 08:30 AM

**Work Order:** 15111272  
**Lab ID:** 15111272-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 11/25/15	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>160</b>		<b>5.2</b>	<b>mg/Kg-dry</b>	1	11/26/2015 02:43 AM
Surr: 4-Terphenyl-d14	75.8		39-133	%REC	1	11/26/2015 02:43 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015D</b>		Prep: SW5035 / 11/23/15	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>130</b>		<b>3.2</b>	<b>mg/Kg-dry</b>	1	11/24/2015 12:23 PM
Surr: Toluene-d8	115		50-150	%REC	1	11/24/2015 12:23 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471B</b>		Prep: SW7471 / 11/29/15	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.029</b>		<b>0.017</b>	<b>mg/Kg-dry</b>	1	11/30/2015 03:11 AM
<b>METALS ANALYSIS BY ICP</b>						
			<b>SW846 6010C</b>		Prep: SW3050B / 11/23/15	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>27</b>		<b>0.46</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>Barium</b>	<b>420</b>		<b>0.46</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
Cadmium	ND		0.93	mg/Kg-dry	1	11/25/2015 12:45 PM
<b>Chromium</b>	<b>25</b>		<b>0.46</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>Copper</b>	<b>19</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>Lead</b>	<b>16</b>		<b>0.46</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>Nickel</b>	<b>23</b>		<b>0.46</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>Selenium</b>	<b>1.5</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
Silver	ND		0.46	mg/Kg-dry	1	11/25/2015 12:45 PM
<b>Zinc</b>	<b>76</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	1	11/25/2015 12:45 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 11/25/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>630</b>		<b>5.0</b>	<b>mg/L</b>	10	11/30/2015 01:53 PM
<b>Magnesium</b>	<b>120</b>		<b>2.0</b>	<b>mg/L</b>	10	11/30/2015 01:53 PM
<b>Sodium</b>	<b>690</b>		<b>2.0</b>	<b>mg/L</b>	10	11/30/2015 01:53 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 11/25/15	Analyst: <b>JEC</b>
<b>Exchangeable Sodium Percentage</b>	<b>7.9</b>		<b>0.010</b>	<b>none</b>	1	11/30/2015
<b>Sodium Adsorption Ratio</b>	<b>6.6</b>		<b>0.010</b>	<b>none</b>	1	11/30/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 11/25/15	Analyst: <b>RM</b>
2-Chloronaphthalene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
<b>2-Methylnaphthalene</b>	<b>0.15</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	1	11/26/2015 06:07 AM
Acenaphthene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
Acenaphthylene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
Anthracene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
Benzo(a)anthracene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
<b>Benzo(a)pyrene</b>	<b>0.011</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	1	11/26/2015 06:07 AM
Benzo(b)fluoranthene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group USA, Corp

Date: 02-Dec-15

Client: Oxy USA WTP LP  
Project: 697-16-28 Spill  
Sample ID: Low Spot  
Collection Date: 11/20/2015 08:30 AM

Work Order: 15111272  
Lab ID: 15111272-01  
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Benzo(g,h,i)perylene</b>	<b>0.018</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
Benzo(k)fluoranthene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
Chrysene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
Dibenzo(a,h)anthracene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
<b>Fluoranthene</b>	<b>0.010</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
<b>Fluorene</b>	<b>0.013</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
Indeno(1,2,3-cd)pyrene	ND		0.0083	mg/Kg-dry	1	11/26/2015 06:07 AM
<b>Naphthalene</b>	<b>0.045</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
<b>Phenanthrene</b>	<b>0.023</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
<b>Pyrene</b>	<b>0.026</b>		<b>0.0083</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:07 AM
Surr: 2-Fluorobiphenyl	74.9		12-100	%REC	1	11/26/2015 06:07 AM
Surr: 4-Terphenyl-d14	75.8		25-137	%REC	1	11/26/2015 06:07 AM
Surr: Nitrobenzene-d5	61.5		37-107	%REC	1	11/26/2015 06:07 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 11/23/15	Analyst: <b>LSY</b>	
Benzene	ND		0.038	mg/Kg-dry	1	11/26/2015 06:27 AM
<b>Ethylbenzene</b>	<b>0.11</b>		<b>0.038</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>m,p-Xylene</b>	<b>2.5</b>		<b>0.076</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>o-Xylene</b>	<b>0.46</b>		<b>0.038</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>Toluene</b>	<b>0.39</b>		<b>0.038</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>Xylenes, Total</b>	<b>3.0</b>		<b>0.11</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
Surr: 1,2-Dichloroethane-d4	94.4		70-130	%REC	1	11/26/2015 06:27 AM
Surr: 4-Bromofluorobenzene	108		70-130	%REC	1	11/26/2015 06:27 AM
Surr: Dibromofluoromethane	90.4		70-130	%REC	1	11/26/2015 06:27 AM
Surr: Toluene-d8	90.0		70-130	%REC	1	11/26/2015 06:27 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 11/25/15	Analyst: <b>JB</b>	
<b>Electrical Conductivity @ Saturation</b>	<b>9.9</b>		<b>0.12</b>	<b>mmhos/cm @2</b>	<b>25</b>	11/25/2015 10:15 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Analyst: <b>JJG</b>		
<b>Chromium, Trivalent</b>	<b>25</b>		<b>0.63</b>	<b>mg/Kg-dry</b>	<b>1</b>	12/1/2015 08:01 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 11/22/15	Analyst: <b>MB</b>	
<b>Chromium, Hexavalent</b>	ND		1.2	mg/Kg-dry	1	11/23/2015 03:30 PM
<b>MOISTURE</b>			<b>E160.3M</b>	Analyst: <b>ED</b>		
<b>Moisture</b>	<b>21</b>		<b>0.050</b>	<b>% of sample</b>	<b>1</b>	11/25/2015 07:16 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 11/23/15	Analyst: <b>STP</b>	
<b>pH</b>	<b>8.2</b>			<b>s.u.</b>	<b>1</b>	11/23/2015 01:15 PM

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 02-Dec-15

Client: Oxy USA WTP LP  
Project: 697-16-28 Spill  
Sample ID: Spoil  
Collection Date: 11/20/2015 09:00 AM

Work Order: 15111272  
Lab ID: 15111272-02  
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep: SW3541 / 11/25/15	Analyst: <b>IT</b>
<b>DRO (C10-C28)</b>	<b>230</b>		<b>5.3</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 03:13 AM
Surr: 4-Terphenyl-d14	74.0		39-133	%REC	1	11/26/2015 03:13 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015D</b>		Prep: SW5035 / 11/23/15	Analyst: <b>IT</b>
<b>GRO (C6-C10)</b>	<b>590</b>		<b>3.3</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/24/2015 12:48 PM
Surr: Toluene-d8	112		50-150	%REC	1	11/24/2015 12:48 PM
<b>MERCURY BY CVAA</b>						
			<b>SW7471B</b>		Prep: SW7471 / 11/29/15	Analyst: <b>LR</b>
<b>Mercury</b>	<b>0.029</b>		<b>0.017</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/30/2015 03:13 AM
<b>METALS ANALYSIS BY ICP</b>						
			<b>SW846 6010C</b>		Prep: SW3050B / 11/23/15	Analyst: <b>JEC</b>
<b>Arsenic</b>	<b>24</b>		<b>0.47</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>Barium</b>	<b>640</b>		<b>0.47</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
Cadmium	ND		0.93	mg/Kg-dry	1	11/25/2015 12:50 PM
<b>Chromium</b>	<b>31</b>		<b>0.47</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>Copper</b>	<b>24</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>Lead</b>	<b>18</b>		<b>0.47</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>Nickel</b>	<b>26</b>		<b>0.47</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>Selenium</b>	<b>1.4</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	<b>1</b>	12/1/2015 12:04 PM
Silver	ND		0.47	mg/Kg-dry	1	11/25/2015 12:50 PM
<b>Zinc</b>	<b>91</b>		<b>0.93</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/25/2015 12:50 PM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 11/25/15	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>130</b>		<b>5.0</b>	<b>mg/L</b>	<b>10</b>	11/30/2015 01:59 PM
<b>Magnesium</b>	<b>19</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	11/30/2015 01:59 PM
<b>Sodium</b>	<b>240</b>		<b>2.0</b>	<b>mg/L</b>	<b>10</b>	11/30/2015 01:59 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 11/25/15	Analyst: <b>JEC</b>
<b>Exchangeable Sodium Percentage</b>	<b>5.9</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	11/30/2015
<b>Sodium Adsorption Ratio</b>	<b>5.1</b>		<b>0.010</b>	<b>none</b>	<b>1</b>	11/30/2015
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 11/25/15	Analyst: <b>RM</b>
2-Chloronaphthalene	ND		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
<b>2-Methylnaphthalene</b>	<b>0.74</b>		<b>0.0086</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
Acenaphthene	ND		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Acenaphthylene	ND		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
<b>Anthracene</b>	<b>0.011</b>		<b>0.0086</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>Benzo(a)anthracene</b>	<b>0.024</b>		<b>0.0086</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>Benzo(a)pyrene</b>	<b>0.026</b>		<b>0.0086</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM
<b>Benzo(b)fluoranthene</b>	<b>0.035</b>		<b>0.0086</b>	<b>mg/Kg-dry</b>	<b>1</b>	11/26/2015 06:27 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 02-Dec-15

Client: Oxy USA WTP LP  
Project: 697-16-28 Spill  
Sample ID: Spoil  
Collection Date: 11/20/2015 09:00 AM

Work Order: 15111272  
Lab ID: 15111272-02  
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Benzo(g,h,i)perylene	0.018		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Benzo(k)fluoranthene	0.014		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Chrysene	0.031		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Dibenzo(a,h)anthracene	0.0090		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Fluoranthene	0.028		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Fluorene	ND		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Indeno(1,2,3-cd)pyrene	0.017		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Naphthalene	0.19		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Phenanthrene	0.051		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Pyrene	0.035		0.0086	mg/Kg-dry	1	11/26/2015 06:27 AM
Surr: 2-Fluorobiphenyl	61.0		12-100	%REC	1	11/26/2015 06:27 AM
Surr: 4-Terphenyl-d14	65.0		25-137	%REC	1	11/26/2015 06:27 AM
Surr: Nitrobenzene-d5	47.8		37-107	%REC	1	11/26/2015 06:27 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 11/23/15 Analyst: <b>LSY</b>		
Benzene	ND		0.039	mg/Kg-dry	1	11/26/2015 06:51 AM
Ethylbenzene	0.18		0.039	mg/Kg-dry	1	11/26/2015 06:51 AM
m,p-Xylene	4.0		0.078	mg/Kg-dry	1	11/26/2015 06:51 AM
o-Xylene	0.60		0.039	mg/Kg-dry	1	11/26/2015 06:51 AM
Toluene	0.26		0.039	mg/Kg-dry	1	11/26/2015 06:51 AM
Xylenes, Total	4.6		0.12	mg/Kg-dry	1	11/26/2015 06:51 AM
Surr: 1,2-Dichloroethane-d4	91.8		70-130	%REC	1	11/26/2015 06:51 AM
Surr: 4-Bromofluorobenzene	121		70-130	%REC	1	11/26/2015 06:51 AM
Surr: Dibromofluoromethane	88.1		70-130	%REC	1	11/26/2015 06:51 AM
Surr: Toluene-d8	101		70-130	%REC	1	11/26/2015 06:51 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 11/25/15 Analyst: <b>JB</b>		
Electrical Conductivity @ Saturation	2.3		0.050	mmhos/cm @2	10	11/25/2015 10:15 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>	Analyst: <b>JJG</b>		
Chromium, Trivalent	31		0.65	mg/Kg-dry	1	12/1/2015 08:01 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 11/22/15 Analyst: <b>MB</b>		
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	11/23/2015 03:30 PM
<b>MOISTURE</b>			<b>E160.3M</b>	Analyst: <b>ED</b>		
Moisture	23		0.050	% of sample	1	11/25/2015 07:16 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 11/23/15 Analyst: <b>STP</b>		
pH	8.6			s.u.	1	11/23/2015 01:15 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group USA, Corp

Date: 02-Dec-15

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79443** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-79443-79443				Units: mg/Kg		Analysis Date: 11/25/2015 03:15 PM			
Client ID:		Run ID: GC8_151125A				SeqNo: 3591006		Prep Date: 11/25/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.801	0	2	0	90.1	39-133		0		

LCS				Sample ID: <b>DLCSS1-79443-79443</b>				Units: <b>mg/Kg</b>			Analysis Date: <b>11/25/2015 03:45 PM</b>			
Client ID:				Run ID: <b>GC8_151125A</b>				SeqNo: <b>3591007</b>			Prep Date: <b>11/25/2015</b>		DF: <b>1</b>	
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	202.1	5.0	200	0	101	61-109		0		
Surr: 4-Terphenyl-d14	1.386	0	2	0	69.3	39-133		0		

MS				Sample ID: 15111281-07B MS				Units: mg/Kg			Analysis Date: 11/25/2015 04:45 PM			
Client ID:				Run ID: GC8_151125A				SeqNo: 3591009			Prep Date: 11/25/2015		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				

DRO (C10-C28)	227.5	21	164.9	24.81	123	48-110		0		S
Surr: 4-Terphenyl-d14	1.877	0	1.649	0	114	39-133		0		

MSD				Sample ID: 15111281-07B MSD				Units: mg/Kg			Analysis Date: 11/25/2015 05:15 PM				
Client ID:				Run ID: GC8_151125A				SeqNo: 3591010			Prep Date: 11/25/2015			DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual					

DRO (C10-C28)	220.9	20	162.2	24.81	121	48-110	227.5	2.92	30	S
Surr: 4-Terphenyl-d14	1.521	0	1.622	0	93.8	39-133	1.877	20.9	30	

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

# QC BATCH REPORT

Batch ID: **79298** Instrument ID **GC9** Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-79298-79298</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/23/2015 06:09 PM</b>		
Client ID:		Run ID: <b>GC9_151123A</b>				SeqNo: <b>3586008</b>		Prep Date: <b>11/23/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4840	0	5000	0	96.8	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-79298-79298</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/23/2015 05:44 PM</b>		
Client ID:		Run ID: <b>GC9_151123A</b>				SeqNo: <b>3586006</b>		Prep Date: <b>11/23/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	494500	2,500	500000	0	98.9	70-130	0			
Surr: Toluene-d8	5340	0	5000	0	107	50-150	0			

<b>MS</b>		Sample ID: <b>15111270-06A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/23/2015 09:04 PM</b>		
Client ID:		Run ID: <b>GC9_151123A</b>				SeqNo: <b>3586026</b>		Prep Date: <b>11/23/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	734900	2,500	500000	0	147	70-130	0			S
Surr: Toluene-d8	6084	0	5000	0	122	50-150	0			

<b>MSD</b>		Sample ID: <b>15111270-06A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/23/2015 09:28 PM</b>		
Client ID:		Run ID: <b>GC9_151123A</b>				SeqNo: <b>3586029</b>		Prep Date: <b>11/23/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	710300	2,500	500000	0	142	70-130	734900	3.42	30	S
Surr: Toluene-d8	5993	0	5000	0	120	50-150	6084	1.52	30	

The following samples were analyzed in this batch:

15111272-01A	15111272-02A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79509** Instrument ID **HG1** Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-79509-79509</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/30/2015 02:49 A</b>		
Client ID:		Run ID: <b>HG1_151129A</b>				SeqNo: <b>3593967</b>		Prep Date: <b>11/29/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-79509-79509</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/30/2015 02:51 A</b>		
Client ID:		Run ID: <b>HG1_151129A</b>				SeqNo: <b>3593968</b>		Prep Date: <b>11/29/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1708 0.020 0.1665 0 103 80-120 0

<b>MS</b>		Sample ID: <b>15111322-01BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/30/2015 03:20 A</b>		
Client ID:		Run ID: <b>HG1_151129A</b>				SeqNo: <b>3593990</b>		Prep Date: <b>11/29/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1287 0.013 0.1109 0.02014 98 75-125 0

<b>MSD</b>		Sample ID: <b>15111322-01BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/30/2015 03:22 A</b>		
Client ID:		Run ID: <b>HG1_151129A</b>				SeqNo: <b>3593992</b>		Prep Date: <b>11/29/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1291 0.013 0.1066 0.02014 102 75-125 0.1287 0.302 35

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

# QC BATCH REPORT

Batch ID: **79333** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK				Sample ID: MBLK-79333-79333				Units: mg/Kg			Analysis Date: 11/25/2015 12:22 PM			
Client ID:				Run ID: ICP2_151125A				SeqNo: 3590090			Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Arsenic	ND	0.25												
Barium	ND	0.25												
Cadmium	ND	0.50												
Chromium	0.08303	0.25								J				
Copper	ND	0.50												
Lead	ND	0.25												
Nickel	ND	0.25												
Selenium	ND	0.50												
Silver	ND	0.25												
Zinc	ND	0.50												

LCS					Sample ID: LCS-79333-79333			Units: mg/Kg		Analysis Date: 11/25/2015 12:28 PM	
Client ID:			Run ID: ICP2_151125A			SeqNo: 3590096		Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	5.165	0.25	5	0	103	80-120	0				
Barium	5.113	0.25	5	0	102	80-120	0				
Cadmium	4.709	0.50	5	0	94.2	80-120	0				
Chromium	5.482	0.25	5	0	110	80-120	0				
Copper	5.1	0.50	5	0	102	80-120	0				
Lead	5.289	0.25	5	0	106	80-120	0				
Nickel	4.973	0.25	5	0	99.5	80-120	0				
Selenium	5.442	0.50	5	0	109	80-120	0				
Silver	5.104	0.25	5	0	102	80-120	0				
Zinc	5.39	0.50	5	0	108	80-120	0				

MS				Sample ID: 15111272-02BMS			Units: mg/Kg		Analysis Date: 11/25/2015 12:56 PM		
Client ID: Spoil			Run ID: ICP2_151125A		SeqNo: 3590102		Prep Date: 11/23/2015		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	20.1	0.35	7.092	18.72	19.4	75-125	0			S	
Barium	495.4	0.35	7.092	491.9	49.2	75-125	0			SO	
Cadmium	7.129	0.71	7.092	0.2573	96.9	75-125	0				
Chromium	33.48	0.35	7.092	24.06	133	75-125	0			S	
Copper	25.92	0.71	7.092	18.05	111	75-125	0				
Lead	20.81	0.35	7.092	14.14	94.1	75-125	0				
Nickel	27.37	0.35	7.092	19.58	110	75-125	0				
Selenium	9.245	0.71	7.092	1.154	114	75-125	0				
Silver	7.719	0.35	7.092	0.1011	107	75-125	0				
Zinc	82.64	0.71	7.092	69.91	179	75-125	0			SO	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79333**

Instrument ID **ICP2**

Method: **SW846 6010C**

MSD				Sample ID: 15111272-02BMSD			Units: mg/Kg		Analysis Date: 11/25/2015 01:02 PM		
Client ID: Spoil				Run ID: ICP2_151125A			SeqNo: 3590107		Prep Date: 11/23/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	21.97	0.36	7.102	18.72	45.7	75-125	20.1	8.89	20	S	
Barium	466.2	0.36	7.102	491.9	-362	75-125	495.4	6.08	20	SO	
Cadmium	7.12	0.71	7.102	0.2573	96.6	75-125	7.129	0.132	20		
Chromium	33.71	0.36	7.102	24.06	136	75-125	33.48	0.685	20	S	
Copper	25.9	0.71	7.102	18.05	110	75-125	25.92	0.0837	20		
Lead	21.53	0.36	7.102	14.14	104	75-125	20.81	3.37	20		
Nickel	27.51	0.36	7.102	19.58	112	75-125	27.37	0.527	20		
Selenium	9.21	0.71	7.102	1.154	113	75-125	9.245	0.385	20		
Zinc	82.94	0.71	7.102	69.91	183	75-125	82.64	0.364	20	SO	

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79334**      Instrument ID **ICP2**      Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>15111247-02ADUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>11/30/2015 01:47 PM</b>		
Client ID:		Run ID: <b>ICP2_151130A</b>				SeqNo: <b>3595468</b>		Prep Date: <b>11/25/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	161.5	5.0	0	0	0	0-0	133.2	19.2		
Magnesium	123.1	2.0	0	0	0	0-0	98.86	21.9		
Sodium	223.7	2.0	0	0	0	0-0	192.3	15.1		

<b>DUP</b>		Sample ID: <b>15111247-02ADUP</b>				Units: <b>none</b>		Analysis Date: <b>11/30/2015</b>		
Client ID:		Run ID: <b>SAR_151130A</b>				SeqNo: <b>3595492</b>		Prep Date: <b>11/25/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Exchangeable Sodium Percentage	3.381	0.010	0	0	0		3.175	6.3	50	
Sodium Adsorption Ratio	3.227	0.010	0	0	0		3.077	4.75	50	

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79442**      Instrument ID **SVMS8**      Method: **SW846 8270D**

<b>MBLK</b>		Sample ID: <b>SBLKS1-79442-79442</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/25/2015 01:10 PM</b>		
Client ID:		Run ID: <b>SVMS8_151125A</b>				SeqNo: <b>3595379</b>		Prep Date: <b>11/25/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	ND	6.7								
2-Methylnaphthalene	ND	6.7								
Acenaphthene	ND	6.7								
Acenaphthylene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Phenanthrene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	<i>1731</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>104</i>	<i>12-100</i>	<i>0</i>			<i>S</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>1962</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>118</i>	<i>25-137</i>	<i>0</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>1587</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>95.2</i>	<i>37-107</i>	<i>0</i>			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

# QC BATCH REPORT

Batch ID: **79442**      Instrument ID **SVMS8**      Method: **SW846 8270D**

LCS		Sample ID: <b>SLCSS1-79442-79442</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>11/25/2015 01:49 PM</b>		
Client ID:		Run ID: <b>SVMS8_151125A</b>				SeqNo: <b>3595422</b>		Prep Date: <b>11/25/2015</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	580.7	6.7	666.7	0	87.1	45-105	0			
2-Methylnaphthalene	511.7	6.7	666.7	0	76.7	45-105	0			
Acenaphthene	543.7	6.7	666.7	0	81.5	45-110	0			
Acenaphthylene	612	6.7	666.7	0	91.8	45-105	0			
Anthracene	601.7	6.7	666.7	0	90.2	55-105	0			
Benzo(a)anthracene	592.7	6.7	666.7	0	88.9	50-110	0			
Benzo(a)pyrene	600.3	6.7	666.7	0	90	50-110	0			
Benzo(b)fluoranthene	592.3	6.7	666.7	0	88.8	45-115	0			
Benzo(g,h,i)perylene	783.3	6.7	666.7	0	117	40-125	0			
Benzo(k)fluoranthene	618.3	6.7	666.7	0	92.7	45-115	0			
Chrysene	645.7	6.7	666.7	0	96.8	55-110	0			
Dibenzo(a,h)anthracene	741.7	6.7	666.7	0	111	40-125	0			
Fluoranthene	536.3	6.7	666.7	0	80.4	55-115	0			
Fluorene	551	6.7	666.7	0	82.6	50-110	0			
Indeno(1,2,3-cd)pyrene	761	6.7	666.7	0	114	40-120	0			
Naphthalene	535	6.7	666.7	0	80.2	40-105	0			
Phenanthrene	622	6.7	666.7	0	93.3	50-110	0			
Pyrene	700.7	6.7	666.7	0	105	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	<i>1652</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>99.1</i>	<i>12-100</i>	<i>0</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>1712</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>103</i>	<i>25-137</i>	<i>0</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>1562</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>93.7</i>	<i>37-107</i>	<i>0</i>			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79442**      Instrument ID **SVMS8**      Method: **SW846 8270D**

MS				Sample ID: 15111165-03A MS			Units: µg/Kg		Analysis Date: 11/25/2015 08:01 PM	
Client ID:				Run ID: SVMS4_151125A			SeqNo: 3595233		Prep Date: 11/25/2015	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	430	6.5	651.5	0	66	45-105	0			
2-Methylnaphthalene	364.5	6.5	651.5	0	55.9	45-105	0			
Acenaphthene	426.7	6.5	651.5	0	65.5	45-110	0			
Acenaphthylene	465.5	6.5	651.5	0	71.4	45-105	0			
Anthracene	514	6.5	651.5	0	78.9	55-105	0			
Benzo(a)anthracene	528.3	6.5	651.5	3.604	80.5	50-110	0			
Benzo(a)pyrene	516	6.5	651.5	0	79.2	50-110	0			
Benzo(b)fluoranthene	543.3	6.5	651.5	0	83.4	45-115	0			
Benzo(g,h,i)perylene	492.5	6.5	651.5	0	75.6	40-125	0			
Benzo(k)fluoranthene	554.4	6.5	651.5	0	85.1	45-115	0			
Chrysene	531.6	6.5	651.5	2.293	81.2	55-110	0			
Dibenzo(a,h)anthracene	470.4	6.5	651.5	0	72.2	40-125	0			
Fluoranthene	461.2	6.5	651.5	3.604	70.2	55-115	0			
Fluorene	468.7	6.5	651.5	0	71.9	50-110	0			
Indeno(1,2,3-cd)pyrene	468.4	6.5	651.5	0	71.9	40-120	0			
Naphthalene	357.7	6.5	651.5	0	54.9	40-105	0			
Phenanthrene	501.3	6.5	651.5	3.276	76.4	50-110	0			
Pyrene	649.8	6.5	651.5	3.276	99.2	45-125	0			
Surr: 2-Fluorobiphenyl	1071	0	1629	0	65.7	12-100	0			
Surr: 4-Terphenyl-d14	1566	0	1629	0	96.2	25-137	0			
Surr: Nitrobenzene-d5	922.8	0	1629	0	56.7	37-107	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79442** Instrument ID **SVMS8** Method: **SW846 8270D**

MSD				Sample ID: 15111165-03A MSD				Units: µg/Kg		Analysis Date: 11/25/2015 08:28 PM	
Client ID:			Run ID: SVMS4_151125A			SeqNo: 3595234		Prep Date: 11/25/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
2-Chloronaphthalene	495.5	6.6	655	0	75.6	45-105	430	14.2	30		
2-Methylnaphthalene	469.3	6.6	655	0	71.6	45-105	364.5	25.1	30		
Acenaphthene	502	6.6	655	0	76.6	45-110	426.7	16.2	30		
Acenaphthylene	524.6	6.6	655	0	80.1	45-105	465.5	11.9	30		
Anthracene	553.1	6.6	655	0	84.4	55-105	514	7.33	30		
Benzo(a)anthracene	571.5	6.6	655	3.604	86.7	50-110	528.3	7.84	30		
Benzo(a)pyrene	572.1	6.6	655	0	87.3	50-110	516	10.3	30		
Benzo(b)fluoranthene	586.2	6.6	655	0	89.5	45-115	543.3	7.59	30		
Benzo(g,h,i)perylene	515.8	6.6	655	0	78.7	40-125	492.5	4.62	30		
Benzo(k)fluoranthene	641.5	6.6	655	0	97.9	45-115	554.4	14.6	30		
Chrysene	571.5	6.6	655	2.293	86.9	55-110	531.6	7.23	30		
Dibenzo(a,h)anthracene	491.6	6.6	655	0	75	40-125	470.4	4.41	30		
Fluoranthene	530.8	6.6	655	3.604	80.5	55-115	461.2	14	30		
Fluorene	534.5	6.6	655	0	81.6	50-110	468.7	13.1	30		
Indeno(1,2,3-cd)pyrene	490.6	6.6	655	0	74.9	40-120	468.4	4.62	30		
Naphthalene	447.7	6.6	655	0	68.3	40-105	357.7	22.4	30		
Phenanthrene	542.6	6.6	655	3.276	82.3	50-110	501.3	7.92	30		
Pyrene	650.7	6.6	655	3.276	98.8	45-125	649.8	0.134	30		
Surr: 2-Fluorobiphenyl	1255	0	1637	0	76.7	12-100	1071	15.9	40		
Surr: 4-Terphenyl-d14	1598	0	1637	0	97.6	25-137	1566	2	40		
Surr: Nitrobenzene-d5	1189	0	1637	0	72.6	37-107	922.8	25.2	40		

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

# QC BATCH REPORT

Batch ID: **79300** Instrument ID **VMS5** Method: **SW8260B**

MBLK				Sample ID: MBLK-79300-79300				Units: µg/Kg			Analysis Date: 11/23/2015 11:52 A			
Client ID:				Run ID: VMS5_151123A				SeqNo: 3585333			Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Benzene	ND	30												
Ethylbenzene	ND	30												
m,p-Xylene	ND	60												
o-Xylene	ND	30												
Toluene	ND	30												
Xylenes, Total	ND	90												
Surr: 1,2-Dichloroethane-d4	1018	0	1000	0	102	70-130		0						
Surr: 4-Bromofluorobenzene	974	0	1000	0	97.4	70-130		0						
Surr: Dibromofluoromethane	976	0	1000	0	97.6	70-130		0						
Surr: Toluene-d8	986.5	0	1000	0	98.6	70-130		0						

LCS				Sample ID: LCS-79300-79300			Units: µg/Kg		Analysis Date: 11/23/2015 10:34 A		
Client ID:			Run ID: VMS5_151123A			SeqNo: 3585332		Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1030	30	1000	0	103	75-125	0				
Ethylbenzene	988.5	30	1000	0	98.8	75-125	0				
m,p-Xylene	1983	60	2000	0	99.2	80-125	0				
o-Xylene	977	30	1000	0	97.7	75-125	0				
Toluene	1022	30	1000	0	102	70-125	0				
Xylenes, Total	2960	90	3000	0	98.7	75-125	0				
Surr: 1,2-Dichloroethane-d4	996.5	0	1000	0	99.6	70-130	0				
Surr: 4-Bromofluorobenzene	1008	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	1006	0	1000	0	101	70-130	0				
Surr: Toluene-d8	995	0	1000	0	99.5	70-130	0				

MS				Sample ID: 15111203-02A MS			Units: µg/Kg		Analysis Date: 11/23/2015 07:40 PM		
Client ID:			Run ID: VMS5_151123A			SeqNo: 3585358		Prep Date: 11/23/2015		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	5580	150	5000	0	112	75-125	0				
Ethylbenzene	5512	150	5000	169	107	75-125	0				
m,p-Xylene	11150	300	10000	395	108	80-125	0				
o-Xylene	5332	150	5000	140	104	75-125	0				
Toluene	5565	150	5000	0	111	70-125	0				
Xylenes, Total	16480	450	15000	540	106	75-125	0				
Surr: 1,2-Dichloroethane-d4	4988	0	5000	0	99.8	70-130	0				
Surr: 4-Bromofluorobenzene	4910	0	5000	0	98.2	70-130	0				
Surr: Dibromofluoromethane	4910	0	5000	0	98.2	70-130	0				
Surr: Toluene-d8	4945	0	5000	0	98.9	70-130	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79300** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 15111203-02A MSD			Units: µg/Kg		Analysis Date: 11/23/2015 08:06 PM	
Client ID:			Run ID: VMS5_151123A			SeqNo: 3585361		Prep Date: 11/23/2015		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	5825	150	5000	0	116	75-125	5580	4.3	30	
Ethylbenzene	5772	150	5000	169	112	75-125	5512	4.61	30	
m,p-Xylene	11550	300	10000	395	112	80-125	11150	3.52	30	
o-Xylene	5575	150	5000	140	109	75-125	5332	4.45	30	
Toluene	5745	150	5000	0	115	70-125	5565	3.18	30	
Xylenes, Total	17130	450	15000	540	111	75-125	16480	3.82	30	
Surr: 1,2-Dichloroethane-d4	4990	0	5000	0	99.8	70-130	4988	0.0501	30	
Surr: 4-Bromofluorobenzene	4958	0	5000	0	99.2	70-130	4910	0.963	30	
Surr: Dibromofluoromethane	4990	0	5000	0	99.8	70-130	4910	1.62	30	
Surr: Toluene-d8	4900	0	5000	0	98	70-130	4945	0.914	30	

The following samples were analyzed in this batch:

15111272-01A	15111272-02A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79305** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-79305-79305				Units: s.u.			Analysis Date: 11/23/2015 01:15 PM			
Client ID:				Run ID: WETCHEM_151123E				SeqNo: 3583580			Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH	4	0	4	0	100	90-110	0							

DUP				Sample ID: 15111225-01A DUP				Units: s.u.		Analysis Date: 11/23/2015 01:15 PM			
Client ID:				Run ID: WETCHEM_151123E				SeqNo: 3583584		Prep Date: 11/23/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH	9.02	0	0	0	0	0-0	9.33	3.38	20	H			

DUP				Sample ID: 15111272-01B DUP				Units: s.u.		Analysis Date: 11/23/2015 01:15 PM		
Client ID: Low Spot				Run ID: WETCHEM_151123E				SeqNo: 3583593		Prep Date: 11/23/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH	8.23	0	0	0	0	0-0	8.2	0.365	20			

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Oxy USA WTP LP  
**Work Order:** 15111272  
**Project:** 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79334** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>15111247-02A DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>11/25/2015 10:15 A</b>		
Client ID:		Run ID: <b>WETCHEM_151125C</b>				SeqNo: <b>3588880</b>		Prep Date: <b>11/25/2015</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	3.47	0.050	0	0	0		2.88	18.6	50	

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **79353** Instrument ID **WETCHEM** Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-79353-79353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/23/2015 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_151123Q</b>		SeqNo: <b>3584531</b>		Prep Date: <b>11/22/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.36	1.0								J

<b>LCS</b>		Sample ID: <b>LCS-79353-79353</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/23/2015 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_151123Q</b>		SeqNo: <b>3584530</b>		Prep Date: <b>11/22/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	5.04	1.0	5	0	101	80-120	0			

<b>MS</b>		Sample ID: <b>15111215-01A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/23/2015 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_151123Q</b>		SeqNo: <b>3584520</b>		Prep Date: <b>11/22/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2.157	0.93	4.63	0	46.6	75-125	0			S

<b>MS</b>		Sample ID: <b>15111215-01A MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/23/2015 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_151123Q</b>		SeqNo: <b>3584522</b>		Prep Date: <b>11/22/2015</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	2634	93	2920	0	90.2	75-125	0			

<b>MSD</b>		Sample ID: <b>15111215-01A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>11/23/2015 03:30 PM</b>		
Client ID:		Run ID: <b>WETCHEM_151123Q</b>		SeqNo: <b>3584521</b>		Prep Date: <b>11/22/2015</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.885	0.96	4.808	0	39.2	75-125	2634	200	20	SR

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
--------------	--------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: Oxy USA WTP LP  
 Work Order: 15111272  
 Project: 697-16-28 Spill

## QC BATCH REPORT

Batch ID: **R177144** Instrument ID **MOIST** Method: **E160.3M**

<b>MBLK</b>		Sample ID: <b>WBLKS-R177144</b>				Units: % of sample		Analysis Date: <b>11/25/2015 07:16 PM</b>		
Client ID:		Run ID: <b>MOIST_151125C</b>			SeqNo: <b>3592819</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R177144				Units: % of sample			Analysis Date: 11/25/2015 07:16 PM		
Client ID:			Run ID: MOIST_151125C			SeqNo: 3592818		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

<b>DUP</b>		Sample ID: <b>15111219-37A DUP</b>				Units: % of sample		Analysis Date: <b>11/25/2015 07:16 PM</b>		
Client ID:		Run ID: <b>MOIST_151125C</b>			SeqNo: <b>3592807</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 75.91 0.050 0 0 0 74.83 1.43 20

DUP		Sample ID: 15111219-16A DUP					Units: % of sample		Analysis Date: 11/25/2015 07:16 PM		
Client ID:			Run ID: MOIST_151125C			SeqNo: 3592817		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 89.98 0.050 0 0 0 89.93 0.0556 20

The following samples were analyzed in this batch:

15111272-01B	15111272-02B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.



☐ ALS Environmental  
10450 Stanciliff Rd. #210  
Houston, Texas 77099  
(Tel) 281.530.5656  
(Fax) 281.530.5887

## Chain of Custody Form

Page 1 of 1

☒ ALS Environmental  
3352 128th Avenue  
Holland, Michigan 49424  
(Tel) 616.399.6070  
(Fax) 616.399.6185

Customer Information			Project Information				Parameter/Method Request for Analysis											
Purchase Order		Project Name	697-16-28 Spill		A	COGCC Table 910-1 soil												
Work Order		Project Number			B													
Company Name	OXY USA WTP LP	Bill To Company	OXY USA WTP LP		C													
Send Report To	Blair Rollins	Invoice Attn.			D													
Address	760 Horizon Drive, suite 101	Address	760 Horizon Drive, suite 101		E													
					F													
City/State/Zip	Grand Junction Co. 81506	City/State/Zip	Grand Junction Co. 81506		G													
Phone	970-263-3637	Phone	970-263-3637		H													
Fax		Fax			I													
e-Mail Address	blair_rollins@oxy.com				J													
No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	Low spot	11/20/2015	830	Soil		3	XX											
2	Spill	11/20/2015	900	Soil		3	XX											
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Sampler(s): Please Print & Sign Blair K Rollins <i>[Signature]</i>		Shipment Method: ALS Courier	Required Turnaround Time: (Check Box) <input type="checkbox"/> 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 3 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:		
Relinquished by: <i>[Signature]</i>	Date: 11/20/15	Time: 1300	Received by: <i>[Signature]</i>	Date: 11/20/15	Time: 1300	Notes:			
Relinquished by: <i>[Signature]</i>	Date: 11/20/15	Time: 1420	Received by (Laboratory): <i>[Signature]</i>	Date: 11/21/15	Time: 1000	ALS Cooler ID	Cooler Temp	QC Package: (Check Box Below)	
Logged by (Laboratory): Kew		Date: 11/21/15	Time: 1115	Checked by (Laboratory): <i>[Signature]</i>			4.22	<input checked="" type="checkbox"/> Level II: Standard QC	<input type="checkbox"/> Level III: Raw Data
								<input type="checkbox"/> TRRP LRC	<input type="checkbox"/> TRRP Level IV
								<input type="checkbox"/> Level IV: SW846 Methods/CLP like	
								<input type="checkbox"/> Other:	

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

Sample Receipt Checklist

Client Name: **OXYUSA - CO**

Date/Time Received: **21-Nov-15 10:00**

Work Order: **15111272**

Received by: **KRW**

Checklist completed by Keith Wurenga  
eSignature

21-Nov-15  
Date

Reviewed by: Chad Whelton  
eSignature

23-Nov-15  
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on 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?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>11/21/2015 11:14:42 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: