



01/15/13

## Technical Report for

**Olsson Associates**

**Oxy CWHF Monitoring Wells**

**PO# 012-0441**

**Accutest Job Number: D33952**

**Sampling Date: 04/25/12**

### Report to:

**Olsson Associates**

**shall@oaconsulting.com**

**ATTN: Stuart Hall**

**Total number of pages in report: 26**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
**Brad Madadian**  
**Laboratory Director**

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Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

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## Sample Summary

Olsson Associates

Job No: D33952

Oxy CWHF Monitoring Wells  
Project No: PO# 012-0441

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D33952-1	04/25/12	15:00 JV	04/26/12	AQ	Ground Water	MW-1
D33952-1F	04/25/12	15:00 JV	04/26/12	AQ	Groundwater Filtered	MW-1
D33952-2	04/25/12	15:45 JV	04/26/12	AQ	Ground Water	MW-2
D33952-2F	04/25/12	15:45 JV	04/26/12	AQ	Groundwater Filtered	MW-2
D33952-3	04/25/12	16:30 JV	04/26/12	AQ	Ground Water	MW-3
D33952-3F	04/25/12	16:30 JV	04/26/12	AQ	Groundwater Filtered	MW-3



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Olsson Associates

**Job No** D33952

**Site:** Oxy CWHF Monitoring Wells

**Report Date** 5/1/2012 4:38:41 PM

On 04/26/2012, 3 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.6 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D33952 was assigned to the project. The lab sample IDs, client sample IDs, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GC By Method SW846 8015B

**Matrix** AQ

**Batch ID:** GGA897

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33957-8MS, D33957-8MSD were used as the QC samples indicated.

### Volatiles by GC By Method SW846 8021B

**Matrix** AQ

**Batch ID:** GTA897

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33957-8MS, D33957-8MSD were used as the QC samples indicated.

### Extractables by GC By Method SW846-8015B

**Matrix** AQ

**Batch ID:** OP5782

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33862-8MS, D33862-8MSD were used as the QC samples indicated.

### Metals By Method EPA 200.7

**Matrix** AQ

**Batch ID:** MP7368

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33974-2MS, D33974-2MSD were used as the QC samples for the metals analysis.

### Metals By Method EPA 200.8

**Matrix** AQ

**Batch ID:** MP7367

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33984-1MS, D33984-1MSD were used as the QC samples for the metals analysis.

## Wet Chemistry By Method EPA 300/SW846 9056

**Matrix** AQ

**Batch ID:** GP7065

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33772-17DUP, D33952-2MS, D33952-2MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- All samples for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D33952-1 for Bromide: Elevated detection limit due to matrix interference.

## Wet Chemistry By Method SM20 2320B

**Matrix** AQ

**Batch ID:** GN14699

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33878-1ADUP, D33878-1AMS, D33878-1AMSD were used as the QC samples for the Alkalinity, Total as CaCO<sub>3</sub> analysis.

## Wet Chemistry By Method SM20 2510B

**Matrix** AQ

**Batch ID:** GP7079

- Sample(s) D33952-1DUP were used as the QC samples for the Specific Conductivity analysis.

## Wet Chemistry By Method SM20 2540C

**Matrix** AQ

**Batch ID:** GN14694

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33878-1ADUP were used as the QC samples for the Solids, Total Dissolved analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Summary of Hits

Page 1 of 2

Job Number: D33952  
Account: Olsson Associates  
Project: Oxy CWHF Monitoring Wells  
Collected: 04/25/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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### D33952-1 MW-1

TPH-DRO (C10-C28)	0.591	0.38	0.25	mg/l	SW846-8015B
Alkalinity, Total as CaCO <sub>3</sub>	414	5.0		mg/l	SM20 2320B
Chloride	52.5	1.0		mg/l	EPA 300/SW846 9056
Fluoride	0.73	0.20		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	0.74	0.23		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved	652	10		mg/l	SM20 2540C
Specific Conductivity	879	1.0		umhos/cm	SM20 2510B
Sulfate	89.2	2.5		mg/l	EPA 300/SW846 9056
pH	7.66			su	SM20 4500H

### D33952-1F MW-1

Calcium	73800	400		ug/l	EPA 200.7
Iron	29.5	10		ug/l	EPA 200.7
Magnesium	45700	200		ug/l	EPA 200.7
Manganese	43.1	5.0		ug/l	EPA 200.7
Potassium	3010	1000		ug/l	EPA 200.7
Selenium	2.5	0.80		ug/l	EPA 200.8
Sodium	104000	400		ug/l	EPA 200.7

### D33952-2 MW-2

Alkalinity, Total as CaCO <sub>3</sub>	340	5.0		mg/l	SM20 2320B
Bromide	0.37	0.20		mg/l	EPA 300/SW846 9056
Chloride	68.9	2.5		mg/l	EPA 300/SW846 9056
Fluoride	0.53	0.10		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	1.8	0.23		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved	666	10		mg/l	SM20 2540C
Specific Conductivity	872	1.0		umhos/cm	SM20 2510B
Sulfate	130	2.5		mg/l	EPA 300/SW846 9056
pH	7.46			su	SM20 4500H

### D33952-2F MW-2

Calcium	84700	400		ug/l	EPA 200.7
Magnesium	49100	200		ug/l	EPA 200.7
Potassium	2800	1000		ug/l	EPA 200.7
Selenium	3.7	0.80		ug/l	EPA 200.8
Sodium	69700	400		ug/l	EPA 200.7

### D33952-3 MW-3

Alkalinity, Total as CaCO <sub>3</sub>	361	5.0		mg/l	SM20 2320B
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## Summary of Hits

Page 2 of 2

Job Number: D33952  
Account: Olsson Associates  
Project: Oxy CWHF Monitoring Wells  
Collected: 04/25/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						
Bromide		0.53	0.20		mg/l	EPA 300/SW846 9056
Chloride		93.7	2.5		mg/l	EPA 300/SW846 9056
Fluoride		0.52	0.10		mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		1.8	0.23		mg/l	EPA 300/SW846 9056
Solids, Total Dissolved		760	10		mg/l	SM20 2540C
Specific Conductivity		1010	1.0		umhos/cm	SM20 2510B
Sulfate		143	2.5		mg/l	EPA 300/SW846 9056
pH		7.44			su	SM20 4500H
D33952-3F	MW-3					
Calcium		93600	400		ug/l	EPA 200.7
Iron		15.2	10		ug/l	EPA 200.7
Magnesium		57300	200		ug/l	EPA 200.7
Potassium		2990	1000		ug/l	EPA 200.7
Selenium		4.4	0.80		ug/l	EPA 200.8
Sodium		77200	400		ug/l	EPA 200.7

## Sample Results

## Report of Analysis



## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1	Date Sampled:	04/25/12
Lab Sample ID:	D33952-1	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA15847.D	1	04/27/12	SK	n/a	n/a	GGA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	84%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	MW-1	Date Sampled:	04/25/12
Lab Sample ID:	D33952-1	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA15847.D	1	04/27/12	SK	n/a	n/a	GTA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	85%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1	Date Sampled:	04/25/12
Lab Sample ID:	D33952-1	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH003800.D	1	04/30/12	AV	04/26/12	OP5782	GFH206
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.591	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	102%		25-146%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1	Date Sampled:	04/25/12
Lab Sample ID:	D33952-1	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO <sub>3</sub>	414	5.0	mg/l	1	04/26/12	CJ	SM20 2320B
Bromide <sup>a</sup>	< 0.40	0.40	mg/l	2	04/26/12 11:46	JML	EPA 300/SW846 9056
Chloride	52.5	1.0	mg/l	2	04/26/12 11:46	JML	EPA 300/SW846 9056
Fluoride	0.73	0.20	mg/l	2	04/26/12 11:46	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	0.74	0.23	mg/l	5	04/26/12 14:30	JML	EPA 300/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.020	0.020	mg/l	2	04/26/12 11:46	JML	EPA 300/SW846 9056
Solids, Total Dissolved	652	10	mg/l	1	04/26/12	JK	SM20 2540C
Specific Conductivity	879	1.0	umhos/cm	1	04/30/12	CJ	SM20 2510B
Sulfate	89.2	2.5	mg/l	5	04/26/12 14:30	JML	EPA 300/SW846 9056
pH	7.66		su	1	04/26/12 15:00	CJ	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-1	Date Sampled:	04/25/12
Lab Sample ID:	D33952-1F	Date Received:	04/26/12
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	73800	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Iron	29.5	10	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Magnesium	45700	200	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Manganese	43.1	5.0	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Potassium	3010	1000	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Selenium	2.5	0.80	ug/l	2	04/27/12	04/30/12 GJ	EPA 200.8 <sup>2</sup>	EPA 200.8 <sup>3</sup>
Sodium	104000	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>

(1) Instrument QC Batch: MA2372

(2) Instrument QC Batch: MA2378

(3) Prep QC Batch: MP7367

(4) Prep QC Batch: MP7368

RL = Reporting Limit

## Report of Analysis

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Client Sample ID:	MW-2	Date Sampled:	04/25/12
Lab Sample ID:	D33952-2	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA15848.D	1	04/27/12	SK	n/a	n/a	GGA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	78%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	MW-2	Date Sampled:	04/25/12
Lab Sample ID:	D33952-2	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA15848.D	1	04/27/12	SK	n/a	n/a	GTA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	80%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-2	Date Sampled:	04/25/12
Lab Sample ID:	D33952-2	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH003802.D	1	04/30/12	AV	04/26/12	OP5782	GFH206
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	103%		25-146%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

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Client Sample ID:	MW-2	Date Sampled:	04/25/12
Lab Sample ID:	D33952-2	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO <sub>3</sub>	340	5.0	mg/l	1	04/26/12	CJ	SM20 2320B
Bromide	0.37	0.20	mg/l	1	04/26/12 12:01	JML	EPA 300/SW846 9056
Chloride	68.9	2.5	mg/l	5	04/26/12 14:00	JML	EPA 300/SW846 9056
Fluoride	0.53	0.10	mg/l	1	04/26/12 12:01	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	1.8	0.23	mg/l	5	04/26/12 14:00	JML	EPA 300/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.050	0.050	mg/l	5	04/26/12 14:00	JML	EPA 300/SW846 9056
Solids, Total Dissolved	666	10	mg/l	1	04/26/12	JK	SM20 2540C
Specific Conductivity	872	1.0	umhos/cm	1	04/30/12	CJ	SM20 2510B
Sulfate	130	2.5	mg/l	5	04/26/12 14:00	JML	EPA 300/SW846 9056
pH	7.46		su	1	04/26/12 15:00	CJ	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-2	Date Sampled:	04/25/12
Lab Sample ID:	D33952-2F	Date Received:	04/26/12
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	84700	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Iron	< 10	10	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Magnesium	49100	200	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Manganese	< 5.0	5.0	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Potassium	2800	1000	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Selenium	3.7	0.80	ug/l	2	04/27/12	04/30/12 GJ	EPA 200.8 <sup>2</sup>	EPA 200.8 <sup>3</sup>
Sodium	69700	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>

(1) Instrument QC Batch: MA2372

(2) Instrument QC Batch: MA2378

(3) Prep QC Batch: MP7367

(4) Prep QC Batch: MP7368

RL = Reporting Limit

## Report of Analysis

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Client Sample ID:	MW-3	Date Sampled:	04/25/12
Lab Sample ID:	D33952-3	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA15849.D	1	04/27/12	SK	n/a	n/a	GGA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	76%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3	Date Sampled:	04/25/12
Lab Sample ID:	D33952-3	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA15849.D	1	04/27/12	SK	n/a	n/a	GTA897
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	78%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3	Date Sampled:	04/25/12
Lab Sample ID:	D33952-3	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	Oxy CWHF Monitoring Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH003804.D	1	04/30/12	AV	04/26/12	OP5782	GFH206
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	98%		25-146%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3	Date Sampled:	04/25/12
Lab Sample ID:	D33952-3	Date Received:	04/26/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO <sub>3</sub>	361	5.0	mg/l	1	04/26/12	CJ	SM20 2320B
Bromide	0.53	0.20	mg/l	1	04/26/12 12:16	JML	EPA 300/SW846 9056
Chloride	93.7	2.5	mg/l	5	04/26/12 14:45	JML	EPA 300/SW846 9056
Fluoride	0.52	0.10	mg/l	1	04/26/12 12:16	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	1.8	0.23	mg/l	5	04/26/12 14:45	JML	EPA 300/SW846 9056
Nitrogen, Nitrite <sup>a</sup>	< 0.050	0.050	mg/l	5	04/26/12 14:45	JML	EPA 300/SW846 9056
Solids, Total Dissolved	760	10	mg/l	1	04/26/12	JK	SM20 2540C
Specific Conductivity	1010	1.0	umhos/cm	1	04/30/12	CJ	SM20 2510B
Sulfate	143	2.5	mg/l	5	04/26/12 14:45	JML	EPA 300/SW846 9056
pH	7.44		su	1	04/26/12 15:00	CJ	SM20 4500H

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

## Report of Analysis

Page 1 of 1

Client Sample ID:	MW-3	Date Sampled:	04/25/12
Lab Sample ID:	D33952-3F	Date Received:	04/26/12
Matrix:	AQ - Groundwater Filtered	Percent Solids:	n/a
Project:	Oxy CWHF Monitoring Wells		

## Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	93600	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Iron	15.2	10	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Magnesium	57300	200	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Manganese	< 5.0	5.0	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Potassium	2990	1000	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>
Selenium	4.4	0.80	ug/l	2	04/27/12	04/30/12 GJ	EPA 200.8 <sup>2</sup>	EPA 200.8 <sup>3</sup>
Sodium	77200	400	ug/l	1	04/27/12	04/27/12 JB	EPA 200.7 <sup>1</sup>	EPA 200.7 <sup>4</sup>

(1) Instrument QC Batch: MA2372

(2) Instrument QC Batch: MA2378

(3) Prep QC Batch: MP7367

(4) Prep QC Batch: MP7368

RL = Reporting Limit

## Misc. Forms

5

### Custody Documents and Other Forms

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**Includes the following where applicable:**

- Chain of Custody





PED-EX Tracking #	Bottle Order Control #
Accutest Quote #	RR-12/20/2011-7
JM12/2011-131	033952

[illegible]

## 3 DAY RUSH

**Dissolved Metals-** Please lab filter

Turnaround Time ( Business days)		Data Deliverable Information		Comments / Remarks	
<input checked="" type="checkbox"/> 10 Day STANDARD	Approved By/ Date:	<input type="checkbox"/> Commercial "A"	<input type="checkbox"/> TRRP-13		
<input type="checkbox"/> 7 Day (per contract)		<input checked="" type="checkbox"/> Commercial "B"	<input type="checkbox"/> EDD Format _____	<b>AMS FEDEX Account Number - 467721860</b>	
<input type="checkbox"/> 4 Day RUSH		<input type="checkbox"/> Reduced Tier 1	<input type="checkbox"/> Other _____		
<input checked="" type="checkbox"/> 3 Day EMERGENCY		<input type="checkbox"/> Full Data Package			
<input type="checkbox"/> 2 Day EMERGENCY					
<input type="checkbox"/> 1 Day EMERGENCY		Commercial "A" = Results Only			
<input type="checkbox"/> Other _____		Commercial "B" = Results & Standard QC			
<b>Real time analytical data available via LabLink</b>					
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY					
Received By: <i>[Signature]</i>		Relinquished By: <i>[Signature]</i>		Date Time:	
Date/Time: <i>4/25/16 1030</i>		Date Time:		Received By: <i>2</i>	
Relinquished by: <i>[Signature]</i>		Relinquished By: <i>[Signature]</i>		Date Time:	
Date/Time: <i>4/25/16 1030</i>		Date Time:		Received By: <i>4</i>	
Relinquished by: <i>[Signature]</i>		Received By: <i>[Signature]</i>		Custody Seal # <i>[Blank]</i>	
Date/Time: <i>4/25/16 1030</i>		Cooler Temp. <i>3.6</i>		On Ice <i>[Blank]</i>	

Page 1 of 2

# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D33952

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 4/26/2012 10:30:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: OXY CWWHF MONITORING WELL

Airbill #'s: Fedex

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

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