



Jim Harris  
Utah Division of Water Quality  
PO Box 144870  
SLC, UT 84114  
TEL: (801) 538-6329

Dear Jim Harris:

Lab Set ID: 1405519

463 West 3600 South  
Salt Lake City, UT 84115

American West Analytical Laboratories received 2 sample(s) on 5/27/2014 for the analyses presented in the following report.

Phone: (801) 263-8686  
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e-mail: awal@awal-labs.com  
web: www.awal-labs.com

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by: \_\_\_\_\_  
Laboratory Director or designee







# ORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality      **Contact:** Jim Harris  
**Project:**  
**Lab Sample ID:** 1405519-002A  
**Client Sample ID:** SW Energy Well Pad #1 (Production Water Sample)  
**Collection Date:** 5/22/2014 1150h  
**Received Date:** 5/27/2014 843h      Test Code: 8015-W-TPH(1L)

## Analytical Results      TPH-DRO (C10-C28) by GC/FID Method 8015D/3510C

**Analyzed:** 5/27/2014 1428h      **Extracted:** 5/27/2014 1010h  
**Units:** mg/L      **Dilution Factor:** 200      **Method:** SW8015D

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Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual		
Diesel Range Organics (DRO) (C10-C28)	68476-34-6	1,000	<b>8,650</b>			
Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene	460-00-4	44.1	0.4444	9,910	10-190	S

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*Insufficient sample mass/volume was received to perform MS/MSD analysis. An LCSD was added to provide precision data.  
S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the method blank and LCS.  
The reporting limits were raised due to high analyte concentrations.*

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality

**Contact:** Jim Harris

**Project:**

**Lab Sample ID:** 1405519-001A

**Client Sample ID:** Green River Above Ruby Ranch (Background Sample of River Water)

**Collection Date:** 5/22/2014 1400h

**Received Date:** 5/27/2014 843h

Test Code: 8270-W

## Analytical Results

SVOA TCL List by GC/MS Method 8270D/3510C

**Analyzed:** 5/27/2014 1804h

**Extracted:** 5/27/2014 1136h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8270D

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1'-Biphenyl	92-52-4	10.0	< 10.0	
1,2,4,5-Tetrachlorobenzene	95-94-3	10.0	< 10.0	
2,3,4,6-Tetrachlorophenol	58-90-2	10.0	< 10.0	
2,4,5-Trichlorophenol	95-95-4	10.0	< 10.0	
2,4,6-Trichlorophenol	88-06-2	10.0	< 10.0	
2,4-Dichlorophenol	120-83-2	10.0	< 10.0	
2,4-Dimethylphenol	105-67-9	10.0	< 10.0	
2,4-Dinitrophenol	51-28-5	10.0	< 10.0	
2,4-Dinitrotoluene	121-14-2	10.0	< 10.0	
2,6-Dinitrotoluene	606-20-2	10.0	< 10.0	
2-Chloronaphthalene	91-58-7	10.0	< 10.0	
2-Chlorophenol	95-57-8	10.0	< 10.0	
2-Methylnaphthalene	91-57-6	10.0	< 10.0	
2-Methylphenol	95-48-7	10.0	< 10.0	
2-Nitroaniline	88-74-4	10.0	< 10.0	
2-Nitrophenol	88-75-5	10.0	< 10.0	
3&4-Methylphenol		10.0	< 10.0	
3,3'-Dichlorobenzidine	91-94-1	10.0	< 10.0	
3-Nitroaniline	99-09-2	10.0	< 10.0	
4,6-Dinitro-2-methylphenol	534-52-1	10.0	< 10.0	
4-Bromophenyl phenyl ether	101-55-3	10.0	< 10.0	
4-Chloro-3-methylphenol	59-50-7	10.0	< 10.0	
4-Chloroaniline	106-47-8	10.0	< 10.0	
4-Chlorophenyl phenyl ether	7005-72-3	10.0	< 10.0	
4-Nitroaniline	100-01-6	10.0	< 10.0	
4-Nitrophenol	100-02-7	10.0	< 10.0	
Acenaphthene	83-32-9	10.0	< 10.0	
Acenaphthylene	208-96-8	10.0	< 10.0	
Acetophenone	98-86-2	10.0	< 10.0	
Anthracene	120-12-7	10.0	< 10.0	



**Lab Sample ID:** 1405519-001A

**Client Sample ID:** Green River Above Ruby Ranch (Background Sample of River Water)

**Analyzed:** 5/27/2014 1804h

**Extracted:** 5/27/2014 1136h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8270D

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Atrazine	1912-24-9	10.0	< 10.0	
Benz(a)anthracene	56-55-3	10.0	< 10.0	
Benzaldehyde	100-52-7	10.0	< 10.0	
Benzo(a)pyrene	50-32-8	10.0	< 10.0	
Benzo(b)fluoranthene	205-99-2	10.0	< 10.0	
Benzo(g,h,i)perylene	191-24-2	10.0	< 10.0	
Benzo(k)fluoranthene	207-08-9	10.0	< 10.0	
Bis(2-chloroethoxy)methane	111-91-1	10.0	< 10.0	
Bis(2-chloroethyl) ether	111-44-4	10.0	< 10.0	
Bis(2-chloroisopropyl) ether	108-60-1	10.0	< 10.0	
Butyl benzyl phthalate	85-68-7	10.0	< 10.0	
Caprolactam	105-60-2	10.0	< 10.0	
Carbazole	86-74-8	10.0	< 10.0	
Chrysene	218-01-9	10.0	< 10.0	
Dibenz(a,h)anthracene	53-70-3	10.0	< 10.0	
Dibenzofuran	132-64-9	10.0	< 10.0	
Diethyl phthalate	84-66-2	10.0	< 10.0	
Dimethyl phthalate	131-11-3	10.0	< 10.0	
Di-n-butyl phthalate	84-74-2	10.0	< 10.0	
Di-n-octyl phthalate	117-84-0	10.0	< 10.0	
Fluoranthene	206-44-0	10.0	< 10.0	
Fluorene	86-73-7	10.0	< 10.0	
Hexachlorobenzene	118-74-1	10.0	< 10.0	
Hexachlorobutadiene	87-68-3	10.0	< 10.0	
Hexachlorocyclopentadiene	77-47-4	10.0	< 10.0	
Hexachloroethane	67-72-1	10.0	< 10.0	
Indeno(1,2,3-cd)pyrene	193-39-5	10.0	< 10.0	
Isophorone	78-59-1	10.0	< 10.0	
Naphthalene	91-20-3	10.0	< 10.0	
Nitrobenzene	98-95-3	10.0	< 10.0	
N-Nitrosodi-n-propylamine	621-64-7	10.0	< 10.0	
N-Nitrosodiphenylamine	86-30-6	10.0	< 10.0	
Pentachlorophenol	87-86-5	10.0	< 10.0	
Phenanthrene	85-01-8	10.0	< 10.0	
Phenol	108-95-2	10.0	< 10.0	
Pyrene	129-00-0	10.0	< 10.0	



**Lab Sample ID:** 1405519-001A

**Client Sample ID:** Green River Above Ruby Ranch (Background Sample of River Water)

**Analyzed:** 5/27/2014 1804h

**Extracted:** 5/27/2014 1136h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8270D

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol	118-79-6	67.2	80.00	84.0	14-159	
Surr: 2-Fluorobiphenyl	321-60-8	13.9	40.00	34.6	10-124	
Surr: 2-Fluorophenol	367-12-4	27.4	80.00	34.2	10-106	
Surr: Nitrobenzene-d5	4165-60-0	13.9	40.00	34.7	10-180	
Surr: Phenol-d6	13127-88-3	19.8	80.00	24.8	10-122	
Surr: Terphenyl-d14	1718-51-0	25.0	40.00	62.4	10-221	

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**Analyzed:** 5/28/2014 2319h

**Extracted:** 5/28/2014 1058h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Bis(2-ethylhexyl) phthalate	117-81-7	10.0	< 10.0	

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Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol	118-79-6	133	160.0	83.3	14-159	
Surr: 2-Fluorobiphenyl	321-60-8	39.6	80.00	49.4	10-124	
Surr: 2-Fluorophenol	367-12-4	61.9	160.0	38.7	10-106	
Surr: Nitrobenzene-d5	4165-60-0	40.3	80.00	50.3	10-180	
Surr: Phenol-d6	13127-88-3	46.6	160.0	29.1	10-122	
Surr: Terphenyl-d14	1718-51-0	59.2	80.00	74.0	10-221	

Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer



# ORGANIC ANALYTICAL REPORT

**Client:** Utah Division of Water Quality

**Contact:** Jim Harris

**Project:**

**Lab Sample ID:** 1405519-001B

**Client Sample ID:** Green River Above Ruby Ranch (Background Sample of River Water)

**Collection Date:** 5/22/2014 1400h

**Received Date:** 5/27/2014 843h

Test Code: 8260-W

## Analytical Results

VOAs AWAL List by GC/MS Method 8260C/5030C

**Analyzed:** 5/27/2014 1150h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

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Kyle F. Gross

Laboratory Director

Jose Rocha

QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,1,1-Trichloroethane	71-55-6	2.00	< 2.00	
1,1,2,2-Tetrachloroethane	79-34-5	2.00	< 2.00	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	2.00	< 2.00	
1,1,2-Trichloroethane	79-00-5	2.00	< 2.00	
1,1-Dichloroethane	75-34-3	2.00	< 2.00	
1,1-Dichloroethene	75-35-4	2.00	< 2.00	
1,2,4-Trichlorobenzene	120-82-1	2.00	< 2.00	
1,2-Dibromo-3-chloropropane	96-12-8	5.00	< 5.00	
1,2-Dibromoethane	106-93-4	2.00	< 2.00	
1,2-Dichlorobenzene	95-50-1	2.00	< 2.00	
1,2-Dichloroethane	107-06-2	2.00	< 2.00	
1,2-Dichloropropane	78-87-5	2.00	< 2.00	
1,3-Dichlorobenzene	541-73-1	2.00	< 2.00	
1,4-Dichlorobenzene	106-46-7	2.00	< 2.00	
2-Butanone	78-93-3	10.0	< 10.0	
2-Hexanone	591-78-6	5.00	< 5.00	
4-Methyl-2-pentanone	108-10-1	5.00	< 5.00	
Acetone	67-64-1	10.0	< 10.0	
Benzene	71-43-2	2.00	< 2.00	
Bromodichloromethane	75-27-4	2.00	< 2.00	
Bromoform	75-25-2	2.00	< 2.00	
Bromomethane	74-83-9	5.00	< 5.00	
Carbon disulfide	75-15-0	2.00	< 2.00	
Carbon tetrachloride	56-23-5	2.00	< 2.00	
Chlorobenzene	108-90-7	2.00	< 2.00	
Chloroethane	75-00-3	2.00	< 2.00	
Chloroform	67-66-3	2.00	< 2.00	
Chloromethane	74-87-3	3.00	< 3.00	
cis-1,2-Dichloroethene	156-59-2	2.00	< 2.00	
cis-1,3-Dichloropropene	10061-01-5	2.00	< 2.00	





**Lab Sample ID:** 1405519-001B

**Client Sample ID:** Green River Above Ruby Ranch (Background Sample of River Water)

**Analyzed:** 5/27/2014 1150h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Cyclohexane	110-82-7	2.00	< 2.00	
Dibromochloromethane	124-48-1	2.00	< 2.00	
Dichlorodifluoromethane	75-71-8	2.00	< 2.00	
Ethylbenzene	100-41-4	2.00	< 2.00	
Isopropylbenzene	98-82-8	2.00	< 2.00	
Methyl Acetate	79-20-9	5.00	< 5.00	
Methyl tert-butyl ether	1634-04-4	2.00	< 2.00	
Methylcyclohexane	108-87-2	2.00	< 2.00	
Methylene chloride	75-09-2	2.00	< 2.00	
Naphthalene	91-20-3	2.00	< 2.00	
Styrene	100-42-5	2.00	< 2.00	
Tetrachloroethene	127-18-4	2.00	< 2.00	
Toluene	108-88-3	2.00	< 2.00	
trans-1,2-Dichloroethene	156-60-5	2.00	< 2.00	
trans-1,3-Dichloropropene	10061-02-6	2.00	< 2.00	
Trichloroethene	79-01-6	2.00	< 2.00	
Trichlorofluoromethane	75-69-4	2.00	< 2.00	
Vinyl chloride	75-01-4	1.00	< 1.00	
Xylenes, Total	1330-20-7	2.00	< 2.00	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	49.6	50.00	99.1	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	52.2	50.00	104	80-128	
Surr: Dibromofluoromethane	1868-53-7	47.6	50.00	95.2	80-124	
Surr: Toluene-d8	2037-26-5	48.7	50.00	97.3	77-129	



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1405518-002DDUP	Date Analyzed:	05/27/2014	1033h										
Test Code:	TDS-W-2540C												
Total Dissolved Solids	290	mg/L	SM2540C	10.8	50.0					320	9.84	5	@
<b>Lab Sample ID:</b> 1405519-001DDUP	Date Analyzed:	05/27/2014	1033h										
Test Code:	TDS-W-2540C												
Total Dissolved Solids	400	mg/L	SM2540C	4.34	20.0					392	2.02	5	

@ - High RPD due to suspected sample non-homogeneity or matrix interference.



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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-R69427</b>													
Date Analyzed: 05/27/2014 1400h													
Test Code: OGF-W-1664SGT													
SGT-HEM/Non-Polar Material	14.8	mg/L	E1664A-SGT	0.569	3.00	20.00	0	74.0	64 - 132				
<b>Lab Sample ID: LCS-R69460</b>													
Date Analyzed: 05/27/2014 1033h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	196	mg/L	SM2540C	2.17	10.0	205.0	0	95.6	80 - 120				



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Laboratory Director

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: MB-R69427</b>													
Date Analyzed: 05/27/2014 1400h													
Test Code: OGF-W-1664SGT													
SGT-HEM/Non-Polar Material	< 3.00	mg/L	E1664A-SGT	0.569	3.00								
<b>Lab Sample ID: MB-R69460</b>													
Date Analyzed: 05/27/2014 1033h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	2.17	10.0								



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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** QCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> QCS-R69427	Date Analyzed: 05/27/2014 1400h												
Test Code: OGF-W-1664SGT													
SGT-HEM/Non-Polar Material	17.4	mg/L	E1664A-SGT	0.569	3.00	20.00	1.8	78.0	64 - 132				



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QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** WC  
**QC Type:** QCSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> QCSD-R69427	Date Analyzed: 05/27/2014 1400h												
<b>Test Code:</b> OGF-W-1664SGT													
SGT-HEM/Non-Polar Material	16.9	mg/L	E1664A-SGT	0.569	3.00	20.00	1.8	75.5	64 - 132	17.4	2.92	34	



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Laboratory Director

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QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** GC  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-32519	Date Analyzed:	05/27/2014	1447h										
Test Code: 8015-W-TPH(1L)	Date Prepared:	05/27/2014	1010h										
Diesel Range Organics (DRO) (C10-C28)	1.27	mg/L	SW8015D	0.198	0.500	2.000	0	63.7	36 - 132				
Surr: 4-Bromofluorobenzene	0.230	mg/L	SW8015D			0.4000		57.6	18 - 95				



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** GC  
**QC Type:** LCSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCSD-32519	Date Analyzed:	05/27/2014	1507h										
Test Code: 8015-W-TPH(1L)	Date Prepared:	05/27/2014	1010h										
Diesel Range Organics (DRO) (C10-C28)	1.34	mg/L	SW8015D	0.198	0.500	2.000	0	67.2	36 - 132	1.27	5.31	25	
Surr: 4-Bromofluorobenzene	0.241	mg/L	SW8015D			0.4000		60.1	18 - 95				

*Insufficient sample mass/volume was received to perform MS/MSD analysis. An LCSD was added to provide precision data.*





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** GC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-32519	Date Analyzed:	05/27/2014	1428h										
Test Code: 8015-W-TPH(1L)	Date Prepared:	05/27/2014	1010h										
Diesel Range Organics (DRO) (C10-C28)	< 0.500	mg/L	SW8015D	0.198	0.500								
Surr: 4-Bromofluorobenzene	0.144	mg/L	SW8015D			0.4000		36.1	18 - 95				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS-32521</b>													
Date Analyzed:		05/27/2014 1546h											
Test Code:		8270-W											
Date Prepared:		05/27/2014 1136h											
1,2,4-Trichlorobenzene	26.8	µg/L	SW8270D	1.57	10.0	80.00	0	33.4	10 - 104				
1,4-Dichlorobenzene	20.1	µg/L	SW8270D	1.71	10.0	80.00	0	25.1	10 - 118				
2,4,6-Trichlorophenol	65.3	µg/L	SW8270D	1.98	10.0	80.00	0	81.7	17 - 119				
2,4-Dimethylphenol	62.1	µg/L	SW8270D	1.94	10.0	80.00	0	77.6	10 - 131				
2,4-Dinitrotoluene	70.7	µg/L	SW8270D	1.75	10.0	80.00	0	88.4	42 - 219				
2-Chloronaphthalene	41.1	µg/L	SW8270D	1.80	10.0	80.00	0	51.4	23 - 126				
2-Chlorophenol	50.7	µg/L	SW8270D	1.62	10.0	80.00	0	63.4	15 - 128				
4,6-Dinitro-2-methylphenol	84.0	µg/L	SW8270D	1.26	10.0	80.00	0	105	30 - 198				
4-Chloro-3-methylphenol	78.7	µg/L	SW8270D	2.13	10.0	80.00	0	98.4	29 - 148				
4-Nitrophenol	90.4	µg/L	SW8270D	9.39	10.0	80.00	0	113	10 - 157				
Acenaphthene	49.6	µg/L	SW8270D	1.82	10.0	80.00	0	62.0	20 - 116				
Benzo(a)pyrene	78.3	µg/L	SW8270D	2.61	10.0	80.00	0	97.8	10 - 221				
N-Nitrosodi-n-propylamine	47.9	µg/L	SW8270D	1.98	10.0	80.00	0	59.9	20 - 148				
Pentachlorophenol	83.0	µg/L	SW8270D	2.45	10.0	80.00	0	104	21 - 153				
Phenol	24.1	µg/L	SW8270D	1.20	10.0	80.00	0	30.1	10 - 131				
Pyrene	64.8	µg/L	SW8270D	2.44	10.0	80.00	0	81.0	37 - 150				
Surr: 2,4,6-Tribromophenol	86.2	µg/L	SW8270D			80.00		108	10 - 165				
Surr: 2-Fluorobiphenyl	21.4	µg/L	SW8270D			40.00		53.4	10 - 118				
Surr: 2-Fluorophenol	33.6	µg/L	SW8270D			80.00		42.0	10 - 121				
Surr: Nitrobenzene-d5	24.5	µg/L	SW8270D			40.00		61.2	10 - 127				
Surr: Phenol-d6	26.3	µg/L	SW8270D			80.00		32.9	10 - 124				
Surr: Terphenyl-d14	34.3	µg/L	SW8270D			40.00		85.8	30 - 147				
<b>Lab Sample ID: LCS-32552</b>													
Date Analyzed:		05/28/2014 2152h											
Test Code:		8270-W											
Date Prepared:		05/28/2014 1058h											
1,2,4-Trichlorobenzene	32.7	µg/L	SW8270D	1.57	10.0	80.00	0	40.9	10 - 104				
1,4-Dichlorobenzene	23.5	µg/L	SW8270D	1.71	10.0	80.00	0	29.4	10 - 118				
2,4,6-Trichlorophenol	63.3	µg/L	SW8270D	1.98	10.0	80.00	0	79.1	17 - 119				



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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCS-32552	Date Analyzed:	05/28/2014 2152h											
<b>Test Code:</b> 8270-W	Date Prepared:	05/28/2014 1058h											
2,4-Dimethylphenol	64.3	µg/L	SW8270D	1.94	10.0	80.00	0	80.4	10 - 131				
2,4-Dinitrotoluene	67.1	µg/L	SW8270D	1.75	10.0	80.00	0	83.9	42 - 219				
2-Chloronaphthalene	51.9	µg/L	SW8270D	1.80	10.0	80.00	0	64.8	23 - 126				
2-Chlorophenol	52.3	µg/L	SW8270D	1.62	10.0	80.00	0	65.4	15 - 128				
4,6-Dinitro-2-methylphenol	73.6	µg/L	SW8270D	1.26	10.0	80.00	0	92.0	30 - 198				
4-Chloro-3-methylphenol	72.7	µg/L	SW8270D	2.13	10.0	80.00	0	90.9	29 - 148				
4-Nitrophenol	38.0	µg/L	SW8270D	9.39	10.0	80.00	0	47.5	10 - 157				
Acenaphthene	59.4	µg/L	SW8270D	1.82	10.0	80.00	0	74.3	20 - 116				
Benzo(a)pyrene	73.4	µg/L	SW8270D	2.61	10.0	80.00	0	91.8	10 - 221				
N-Nitrosodi-n-propylamine	51.7	µg/L	SW8270D	1.98	10.0	80.00	0	64.6	20 - 148				
Pentachlorophenol	79.6	µg/L	SW8270D	2.45	10.0	80.00	0	99.5	21 - 153				
Phenol	33.1	µg/L	SW8270D	1.20	10.0	80.00	0	41.3	10 - 131				
Pyrene	72.5	µg/L	SW8270D	2.44	10.0	80.00	0	90.6	37 - 150				
Surr: 2,4,6-Tribromophenol	148	µg/L	SW8270D			160.0		92.6	10 - 165				
Surr: 2-Fluorobiphenyl	50.3	µg/L	SW8270D			80.00		62.9	10 - 118				
Surr: 2-Fluorophenol	68.2	µg/L	SW8270D			160.0		42.7	10 - 121				
Surr: Nitrobenzene-d5	46.1	µg/L	SW8270D			80.00		57.6	10 - 127				
Surr: Phenol-d6	57.9	µg/L	SW8270D			160.0		36.2	10 - 124				
Surr: Terphenyl-d14	71.4	µg/L	SW8270D			80.00		89.3	30 - 147				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** LCSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> LCSD-32552	Date Analyzed:	05/28/2014 2221h											
<b>Test Code:</b> 8270-W	Date Prepared:	05/28/2014 1058h											
1,2,4-Trichlorobenzene	28.7	µg/L	SW8270D	1.57	10.0	80.00	0	35.9	10 - 104	32.7	13.0	25	
1,4-Dichlorobenzene	20.9	µg/L	SW8270D	1.71	10.0	80.00	0	26.1	10 - 118	23.5	11.8	25	
2,4,6-Trichlorophenol	54.5	µg/L	SW8270D	1.98	10.0	80.00	0	68.2	17 - 119	63.3	14.9	25	
2,4-Dimethylphenol	58.3	µg/L	SW8270D	1.94	10.0	80.00	0	72.9	10 - 131	64.3	9.81	25	
2,4-Dinitrotoluene	58.2	µg/L	SW8270D	1.75	10.0	80.00	0	72.8	42 - 219	67.1	14.1	25	
2-Chloronaphthalene	42.8	µg/L	SW8270D	1.80	10.0	80.00	0	53.5	23 - 126	51.9	19.2	25	
2-Chlorophenol	46.0	µg/L	SW8270D	1.62	10.0	80.00	0	57.6	15 - 128	52.3	12.7	25	
4,6-Dinitro-2-methylphenol	70.3	µg/L	SW8270D	1.26	10.0	80.00	0	87.9	30 - 198	73.6	4.55	25	
4-Chloro-3-methylphenol	67.4	µg/L	SW8270D	2.13	10.0	80.00	0	84.2	29 - 148	72.7	7.61	25	
4-Nitrophenol	31.2	µg/L	SW8270D	9.39	10.0	80.00	0	39.0	10 - 157	38	19.6	25	
Acenaphthene	47.6	µg/L	SW8270D	1.82	10.0	80.00	0	59.5	20 - 116	59.4	22.0	25	
Benzo(a)pyrene	63.0	µg/L	SW8270D	2.61	10.0	80.00	0	78.8	10 - 221	73.4	15.2	25	
N-Nitrosodi-n-propylamine	44.0	µg/L	SW8270D	1.98	10.0	80.00	0	55.0	20 - 148	51.7	16.1	25	
Pentachlorophenol	74.6	µg/L	SW8270D	2.45	10.0	80.00	0	93.2	21 - 153	79.6	6.55	25	
Phenol	27.4	µg/L	SW8270D	1.20	10.0	80.00	0	34.3	10 - 131	33.1	18.5	25	
Pyrene	63.6	µg/L	SW8270D	2.44	10.0	80.00	0	79.4	37 - 150	72.5	13.2	25	
Surr: 2,4,6-Tribromophenol	132	µg/L	SW8270D			160.0		82.5	10 - 165				
Surr: 2-Fluorobiphenyl	40.9	µg/L	SW8270D			80.00		51.1	10 - 118				
Surr: 2-Fluorophenol	64.7	µg/L	SW8270D			160.0		40.5	10 - 121				
Surr: Nitrobenzene-d5	42.3	µg/L	SW8270D			80.00		52.8	10 - 127				
Surr: Phenol-d6	54.2	µg/L	SW8270D			160.0		33.9	10 - 124				
Surr: Terphenyl-d14	65.2	µg/L	SW8270D			80.00		81.5	30 - 147				



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Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1405519

**Project:**

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-32521	Date Analyzed:	05/27/2014	1518h										
<b>Test Code:</b> 8270-W	Date Prepared:	05/27/2014	1136h										
1,1'-Biphenyl	< 10.0	µg/L	SW8270D	1.80	10.0								
1,2,4,5-Tetrachlorobenzene	< 10.0	µg/L	SW8270D	2.11	10.0								
2,3,4,6-Tetrachlorophenol	< 10.0	µg/L	SW8270D	1.71	10.0								
2,4,5-Trichlorophenol	< 10.0	µg/L	SW8270D	1.92	10.0								
2,4,6-Trichlorophenol	< 10.0	µg/L	SW8270D	1.98	10.0								
2,4-Dichlorophenol	< 10.0	µg/L	SW8270D	1.67	10.0								
2,4-Dimethylphenol	< 10.0	µg/L	SW8270D	1.94	10.0								
2,4-Dinitrophenol	< 10.0	µg/L	SW8270D	4.48	10.0								
2,4-Dinitrotoluene	< 10.0	µg/L	SW8270D	1.75	10.0								
2,6-Dinitrotoluene	< 10.0	µg/L	SW8270D	2.47	10.0								
2-Chloronaphthalene	< 10.0	µg/L	SW8270D	1.80	10.0								
2-Chlorophenol	< 10.0	µg/L	SW8270D	1.62	10.0								
2-Methylnaphthalene	< 10.0	µg/L	SW8270D	2.03	10.0								
2-Methylphenol	< 10.0	µg/L	SW8270D	1.67	10.0								
2-Nitroaniline	< 10.0	µg/L	SW8270D	3.73	10.0								
2-Nitrophenol	< 10.0	µg/L	SW8270D	1.48	10.0								
3&4-Methylphenol	< 10.0	µg/L	SW8270D	7.66	10.0								
3,3'-Dichlorobenzidine	< 10.0	µg/L	SW8270D	1.18	10.0								
3-Nitroaniline	< 10.0	µg/L	SW8270D	2.08	10.0								
4,6-Dinitro-2-methylphenol	< 10.0	µg/L	SW8270D	1.26	10.0								
4-Bromophenyl phenyl ether	< 10.0	µg/L	SW8270D	1.92	10.0								
4-Chloro-3-methylphenol	< 10.0	µg/L	SW8270D	2.13	10.0								
4-Chloroaniline	< 10.0	µg/L	SW8270D	2.05	10.0								
4-Chlorophenyl phenyl ether	< 10.0	µg/L	SW8270D	2.19	10.0								
4-Nitroaniline	< 10.0	µg/L	SW8270D	9.23	10.0								
4-Nitrophenol	< 10.0	µg/L	SW8270D	9.39	10.0								
Acenaphthene	< 10.0	µg/L	SW8270D	1.82	10.0								
Acenaphthylene	< 10.0	µg/L	SW8270D	1.91	10.0								



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality

**Lab Set ID:** 1405519

**Project:**

**Contact:** Jim Harris

**Dept:** MSSV

**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB-32521	Date Analyzed:	05/27/2014	1518h										
Test Code: 8270-W	Date Prepared:	05/27/2014	1136h										
Acetophenone	< 10.0	µg/L	SW8270D	1.67	10.0								
Anthracene	< 10.0	µg/L	SW8270D	1.57	10.0								
Atrazine	< 10.0	µg/L	SW8270D	4.14	10.0								
Benz(a)anthracene	< 10.0	µg/L	SW8270D	2.21	10.0								
Benzaldehyde	< 10.0	µg/L	SW8270D	9.52	10.0								
Benzo(a)pyrene	< 10.0	µg/L	SW8270D	2.61	10.0								
Benzo(b)fluoranthene	< 10.0	µg/L	SW8270D	2.08	10.0								
Benzo(g,h,i)perylene	< 10.0	µg/L	SW8270D	2.32	10.0								
Benzo(k)fluoranthene	< 10.0	µg/L	SW8270D	2.11	10.0								
Bis(2-chloroethoxy)methane	< 10.0	µg/L	SW8270D	1.53	10.0								
Bis(2-chloroethyl) ether	< 10.0	µg/L	SW8270D	1.47	10.0								
Bis(2-chloroisopropyl) ether	< 10.0	µg/L	SW8270D	2.79	10.0								
Butyl benzyl phthalate	< 10.0	µg/L	SW8270D	2.27	10.0								
Caprolactam	< 10.0	µg/L	SW8270D	1.46	10.0								
Carbazole	< 10.0	µg/L	SW8270D	2.64	10.0								
Chrysene	< 10.0	µg/L	SW8270D	2.53	10.0								
Dibenz(a,h)anthracene	< 10.0	µg/L	SW8270D	1.93	10.0								
Dibenzofuran	< 10.0	µg/L	SW8270D	2.12	10.0								
Diethyl phthalate	< 10.0	µg/L	SW8270D	2.44	10.0								
Dimethyl phthalate	< 10.0	µg/L	SW8270D	3.04	10.0								
Di-n-butyl phthalate	< 10.0	µg/L	SW8270D	1.45	10.0								
Di-n-octyl phthalate	< 10.0	µg/L	SW8270D	1.91	10.0								
Fluoranthene	< 10.0	µg/L	SW8270D	2.09	10.0								
Fluorene	< 10.0	µg/L	SW8270D	2.44	10.0								
Hexachlorobenzene	< 10.0	µg/L	SW8270D	1.67	10.0								
Hexachlorobutadiene	< 10.0	µg/L	SW8270D	1.57	10.0								
Hexachlorocyclopentadiene	< 10.0	µg/L	SW8270D	1.54	10.0								
Hexachloroethane	< 10.0	µg/L	SW8270D	1.42	10.0								



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: MB-32521</b>													
Date Analyzed: 05/27/2014 1518h													
Test Code: 8270-W													
Date Prepared: 05/27/2014 1136h													
Indeno(1,2,3-cd)pyrene	< 10.0	µg/L	SW8270D	2.06	10.0								
Isophorone	< 10.0	µg/L	SW8270D	2.52	10.0								
Naphthalene	< 10.0	µg/L	SW8270D	1.64	10.0								
Nitrobenzene	< 10.0	µg/L	SW8270D	1.70	10.0								
N-Nitrosodi-n-propylamine	< 10.0	µg/L	SW8270D	1.98	10.0								
N-Nitrosodiphenylamine	< 10.0	µg/L	SW8270D	1.78	10.0								
Pentachlorophenol	< 10.0	µg/L	SW8270D	2.45	10.0								
Phenanthrene	< 10.0	µg/L	SW8270D	1.51	10.0								
Phenol	< 10.0	µg/L	SW8270D	1.20	10.0								
Pyrene	< 10.0	µg/L	SW8270D	2.44	10.0								
Surr: 2,4,6-Tribromophenol	82.4	µg/L	SW8270D			80.00		103	10 - 165				
Surr: 2-Fluorobiphenyl	22.8	µg/L	SW8270D			40.00		56.9	10 - 118				
Surr: 2-Fluorophenol	34.0	µg/L	SW8270D			80.00		42.6	10 - 121				
Surr: Nitrobenzene-d5	24.9	µg/L	SW8270D			40.00		62.2	10 - 127				
Surr: Phenol-d6	25.2	µg/L	SW8270D			80.00		31.4	10 - 124				
Surr: Terphenyl-d14	35.9	µg/L	SW8270D			40.00		89.7	30 - 147				
<b>Lab Sample ID: MB-32552</b>													
Date Analyzed: 05/28/2014 2124h													
Test Code: 8270-W													
Date Prepared: 05/28/2014 1058h													
Bis(2-ethylhexyl) phthalate	< 10.0	µg/L	SW8270D	6.60	10.0								
Surr: 2,4,6-Tribromophenol	153	µg/L	SW8270D			160.0		95.5	10 - 165				
Surr: 2-Fluorobiphenyl	44.6	µg/L	SW8270D			80.00		55.7	10 - 118				
Surr: 2-Fluorophenol	70.6	µg/L	SW8270D			160.0		44.1	10 - 121				
Surr: Nitrobenzene-d5	42.2	µg/L	SW8270D			80.00		52.7	10 - 127				
Surr: Phenol-d6	51.6	µg/L	SW8270D			160.0		32.2	10 - 124				
Surr: Terphenyl-d14	82.8	µg/L	SW8270D			80.00		103	30 - 147				



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Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1405518-002AMS	Date Analyzed:	05/27/2014 1709h											
Test Code: 8270-W	Date Prepared:	05/27/2014 1136h											
2,4,6-Trichlorophenol	65.6	µg/L	SW8270D	1.98	10.0	80.00	0	82.0	10 - 223				
2,4-Dimethylphenol	54.3	µg/L	SW8270D	1.94	10.0	80.00	0	67.8	10 - 176				
2,4-Dinitrotoluene	71.0	µg/L	SW8270D	1.75	10.0	80.00	0	88.8	21 - 191				
2-Chloronaphthalene	33.2	µg/L	SW8270D	1.80	10.0	80.00	0	41.6	12 - 132				
2-Chlorophenol	46.8	µg/L	SW8270D	1.62	10.0	80.00	0	58.5	20 - 107				
4,6-Dinitro-2-methylphenol	80.9	µg/L	SW8270D	1.26	10.0	80.00	0	101	20 - 250				
4-Chloro-3-methylphenol	78.8	µg/L	SW8270D	2.13	10.0	80.00	0	98.5	10 - 136				
4-Nitrophenol	87.3	µg/L	SW8270D	9.39	10.0	80.00	0	109	10 - 135				
Acenaphthene	45.6	µg/L	SW8270D	1.82	10.0	80.00	0	57.0	21 - 113				
Benzo(a)pyrene	73.7	µg/L	SW8270D	2.61	10.0	80.00	0	92.1	15 - 169				
N-Nitrosodi-n-propylamine	42.6	µg/L	SW8270D	1.98	10.0	80.00	0	53.3	10 - 133				
Pentachlorophenol	73.4	µg/L	SW8270D	2.45	10.0	80.00	0	91.7	10 - 131				
Phenol	21.7	µg/L	SW8270D	1.20	10.0	80.00	0	27.2	10 - 71				
Pyrene	63.9	µg/L	SW8270D	2.44	10.0	80.00	0	79.8	23 - 150				
Surr: 2,4,6-Tribromophenol	77.9	µg/L	SW8270D			80.00		97.4	14 - 159				
Surr: 2-Fluorobiphenyl	16.2	µg/L	SW8270D			40.00		40.6	10 - 124				
Surr: 2-Fluorophenol	27.9	µg/L	SW8270D			80.00		34.9	10 - 106				
Surr: Nitrobenzene-d5	19.1	µg/L	SW8270D			40.00		47.7	10 - 180				
Surr: Phenol-d6	23.1	µg/L	SW8270D			80.00		28.9	10 - 122				
Surr: Terphenyl-d14	29.6	µg/L	SW8270D			40.00		74.0	10 - 221				





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSSV  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1405518-002AMSD	Date Analyzed:	05/27/2014 1736h											
Test Code: 8270-W	Date Prepared:	05/27/2014 1136h											
2,4,6-Trichlorophenol	68.2	µg/L	SW8270D	1.98	10.0	80.00	0	85.3	10 - 223	65.6	3.99	25	
2,4-Dimethylphenol	63.8	µg/L	SW8270D	1.94	10.0	80.00	0	79.7	10 - 176	54.3	16.1	25	
2,4-Dinitrotoluene	74.0	µg/L	SW8270D	1.75	10.0	80.00	0	92.5	21 - 191	71	4.14	25	
2-Chloronaphthalene	37.4	µg/L	SW8270D	1.80	10.0	80.00	0	46.7	12 - 132	33.2	11.6	25	
2-Chlorophenol	49.0	µg/L	SW8270D	1.62	10.0	80.00	0	61.3	20 - 107	46.8	4.63	25	
4,6-Dinitro-2-methylphenol	85.3	µg/L	SW8270D	1.26	10.0	80.00	0	107	20 - 250	80.9	5.21	25	
4-Chloro-3-methylphenol	81.8	µg/L	SW8270D	2.13	10.0	80.00	0	102	10 - 136	78.8	3.70	25	
4-Nitrophenol	98.0	µg/L	SW8270D	9.39	10.0	80.00	0	123	10 - 135	87.3	11.5	25	
Acenaphthene	47.4	µg/L	SW8270D	1.82	10.0	80.00	0	59.2	21 - 113	45.6	3.87	25	
Benzo(a)pyrene	76.2	µg/L	SW8270D	2.61	10.0	80.00	0	95.3	15 - 169	73.7	3.38	25	
N-Nitrosodi-n-propylamine	44.5	µg/L	SW8270D	1.98	10.0	80.00	0	55.6	10 - 133	42.7	4.18	25	
Pentachlorophenol	77.7	µg/L	SW8270D	2.45	10.0	80.00	0	97.2	10 - 131	73.4	5.76	25	
Phenol	24.3	µg/L	SW8270D	1.20	10.0	80.00	0	30.4	10 - 71	21.7	11.1	25	
Pyrene	69.2	µg/L	SW8270D	2.44	10.0	80.00	0	86.5	23 - 150	63.9	8.05	25	
Surr: 2,4,6-Tribromophenol	71.6	µg/L	SW8270D			80.00		89.5	14 - 159				
Surr: 2-Fluorobiphenyl	16.4	µg/L	SW8270D			40.00		41.0	10 - 124				
Surr: 2-Fluorophenol	29.3	µg/L	SW8270D			80.00		36.6	10 - 106				
Surr: Nitrobenzene-d5	17.5	µg/L	SW8270D			40.00		43.8	10 - 180				
Surr: Phenol-d6	25.0	µg/L	SW8270D			80.00		31.3	10 - 122				
Surr: Terphenyl-d14	30.1	µg/L	SW8270D			40.00		75.2	10 - 221				



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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: LCS VOC-D 052714A</b>		Date Analyzed:	05/27/2014 742h										
Test Code: 8260-W													
1,1,1-Trichloroethane	23.3	µg/L	SW8260C	0.206	2.00	20.00	0	116	59 - 156				
1,1-Dichloroethene	24.6	µg/L	SW8260C	0.114	2.00	20.00	0	123	46 - 171				
1,2-Dichlorobenzene	19.9	µg/L	SW8260C	0.459	2.00	20.00	0	99.6	67 - 135				
1,2-Dichloroethane	21.2	µg/L	SW8260C	0.636	2.00	20.00	0	106	60 - 137				
1,2-Dichloropropane	17.6	µg/L	SW8260C	0.0883	2.00	20.00	0	87.9	59 - 135				
Benzene	19.6	µg/L	SW8260C	0.0859	2.00	20.00	0	98.0	62 - 127				
Chlorobenzene	21.9	µg/L	SW8260C	0.263	2.00	20.00	0	110	63 - 140				
Chloroform	21.8	µg/L	SW8260C	0.626	2.00	20.00	0	109	67 - 132				
Ethylbenzene	22.0	µg/L	SW8260C	0.112	2.00	20.00	0	110	55 - 133				
Isopropylbenzene	22.5	µg/L	SW8260C	0.0883	2.00	20.00	0	113	60 - 162				
Methyl tert-butyl ether	21.0	µg/L	SW8260C	0.274	2.00	20.00	0	105	37 - 189				
Methylene chloride	22.3	µg/L	SW8260C	0.321	2.00	20.00	0	112	32 - 185				
Naphthalene	13.2	µg/L	SW8260C	0.315	2.00	20.00	0	65.9	28 - 136				
Toluene	22.0	µg/L	SW8260C	0.206	2.00	20.00	0	110	64 - 129				
Trichloroethene	21.4	µg/L	SW8260C	0.101	2.00	20.00	0	107	54 - 152				
Xylenes, Total	66.0	µg/L	SW8260C	0.333	2.00	60.00	0	110	52 - 134				
Surr: 1,2-Dichloroethane-d4	54.3	µg/L	SW8260C			50.00		109	76 - 138				
Surr: 4-Bromofluorobenzene	53.0	µg/L	SW8260C			50.00		106	77 - 121				
Surr: Dibromofluoromethane	54.0	µg/L	SW8260C			50.00		108	67 - 128				
Surr: Toluene-d8	56.8	µg/L	SW8260C			50.00		114	81 - 135				



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Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB VOC-D 052714A	Date Analyzed:	05/27/2014 820h											
<b>Test Code:</b> 8260-W													
1,1,1-Trichloroethane	< 2.00	µg/L	SW8260C	0.206	2.00								
1,1,2,2-Tetrachloroethane	< 2.00	µg/L	SW8260C	0.0937	2.00								
1,1,2-Trichloro-1,2,2-trifluoroethane	< 2.00	µg/L	SW8260C	0.147	2.00								
1,1,2-Trichloroethane	< 2.00	µg/L	SW8260C	0.0741	2.00								
1,1-Dichloroethane	< 2.00	µg/L	SW8260C	0.619	2.00								
1,1-Dichloroethene	< 2.00	µg/L	SW8260C	0.114	2.00								
1,2,4-Trichlorobenzene	< 2.00	µg/L	SW8260C	0.956	2.00								
1,2-Dibromo-3-chloropropane	< 5.00	µg/L	SW8260C	0.413	5.00								
1,2-Dibromoethane	< 2.00	µg/L	SW8260C	0.0699	2.00								
1,2-Dichlorobenzene	< 2.00	µg/L	SW8260C	0.459	2.00								
1,2-Dichloroethane	< 2.00	µg/L	SW8260C	0.636	2.00								
1,2-Dichloropropane	< 2.00	µg/L	SW8260C	0.0883	2.00								
1,3-Dichlorobenzene	< 2.00	µg/L	SW8260C	0.0877	2.00								
1,4-Dichlorobenzene	< 2.00	µg/L	SW8260C	0.137	2.00								
2-Butanone	< 10.0	µg/L	SW8260C	1.01	10.0								
2-Hexanone	< 5.00	µg/L	SW8260C	0.200	5.00								
4-Methyl-2-pentanone	< 5.00	µg/L	SW8260C	1.11	5.00								
Acetone	< 10.0	µg/L	SW8260C	3.62	10.0								
Benzene	< 2.00	µg/L	SW8260C	0.0859	2.00								
Bromodichloromethane	< 2.00	µg/L	SW8260C	0.553	2.00								
Bromoform	< 2.00	µg/L	SW8260C	0.506	2.00								
Bromomethane	< 5.00	µg/L	SW8260C	0.692	5.00								
Carbon disulfide	< 2.00	µg/L	SW8260C	0.150	2.00								
Carbon tetrachloride	< 2.00	µg/L	SW8260C	0.738	2.00								
Chlorobenzene	< 2.00	µg/L	SW8260C	0.263	2.00								
Chloroethane	< 2.00	µg/L	SW8260C	0.906	2.00								
Chloroform	< 2.00	µg/L	SW8260C	0.626	2.00								
Chloromethane	< 3.00	µg/L	SW8260C	0.214	3.00								



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**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> MB VOC-D 052714A	Date Analyzed:	05/27/2014	820h										
Test Code:	8260-W												
cis-1,2-Dichloroethene	< 2.00	µg/L	SW8260C	0.112	2.00								
cis-1,3-Dichloropropene	< 2.00	µg/L	SW8260C	0.0819	2.00								
Cyclohexane	< 2.00	µg/L	SW8260C	0.415	2.00								
Dibromochloromethane	< 2.00	µg/L	SW8260C	0.461	2.00								
Dichlorodifluoromethane	< 2.00	µg/L	SW8260C	0.108	2.00								
Ethylbenzene	< 2.00	µg/L	SW8260C	0.112	2.00								
Isopropylbenzene	< 2.00	µg/L	SW8260C	0.0883	2.00								
Methyl Acetate	< 5.00	µg/L	SW8260C	1.46	5.00								
Methyl tert-butyl ether	< 2.00	µg/L	SW8260C	0.274	2.00								
Methylcyclohexane	< 2.00	µg/L	SW8260C	0.181	2.00								
Methylene chloride	< 2.00	µg/L	SW8260C	0.321	2.00								
Naphthalene	< 2.00	µg/L	SW8260C	0.315	2.00								
Styrene	< 2.00	µg/L	SW8260C	0.331	2.00								
Tetrachloroethene	< 2.00	µg/L	SW8260C	0.577	2.00								
Toluene	< 2.00	µg/L	SW8260C	0.206	2.00								
trans-1,2-Dichloroethene	< 2.00	µg/L	SW8260C	0.138	2.00								
trans-1,3-Dichloropropene	< 2.00	µg/L	SW8260C	0.256	2.00								
Trichloroethene	< 2.00	µg/L	SW8260C	0.101	2.00								
Trichlorofluoromethane	< 2.00	µg/L	SW8260C	0.0845	2.00								
Vinyl chloride	< 1.00	µg/L	SW8260C	0.138	1.00								
Xylenes, Total	< 2.00	µg/L	SW8260C	0.333	2.00								
Surr: 1,2-Dichloroethane-d4	52.1	µg/L	SW8260C			50.00		104	76 - 138				
Surr: 4-Bromofluorobenzene	53.6	µg/L	SW8260C			50.00		107	77 - 121				
Surr: Dibromofluoromethane	50.1	µg/L	SW8260C			50.00		100	67 - 128				
Surr: Toluene-d8	52.1	µg/L	SW8260C			50.00		104	81 - 135				



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Laboratory Director

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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1405518-001BMS</b>		Date Analyzed:	05/27/2014 1209h										
Test Code: 8260-W													
1,1,1-Trichloroethane	22.4	µg/L	SW8260C	0.206	2.00	20.00	0	112	67 - 147				
1,1-Dichloroethene	24.3	µg/L	SW8260C	0.114	2.00	20.00	0	122	51 - 152				
1,2-Dichlorobenzene	18.8	µg/L	SW8260C	0.459	2.00	20.00	0	94.2	70 - 130				
1,2-Dichloroethane	20.2	µg/L	SW8260C	0.636	2.00	20.00	0	101	39 - 162				
1,2-Dichloropropane	16.8	µg/L	SW8260C	0.0883	2.00	20.00	0	84.1	59 - 135				
Benzene	18.8	µg/L	SW8260C	0.0859	2.00	20.00	0	93.8	66 - 145				
Chlorobenzene	20.7	µg/L	SW8260C	0.263	2.00	20.00	0	104	63 - 140				
Chloroform	20.6	µg/L	SW8260C	0.626	2.00	20.00	0	103	50 - 146				
Ethylbenzene	21.0	µg/L	SW8260C	0.112	2.00	20.00	0	105	69 - 133				
Isopropylbenzene	20.4	µg/L	SW8260C	0.0883	2.00	20.00	0	102	60 - 147				
Methyl tert-butyl ether	18.8	µg/L	SW8260C	0.274	2.00	20.00	0	94.3	37 - 189				
Methylene chloride	22.1	µg/L	SW8260C	0.321	2.00	20.00	0	110	30 - 192				
Naphthalene	10.4	µg/L	SW8260C	0.315	2.00	20.00	0	52.2	41 - 131				
Toluene	20.6	µg/L	SW8260C	0.206	2.00	20.00	0	103	18 - 192				
Trichloroethene	19.8	µg/L	SW8260C	0.101	2.00	20.00	0	99.0	61 - 153				
Xylenes, Total	61.2	µg/L	SW8260C	0.333	2.00	60.00	0	102	42 - 167				
Surr: 1,2-Dichloroethane-d4	50.3	µg/L	SW8260C			50.00		101	72 - 151				
Surr: 4-Bromofluorobenzene	48.0	µg/L	SW8260C			50.00		96.1	80 - 128				
Surr: Dibromofluoromethane	49.3	µg/L	SW8260C			50.00		98.5	80 - 124				
Surr: Toluene-d8	48.4	µg/L	SW8260C			50.00		96.7	77 - 129				

<b>Lab Sample ID: 1405519-001BMS</b>		Date Analyzed:	05/27/2014 1247h										
Test Code: 8260-W													
1,1,1-Trichloroethane	22.3	µg/L	SW8260C	0.206	2.00	20.00	0	111	67 - 147				
1,1-Dichloroethene	23.9	µg/L	SW8260C	0.114	2.00	20.00	0	120	51 - 152				
1,2-Dichlorobenzene	18.9	µg/L	SW8260C	0.459	2.00	20.00	0	94.4	70 - 130				
1,2-Dichloroethane	20.1	µg/L	SW8260C	0.636	2.00	20.00	0	100	39 - 162				
1,2-Dichloropropane	16.7	µg/L	SW8260C	0.0883	2.00	20.00	0	83.4	59 - 135				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1405519-001BMS	Date Analyzed: 05/27/2014 1247h												
<b>Test Code:</b> 8260-W													
Benzene	18.7	µg/L	SW8260C	0.0859	2.00	20.00	0	93.5	66 - 145				
Chlorobenzene	20.7	µg/L	SW8260C	0.263	2.00	20.00	0	103	63 - 140				
Chloroform	20.4	µg/L	SW8260C	0.626	2.00	20.00	0	102	50 - 146				
Ethylbenzene	20.9	µg/L	SW8260C	0.112	2.00	20.00	0	104	69 - 133				
Isopropylbenzene	21.1	µg/L	SW8260C	0.0883	2.00	20.00	0	106	60 - 147				
Methyl tert-butyl ether	19.0	µg/L	SW8260C	0.274	2.00	20.00	0	94.8	37 - 189				
Methylene chloride	21.7	µg/L	SW8260C	0.321	2.00	20.00	0	109	30 - 192				
Naphthalene	10.6	µg/L	SW8260C	0.315	2.00	20.00	0	52.8	41 - 131				
Toluene	20.7	µg/L	SW8260C	0.206	2.00	20.00	0	103	18 - 192				
Trichloroethene	19.6	µg/L	SW8260C	0.101	2.00	20.00	0	97.9	61 - 153				
Xylenes, Total	61.4	µg/L	SW8260C	0.333	2.00	60.00	0	102	42 - 167				
Surr: 1,2-Dichloroethane-d4	49.2	µg/L	SW8260C			50.00		98.5	72 - 151				
Surr: 4-Bromofluorobenzene	48.0	µg/L	SW8260C			50.00		96.0	80 - 128				
Surr: Dibromofluoromethane	48.3	µg/L	SW8260C			50.00		96.6	80 - 124				
Surr: Toluene-d8	48.1	µg/L	SW8260C			50.00		96.2	77 - 129				



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## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 1405518-001BMSD</b>		Date Analyzed:	05/27/2014 1228h										
Test Code: 8260-W													
1,1,1-Trichloroethane	23.0	µg/L	SW8260C	0.206	2.00	20.00	0	115	67 - 147	22.5	2.51	25	
1,1-Dichloroethene	25.0	µg/L	SW8260C	0.114	2.00	20.00	0	125	51 - 152	24.3	2.64	25	
1,2-Dichlorobenzene	19.6	µg/L	SW8260C	0.459	2.00	20.00	0	98.2	70 - 130	18.8	4.16	25	
1,2-Dichloroethane	20.7	µg/L	SW8260C	0.636	2.00	20.00	0	104	39 - 162	20.2	2.49	25	
1,2-Dichloropropane	17.2	µg/L	SW8260C	0.0883	2.00	20.00	0	86.0	59 - 135	16.8	2.18	25	
Benzene	19.3	µg/L	SW8260C	0.0859	2.00	20.00	0	96.7	66 - 145	18.8	2.99	25	
Chlorobenzene	21.7	µg/L	SW8260C	0.263	2.00	20.00	0	108	63 - 140	20.7	4.34	25	
Chloroform	21.3	µg/L	SW8260C	0.626	2.00	20.00	0	106	50 - 146	20.6	3.15	25	
Ethylbenzene	21.9	µg/L	SW8260C	0.112	2.00	20.00	0	110	69 - 133	21	4.19	25	
Isopropylbenzene	22.2	µg/L	SW8260C	0.0883	2.00	20.00	0	111	60 - 147	20.4	8.59	25	
Methyl tert-butyl ether	20.7	µg/L	SW8260C	0.274	2.00	20.00	0	104	37 - 189	18.9	9.40	25	
Methylene chloride	22.7	µg/L	SW8260C	0.321	2.00	20.00	0	113	30 - 192	22.1	2.68	25	
Naphthalene	10.7	µg/L	SW8260C	0.315	2.00	20.00	0	53.6	41 - 131	10.4	2.74	25	
Toluene	21.6	µg/L	SW8260C	0.206	2.00	20.00	0	108	18 - 192	20.6	4.65	25	
Trichloroethene	20.4	µg/L	SW8260C	0.101	2.00	20.00	0	102	61 - 153	19.8	2.98	25	
Xylenes, Total	64.1	µg/L	SW8260C	0.333	2.00	60.00	0	107	42 - 167	61.2	4.72	25	
Surr: 1,2-Dichloroethane-d4	49.6	µg/L	SW8260C			50.00		99.1	72 - 151				
Surr: 4-Bromofluorobenzene	47.8	µg/L	SW8260C			50.00		95.7	80 - 128				
Surr: Dibromofluoromethane	48.8	µg/L	SW8260C			50.00		97.6	80 - 124				
Surr: Toluene-d8	48.2	µg/L	SW8260C			50.00		96.4	77 - 129				

<b>Lab Sample ID: 1405519-001BMSD</b>		Date Analyzed:	05/27/2014 1306h										
Test Code: 8260-W													
1,1,1-Trichloroethane	23.2	µg/L	SW8260C	0.206	2.00	20.00	0	116	67 - 147	22.3	4.22	25	
1,1-Dichloroethene	24.9	µg/L	SW8260C	0.114	2.00	20.00	0	125	51 - 152	23.9	4.22	25	
1,2-Dichlorobenzene	19.5	µg/L	SW8260C	0.459	2.00	20.00	0	97.7	70 - 130	18.9	3.49	25	
1,2-Dichloroethane	21.1	µg/L	SW8260C	0.636	2.00	20.00	0	106	39 - 162	20.1	5.05	25	
1,2-Dichloropropane	17.6	µg/L	SW8260C	0.0883	2.00	20.00	0	88.0	59 - 135	16.7	5.31	25	

Report Date: 5/29/2014 Page 2 of 32



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Utah Division of Water Quality  
**Lab Set ID:** 1405519  
**Project:**

**Contact:** Jim Harris  
**Dept:** MSVOA  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID:</b> 1405519-001BMSD	Date Analyzed: 05/27/2014 1306h												
<b>Test Code:</b> 8260-W													
Benzene	19.6	µg/L	SW8260C	0.0859	2.00	20.00	0	97.8	66 - 145	18.7	4.50	25	
Chlorobenzene	21.7	µg/L	SW8260C	0.263	2.00	20.00	0	109	63 - 140	20.7	5.05	25	
Chloroform	21.4	µg/L	SW8260C	0.626	2.00	20.00	0	107	50 - 146	20.4	4.82	25	
Ethylbenzene	21.6	µg/L	SW8260C	0.112	2.00	20.00	0	108	69 - 133	20.9	3.25	25	
Isopropylbenzene	22.2	µg/L	SW8260C	0.0883	2.00	20.00	0	111	60 - 147	21.1	5.26	25	
Methyl tert-butyl ether	20.1	µg/L	SW8260C	0.274	2.00	20.00	0	100	37 - 189	19	5.69	25	
Methylene chloride	22.7	µg/L	SW8260C	0.321	2.00	20.00	0	114	30 - 192	21.7	4.59	25	
Naphthalene	11.2	µg/L	SW8260C	0.315	2.00	20.00	0	56.2	41 - 131	10.6	6.24	25	
Toluene	21.7	µg/L	SW8260C	0.206	2.00	20.00	0	109	18 - 192	20.7	5.00	25	
Trichloroethene	20.7	µg/L	SW8260C	0.101	2.00	20.00	0	104	61 - 153	19.6	5.71	25	
Xylenes, Total	64.6	µg/L	SW8260C	0.333	2.00	60.00	0	108	42 - 167	61.4	5.03	25	
Surr: 1,2-Dichloroethane-d4	49.3	µg/L	SW8260C			50.00		98.6	72 - 151				
Surr: 4-Bromofluorobenzene	45.8	µg/L	SW8260C			50.00		91.6	80 - 128				
Surr: Dibromofluoromethane	48.4	µg/L	SW8260C			50.00		96.9	80 - 124				
Surr: Toluene-d8	48.5	µg/L	SW8260C			50.00		96.9	77 - 129				



**WORK ORDER Summary**

Work Order: **1405519** Page 1 of 1

**Client:** Utah Division of Water Quality

Due Date: 5/28/2014

**Client ID:** UTD200

**Contact:** Jim Harris

**Project:**

**QC Level:** II+

WO Type: Standard

**Comments:** Next Day Rush / QC2+;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage			
1405519-001A	Green River Above Ruby Ranch (Background Sample of River Water)	5/22/2014 1400h	5/27/2014 0843h	3510-SVOA-PR	Aqueous	<input type="checkbox"/>	Walkin-Semi	4		
				8270-W		<input checked="" type="checkbox"/>	Walkin-Semi			
				<i>Test Group: 8270-W-TCL; # of Analytes: 67 / # of Surr: 6</i>						
1405519-001B				8260-W		<input checked="" type="checkbox"/>	vOC	3		
	<i>Test Group: 8260-W-AWAL; # of Analytes: 49 / # of Surr: 4</i>									
1405519-001C				OGF-W-1664SGT		<input type="checkbox"/>	OGFFridge	1		
1405519-001D				TDS-W-2540C		<input type="checkbox"/>	df / tds			
1405519-002A	SW Energy Well Pad #1 (Production Water Sample)	5/22/2014 1150h	5/27/2014 0843h	3510-TPH-PR	Aqueous	<input type="checkbox"/>	Walkin-TPH (Liters)	1		
				8015-W-TPH(1L)		<input checked="" type="checkbox"/>	Walkin-TPH (Liters)			
				<i>Test Group: 8015-W-TPH1L; # of Analytes: 1 / # of Surr: 1</i>						
1405519-002B				OGF-W-1664SGT		<input type="checkbox"/>	OGFFridge			
1405519-002C				TDS-W-2540C		<input type="checkbox"/>	ww - tds			



