

## ANALYTICAL RESULTS

Prepared for:

Chevron  
5000 State Route 128  
HOOVEN OH 45033

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425

November 04, 2009

Project: Hooven Cincinnati Final Remedy

Samples arrived at the laboratory on Tuesday, October 20, 2009. The PO# for this group is 0015039270 and the release number is 50008931. The group number for this submittal is 1167047.

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-142,101309 Grab Water	5810023
MW-142,101309 Filtered Grab Water	5810024
MW-141,101309 Grab Water	5810025
MW-141,101309 Filtered Grab Water	5810026
MW-22,101309 Grab Water	5810027
MW-22,101309 Filtered Grab Water	5810028
MW-114,101909 Grab Water	5810029
MW-114,101909 Filtered Grab Water	5810030
Trip Blank,101909 Water	5810031

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Trihydro Corporation	Attn: Trihydro Database
ELECTRONIC COPY TO	Trihydro Corporation	Attn: Tim Gunn
ELECTRONIC COPY TO	Trihydro Corporation	Attn: Matthew Mitchell

Questions? Contact your Client Services Representative  
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,



**Robin C. Runkle**  
**Senior Specialist**



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-142,101309 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810023**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/13/2009 09:05 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

MW142 SDG#: HVQ29-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS</b>	<b>Volatiles</b>	<b>SW-846 8260B</b>	<b>ug/l</b>	<b>ug/l</b>	
07582	Benzene	71-43-2	110	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	190	0.8	1
07582	Toluene	108-88-3	21	0.7	1
07582	Xylene (Total)	1330-20-7	170	0.8	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W092971AA	10/24/2009 08:09	Stephanie A Selis	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092971AA	10/24/2009 08:09	Stephanie A Selis	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-142,101309 Filtered Grab Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810024  
LLI Group # 1167047  
OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/13/2009 09:05 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

W142F SDG#: HVQ29-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Metals Dissolved</b>			<b>mg/l</b>	<b>mg/l</b>	
07035	Arsenic	7440-38-2	0.0211	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

### General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	092941848005	10/24/2009 15:49	John P Hook	1
07055	Lead	SW-846 6010B	1	092941848005	10/24/2009 15:49	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	092941848005	10/22/2009 09:10	Denise K Connors	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-141,101309 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810025**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/13/2009 09:40 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

MW141 SDG#: HVQ29-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS</b>	<b>Volatiles</b>	<b>SW-846 8260B</b>	<b>ug/l</b>	<b>ug/l</b>	
07582	Benzene	71-43-2	290	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	45	0.8	1
07582	Toluene	108-88-3	10	0.7	1
07582	Xylene (Total)	1330-20-7	32	0.8	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W092971AA	10/24/2009 08:55	Stephanie A Selis	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092971AA	10/24/2009 08:55	Stephanie A Selis	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** MW-141,101309 Filtered Grab Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy

**LLI Sample #** WW 5810026  
**LLI Group #** 1167047  
OH

**Project Name:** Hooven Cincinnati Final Remedy

Collected: 10/13/2009 09:40 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

W141F SDG#: HVQ29-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Metals Dissolved</b>			<b>mg/l</b>	<b>mg/l</b>	
07035	Arsenic	7440-38-2	0.0131 J	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

### General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	092941848005	10/24/2009 15:52	John P Hook	1
07055	Lead	SW-846 6010B	1	092941848005	10/24/2009 15:52	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	092941848005	10/22/2009 09:10	Denise K Connors	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-22,101309 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810027**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/13/2009 15:00 by DB Account Number: 11494  
Submitted: 10/20/2009 08:55 Chevron  
Reported: 11/04/2009 at 10:05 5000 State Route 128  
Discard: 01/04/2010 HOOVEN OH 45033

MW22- SDG#: HVQ29-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS</b>	<b>Volatiles</b>	<b>SW-846 8260B</b>	<b>ug/l</b>	<b>ug/l</b>	
07582	Benzene	71-43-2	35	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	750	8	10
07582	Toluene	108-88-3	55	0.7	1
07582	Xylene (Total)	1330-20-7	490	0.8	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W092971AA	10/24/2009 11:14	Stephanie A Selis	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	W092981AA	10/26/2009 00:47	Michael A Ziegler	10
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092971AA	10/24/2009 11:14	Stephanie A Selis	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092981AA	10/26/2009 00:47	Michael A Ziegler	10



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-22,101309 Filtered Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810028**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/13/2009 15:00 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

MW22F SDG#: HVQ29-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Metals Dissolved</b>			<b>mg/l</b>	<b>mg/l</b>	
07035	Arsenic	7440-38-2	0.0364	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1

### General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	092941848005	10/24/2009 15:55	John P Hook	1
07055	Lead	SW-846 6010B	1	092941848005	10/24/2009 15:55	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	092941848005	10/22/2009 09:10	Denise K Connors	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-114,101909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810029**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/19/2009 13:55 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

MW114 SDG#: HVQ29-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B ug/l</b>					
07582	Benzene	71-43-2	N.D.	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	N.D.	0.7	1
07582	Xylene (Total)	1330-20-7	N.D.	0.8	1
<b>GC Volatiles SW-846 8015B ug/l</b>					
01635	TPH-GRO water C6-C10	n.a.	N.D.	20	1
Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH =12.					
<b>GC Extractable TPH SW-846 8015B ug/l</b>					
08269	TPH-DRO water C10-C28	n.a.	42 J	30	1
<b>GC Miscellaneous SW-846 8015B modified ug/l</b>					
07105	Methane	74-82-8	N.D.	5.0	1
<b>Metals SW-846 6010B mg/l</b>					
01750	Calcium	7440-70-2	165	0.0702	1
01754	Iron	7439-89-6	0.0722 J	0.0522	1
07058	Manganese	7439-96-5	0.0044 J	0.00084	1
01762	Potassium	7440-09-7	4.16	0.239	1
01767	Sodium	7440-23-5	99.6	2.17	5
<b>SW-846 6010B modified mg/l</b>					
02268	Ferric Iron	n.a.	0.072 J	0.052	1
<b>Wet Chemistry EPA 300.0 mg/l</b>					
00224	Chloride	16887-00-6	221	10.0	50
00228	Sulfate	14808-79-8	98.3	6.0	20
<b>EPA 351.2 mg/l</b>					
00217	Kjeldahl Nitrogen	n.a.	N.D.	0.50	1
<b>EPA 353.2 mg/l</b>					
00220	Nitrate Nitrogen	14797-55-8	7.6	0.080	2
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	1
<b>SM20 5310 C mg/l</b>					
00273	Total Organic Carbon	n.a.	1.6	0.50	1
<b>EPA 410.4 mg/l</b>					

**Sample Description: MW-114,101909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810029**  
**LLI Group # 1167047**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/19/2009 13:55 by DB Account Number: 11494

Submitted: 10/20/2009 08:55 Chevron  
 Reported: 11/04/2009 at 10:05 5000 State Route 128  
 Discard: 01/04/2010 HOOVEN OH 45033

MW114 SDG#: HVQ29-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Wet Chemistry EPA 410.4</b>					
04001	Chemical Oxygen Demand	n.a.	16.5 J	12.8	1
<b>SM20 2320 B</b>					
00202	Alkalinity to pH 4.5	n.a.	426	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1
<b>SM20 3500 Fe B modified</b>					
08344	Ferrous Iron	n.a.	N.D.	0.010	1
<b>SM20 4500 S2 D</b>					
00230	Sulfide	18496-25-8	N.D.	0.054	1
<b>SM20 4500NH3 B/C modified</b>					
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.20	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W092971AA	10/24/2009 05:03	Stephanie A Selis	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092971AA	10/24/2009 05:03	Stephanie A Selis	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09296A20A	10/27/2009 01:32	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	09296A20A	10/27/2009 01:32	Matthew S Woods	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	092940022A	10/22/2009 08:55	Karen R Rettew	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	092940022A	10/23/2009 13:49	Diane V Do	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	092930001A	10/21/2009 14:17	Dustin A Underkoffler	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	092941848005	10/22/2009 09:10	Denise K Connors	1
01750	Calcium	SW-846 6010B	1	092941848005	10/24/2009 15:58	John P Hook	1
01754	Iron	SW-846 6010B	1	092941848005	10/24/2009 15:58	John P Hook	1
07058	Manganese	SW-846 6010B	1	092941848005	10/24/2009 15:58	John P Hook	1
01762	Potassium	SW-846 6010B	1	092941848005	10/24/2009 15:58	John P Hook	1
01767	Sodium	SW-846 6010B	1	092941848005	10/27/2009 19:18	John P Hook	5
02268	Ferric Iron	SW-846 6010B modified	1	093002268010	10/27/2009 07:10	Jennifer L Moyer	1
00224	Chloride	EPA 300.0	1	09294196102A	10/26/2009 14:54	Ashley M Adams	50
00228	Sulfate	EPA 300.0	1	09294196102A	10/21/2009 22:27	Ashley M Adams	20



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-114,101909 Grab Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy

LLI Sample # WW 5810029  
LLI Group # 1167047  
OH

Project Name: Hooven Cincinnati Final Remedy

Collected: 10/19/2009 13:55 by DB

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

MW114 SDG#: HVQ29-07

## Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	09302108101A	10/30/2009 15:22	Joseph E McKenzie	1
00220	Nitrate Nitrogen	EPA 353.2	1	09298106101A	10/25/2009 12:15	Susan A Engle	2
00219	Nitrite Nitrogen	EPA 353.2	1	09293105101A	10/20/2009 21:43	Joseph E McKenzie	1
00273	Total Organic Carbon	SM20 5310 C	1	09296049502A	10/23/2009 05:56	James S Mathiot	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09302108101A	10/29/2009 16:25	Carolyn M Mastropietro	1
00202	Alkalinity to pH 4.5	SM20 2320 B	1	09295020201A	10/22/2009 14:33	Geraldine C Smith	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	09295020201A	10/22/2009 14:33	Geraldine C Smith	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	09293834401A	10/20/2009 20:10	Daniel S Smith	1
00230	Sulfide	SM20 4500 S2 D	1	09294023001A	10/21/2009 19:18	Geraldine C Smith	1
00221	Ammonia Nitrogen	SM20 4500NH3 B/C modified	1	09295022101A	10/22/2009 18:00	Luz M Groff	1
04001	Chemical Oxygen Demand	EPA 410.4	1	09295400101A	10/22/2009 09:00	Susan A Engle	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description: MW-114,101909 Filtered Grab Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5810030  
LLI Group # 1167047  
OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 10/19/2009 13:55 by DB Account Number: 11494  
Submitted: 10/20/2009 08:55 Chevron  
Reported: 11/04/2009 at 10:05 5000 State Route 128  
Discard: 01/04/2010 HOOVEN OH 45033

W114F SDG#: HVQ29-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Metals Dissolved</b>			<b>mg/l</b>	<b>mg/l</b>	
07035	Arsenic	7440-38-2	N.D.	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1
07058	Manganese	7439-96-5	0.0022 J	0.00084	1

### General Sample Comments

This sample was field filtered for metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07035	Arsenic	SW-846 6010B	1	092941848005	10/24/2009 16:02	John P Hook	1
07055	Lead	SW-846 6010B	1	092941848005	10/24/2009 16:02	John P Hook	1
07058	Manganese	SW-846 6010B	1	092941848005	10/24/2009 16:02	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	092941848005	10/22/2009 09:10	Denise K Connors	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** Trip Blank, 101909 Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy

**LLI Sample #** WW 5810031  
**LLI Group #** 1167047  
OH

**Project Name:** Hooven Cincinnati Final Remedy

Collected: 10/19/2009 15:15

Account Number: 11494

Submitted: 10/20/2009 08:55

Chevron

Reported: 11/04/2009 at 10:05

5000 State Route 128

Discard: 01/04/2010

HOOVEN OH 45033

W114T SDG#: HVQ29-09TB\*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
07582	Benzene	71-43-2	N.D.	ug/l 0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	N.D.	0.8	1
07582	Toluene	108-88-3	N.D.	0.7	1
07582	Xylene (Total)	1330-20-7	N.D.	0.8	1
<b>GC Volatiles SW-846 8015B</b>					
01635	TPH-GRO water C6-C10	n.a.	N.D.	ug/l 20	1

### General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W092971AA	10/24/2009 04:40	Stephanie A Selis	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	W092971AA	10/24/2009 04:40	Stephanie A Selis	1
01146	GC VOA Water Prep	SW-846 5030B	1	09296A20A	10/27/2009 00:48	Matthew S Woods	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09296A20A	10/27/2009 00:48	Matthew S Woods	1

## Quality Control Summary

 Client Name: Chevron  
 Reported: 11/04/09 at 10:05 AM

Group Number: 1167047

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: W092971AA	Sample number(s): 5810023, 5810025, 5810027, 5810029, 5810031							
Benzene	N.D.	0.5	ug/l	95	95	79-120	0	30
Chlorobenzene	N.D.	0.8	ug/l	99	98	80-120	1	30
Ethylbenzene	N.D.	0.8	ug/l	96	96	79-120	0	30
Toluene	N.D.	0.7	ug/l	96	96	79-120	0	30
Xylene (Total)	N.D.	0.8	ug/l	96	97	80-120	1	30
Batch number: W092981AA	Sample number(s): 5810027							
Ethylbenzene	N.D.	0.8	ug/l	97	93	79-120	5	30
Batch number: 09296A20A	Sample number(s): 5810029, 5810031							
TPH-GRO water C6-C10	N.D.	20.	ug/l	109	109	75-135	0	30
Batch number: 092940022A	Sample number(s): 5810029							
TPH-DRO water C10-C28	N.D.	32.	ug/l	86	100	56-122	15	20
Batch number: 092930001A	Sample number(s): 5810029							
Methane	N.D.	5.0	ug/l	115		80-120		
Batch number: 092941848005	Sample number(s): 5810024, 5810026, 5810028-5810030							
Arsenic	N.D.	0.0072	mg/l	103		89-115		
Calcium	N.D.	0.0702	mg/l	103		90-112		
Iron	N.D.	0.0522	mg/l	104		90-112		
Lead	N.D.	0.0069	mg/l	99		80-120		
Manganese	N.D.	0.00084	mg/l	101		90-110		
Potassium	N.D.	0.239	mg/l	100		85-115		
Sodium	N.D.	0.433	mg/l	106		87-114		
Batch number: 09293105101A	Sample number(s): 5810029							
Nitrite Nitrogen	N.D.	0.015	mg/l	92		90-110		
Batch number: 09294196102A	Sample number(s): 5810029							
Chloride	N.D.	0.20	mg/l	99		90-110		
Sulfate	N.D.	0.30	mg/l	94		89-110		
Batch number: 09296049502A	Sample number(s): 5810029							
Total Organic Carbon	N.D.	0.50	mg/l	99		91-113		
Batch number: 09298106101A	Sample number(s): 5810029							
Nitrate Nitrogen	N.D.	0.040	mg/l	103		90-110		
Batch number: 09302108101A	Sample number(s): 5810029							
Kjeldahl Nitrogen	N.D.	0.50	mg/l	102		90-110		
Batch number: 09293834401A	Sample number(s): 5810029							
Ferrous Iron	N.D.	0.010	mg/l	98	102	92-105	4	4

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

 Client Name: Chevron Group Number: 1167047  
 Reported: 11/04/09 at 10:05 AM

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 09294023001A Sulfide	N.D.	0.054	mg/l	99		90-110		
Batch number: 09295020201A Alkalinity to pH 4.5	N.D.	0.46	mg/l as CaCO3	100		98-103		
Batch number: 09295022101A Ammonia Nitrogen	N.D.	0.20	mg/l	90		85-105		
Batch number: 09295400101A Chemical Oxygen Demand				102		94-110		

### Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: W092971AA	Sample number(s): 5810023,5810025,5810027,5810029,5810031 UNSPK: 5810029								
Benzene	98		80-126						
Chlorobenzene	100		87-124						
Ethylbenzene	100		71-134						
Toluene	101		80-125						
Xylene (Total)	98		79-125						
Batch number: W092981AA	Sample number(s): 5810027 UNSPK: P811706								
Ethylbenzene	96		71-134						
Batch number: 09296A20A	Sample number(s): 5810029,5810031 UNSPK: P811658								
TPH-GRO water C6-C10	118		63-154						
Batch number: 092930001A	Sample number(s): 5810029 UNSPK: P809294								
Methane	-1833 (2)	-1833 (2)	35-157	0	20				
Batch number: 092941848005	Sample number(s): 5810024,5810026,5810028-5810030 UNSPK: P809039 BKG: P809039								
Arsenic	105	105	75-125	0	20	N.D.	N.D.	0 (1)	20
Calcium	-47 (2)	-26 (2)	75-125	0	20	375	371	1	20
Iron	98	98	75-125	0	20	N.D.	N.D.	0 (1)	20
Lead	84	83	75-125	1	20	N.D.	N.D.	0 (1)	20
Manganese	95	95	75-125	0	20	N.D.	N.D.	0 (1)	20
Potassium	102	102	75-125	0	20	16.4	16.6	1	20
Sodium	266 (2)	217 (2)	75-125	0	20	960	979	2	20
Batch number: 09293105101A	Sample number(s): 5810029 UNSPK: P809996 BKG: P809996								
Nitrite Nitrogen	90		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09294196102A	Sample number(s): 5810029 UNSPK: P808223 BKG: P808223								
Chloride	106		90-110			92.5	92.8	0	20
Sulfate	90		90-110			9.7	10.2	4 (1)	20

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron Group Number: 1167047  
 Reported: 11/04/09 at 10:05 AM

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup</u> <u>RPD</u> <u>Max</u>
Batch number: 09296049502A Total Organic Carbon	Sample number(s): 5810029 101	UNSPK: P808407 64-141	BKG: P808407 3.6		P808407 3.7		4 (1)	4
Batch number: 09298106101A Nitrate Nitrogen	Sample number(s): 5810029 93	UNSPK: P809996 90-110	BKG: P809996 N.D.		P809996 N.D.		0 (1)	2
Batch number: 09302108101A Kjeldahl Nitrogen	Sample number(s): 5810029 104	UNSPK: P812470 90-110	BKG: P812470 1.8		P812470 2.1		16 (1)	20
Batch number: 09293834401A Ferrous Iron	Sample number(s): 5810029	BKG: 5810029			N.D.	N.D.	0 (1)	10
Batch number: 09294023001A Sulfide	Sample number(s): 5810029 96	UNSPK: 5810029 69-133	BKG: 5810029 1	18	N.D.	N.D.	0 (1)	7
Batch number: 09295020201A Alkalinity to pH 4.5 Alkalinity to pH 8.3	Sample number(s): 5810029 101	UNSPK: P808789 64-130	BKG: P808789 85.5	2	85.5	85.9	0	4
Batch number: 09295022101A Ammonia Nitrogen	Sample number(s): 5810029 102 (2)	UNSPK: P809996 64-128	BKG: P809996 8	8	67.3	67.1	0	2
Batch number: 09295400101A Chemical Oxygen Demand	Sample number(s): 5810029 96	UNSPK: 5810029 90-110	BKG: P811599 1,220		1,220	1,220	0 (1)	5

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: PPL + Xylene (total) by 8260  
 Batch number: W092971AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5810023	97	90	91	94
5810025	95	91	92	96
5810027	94	88	91	93
5810029	97	90	88	87
5810031	98	93	89	87
Blank	96	90	90	88
LCS	95	91	93	94
LCSD	94	90	92	93
MS	95	89	92	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: 8260 Master Scan (water)  
 Batch number: W092981AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron  
Reported: 11/04/09 at 10:05 AM

Group Number: 1167047

### Surrogate Quality Control

Blank	95	90	90	89
LCS	94	93	91	95
LCSD	95	87	91	94
MS	96	89	90	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10  
Batch number: 09296A20A  
Trifluorotoluene-F

5810029	70
5810031	77
Blank	74
LCS	105
LCSD	100
MS	103

Limits: 63-135

Analysis Name: Volatile Headspace Hydrocarbon  
Batch number: 092930001A  
Propene

5810029	70
Blank	118
LCS	111
MS	74
MSD	65

Limits: 42-131

Analysis Name: TPH-DRO water C10-C28  
Batch number: 092940022A  
Orthoterphenyl

5810029	88
Blank	79
LCS	93
LCSD	106

Limits: 54-127

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only

Acct. # 11494 Group# 1167047 Sample # 5810023-31

**COC # 211759**

*cooler temp = 1.30C*

Please print. Instructions on reverse side correspond with circled numbers.

<p><b>1</b> Client: <u>CHEVON</u> Acct. #: _____</p> <p>Project Name/#: <u>2ND SEMI ANNUAL 2009</u> PWSID # <u>MWAL17000 M20</u></p> <p>Project Manager: <u>DOUG LAM</u> P.O.#: _____</p> <p>Sampler: <u>DALE BARRETT</u> Quote #: _____</p> <p>Name of state where samples were collected: <u>OHIO</u></p>				<p><b>4</b> Matrix</p> <p><input type="checkbox"/> Potable <input type="checkbox"/> Check if Applicable</p> <p><input type="checkbox"/> Water <input type="checkbox"/> WDES</p> <p><input type="checkbox"/> Other</p>		<p><b>5</b> Analyses Requested</p> <p style="text-align: center;">Preservation Codes</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">VOC's</td> <td style="width: 10%;">Pb</td> <td style="width: 10%;">As</td> <td style="width: 10%;">Cd</td> <td style="width: 10%;">Cr</td> <td style="width: 10%;">Cu</td> <td style="width: 10%;">Fe</td> <td style="width: 10%;">Mn</td> <td style="width: 10%;">Ni</td> <td style="width: 10%;">Zn</td> </tr> <tr> <td style="text-align: center;">X</td> </tr> </table>					VOC's	Pb	As	Cd	Cr	Cu	Fe	Mn	Ni	Zn	X	X	X	X	X	X	X	X	X	X	<p><b>6</b> For Lab Use Only</p> <p>FSC: _____</p> <p>SCR#: _____</p> <p>Preservation Codes</p> <p>H=HCl T=Thiosulfate</p> <p>N=HNO<sub>3</sub> B=NaOH</p> <p>S=H<sub>2</sub>SO<sub>4</sub> O=Other</p>																																																																
VOC's	Pb	As	Cd	Cr	Cu	Fe	Mn	Ni	Zn																																																																																						
X	X	X	X	X	X	X	X	X	X																																																																																						
<p><b>2</b> Sample Identification</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample ID</th> <th>Date Collected</th> <th>Time Collected</th> <th>Grab</th> <th>Composites</th> <th>Soil</th> <th>Water</th> <th>Other</th> <th>Total # of Containers</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>MW-142, 101309</td> <td>10-13-09</td> <td>0905</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td rowspan="6" style="vertical-align: top;">SEE ATTACHED ANALYTE LIST</td> </tr> <tr> <td>MW-141, 101309</td> <td>10-13-09</td> <td>0940</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">4</td> </tr> <tr> <td>MW-22, 101309</td> <td>10-13-09</td> <td>1500</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">4</td> </tr> <tr> <td>MW-114, 101909</td> <td>10-19-09</td> <td>1355</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">21</td> </tr> <tr> <td>TRIP BLANK, 101909</td> <td>10-19-09</td> <td>1515</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">2</td> </tr> <tr> <td>TRIP BLANK, 101909</td> <td>10-19-09</td> <td>1515</td> <td style="text-align: center;">X</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td></td> <td style="text-align: center;">2</td> </tr> </tbody> </table>				Sample ID	Date Collected	Time Collected	Grab	Composites	Soil	Water	Other	Total # of Containers	Remarks	MW-142, 101309	10-13-09	0905	X		X			4	SEE ATTACHED ANALYTE LIST	MW-141, 101309	10-13-09	0940	X		X			4	MW-22, 101309	10-13-09	1500	X		X			4	MW-114, 101909	10-19-09	1355	X		X			21	TRIP BLANK, 101909	10-19-09	1515	X		X			2	TRIP BLANK, 101909	10-19-09	1515	X		X			2	<p><b>3</b> Composites</p>		<p><b>5</b> Analyses Requested</p> <p style="text-align: center;">Preservation Codes</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">VOC's</td> <td style="width: 10%;">Pb</td> <td style="width: 10%;">As</td> <td style="width: 10%;">Cd</td> <td style="width: 10%;">Cr</td> <td style="width: 10%;">Cu</td> <td style="width: 10%;">Fe</td> <td style="width: 10%;">Mn</td> <td style="width: 10%;">Ni</td> <td style="width: 10%;">Zn</td> </tr> <tr> <td style="text-align: center;">X</td> </tr> </table>					VOC's	Pb	As	Cd	Cr	Cu	Fe	Mn	Ni	Zn	X	X	X	X	X	X	X	X	X	X
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X	X	X	X	X	X	X	X	X	X																																																																																						
<p><b>7</b> Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush</p> <p>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)</p> <p>Date results are needed: _____</p> <p>Rush results requested by (please circle): Phone Fax <u>E-mail</u></p> <p>Phone #: <u>513 353 1323</u> Fax #: <u>513 353 4664</u></p> <p>E-mail address: <u>MITCHELL@TRIPRO.COM</u></p>				<p>Relinquished by: <u>Dale Barrett</u></p> <p>Date: <u>10-19-09</u> Time: <u>1600</u></p>		<p>Received by: _____</p> <p>Date: _____ Time: _____</p>		<p><b>9</b></p>																																																																																							
<p><b>8</b> Data Package Options (please circle if required)</p> <p>Type I (validation/NJ Reg) TX TRRP-13 Yes No</p> <p>Type II (Tier II) MA MCP CT RCP</p> <p>Type III (Reduced NJ) Site-specific QC (MS/MSD/Dup)? Yes No</p> <p>Type IV (CLP SOW) (If yes, indicate QC sample and submit triplicate volume.)</p> <p>Type VI (Raw Data Only) Internal COC Required? Yes / No _____</p>				<p>Relinquished by: _____</p> <p>Date: _____ Time: _____</p>		<p>Received by: _____</p> <p>Date: _____ Time: _____</p>		<p>Relinquished by: _____</p> <p>Date: _____ Time: _____</p>																																																																																							

Analytical Requests for Groundwater  
Chevron Cincinnati Facility, Hooven, Ohio

Volatile Organics

Benzene  
Chlorobenzene  
Ethylbenzene  
Toluene  
Xylenes (total)

Dissolved Metals- field filtered

Arsenic  
Lead

TPH

GRO  
DRO

Monitored Natural Attenuation

Alkalinity  
Calcium  
Chemical Oxygen Demand  
Chloride  
Iron (II) and Iron (III)  
Dissolved and Total Manganese  
Methane  
Nitrate Nitrogen  
Nitrite Nitrogen  
Ammonia Nitrogen  
Total Kjeldahl Nitrogen  
Potassium  
Sodium  
Sulfate  
~~Sulfite~~ Sulfide  
Total Organic Carbon

KAL 1885 per Matt Mitchell  
10/20/09

**Environmental Sample Administration  
Receipt Documentation Log**

Client/Project: Chevron  
 Date of Receipt: 10/20/09  
 Time of Receipt: 0855  
 Source Code: 50-1  
 Unpacker Emp. No.: 1454

Shipping Container Sealed:  YES NO

Custody Seal Present \* :  YES NO

\* Custody seal was intact unless otherwise noted in the discrepancy section

Package:  Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	0429951	1.3 <sup>c</sup>	TB	WI	Y	L	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
<i>[Signature]</i>	10/20/09	0950	Unpacking
<i>[Signature]</i>	10/20/09	1000	Place in Storage or <input checked="" type="radio"/> Entry
			Entry
			Entry

## Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

### Organic Qualifiers

<b>A</b>	TIC is a possible aldol-condensation product
<b>B</b>	Analyte was also detected in the blank
<b>C</b>	Pesticide result confirmed by GC/MS
<b>D</b>	Compound quantitated on a diluted sample
<b>E</b>	Concentration exceeds the calibration range of the instrument
<b>J</b>	Estimated value
<b>N</b>	Presumptive evidence of a compound (TICs only)
<b>P</b>	Concentration difference between primary and confirmation columns >25%
<b>U</b>	Compound was not detected
<b>X,Y,Z</b>	Defined in case narrative

### Inorganic Qualifiers

<b>B</b>	Value is <CRDL, but ≥IDL
<b>E</b>	Estimated due to interference
<b>M</b>	Duplicate injection precision not met
<b>N</b>	Spike amount not within control limits
<b>S</b>	Method of standard additions (MSA) used for calculation
<b>U</b>	Compound was not detected
<b>W</b>	Post digestion spike out of control limits
<b>*</b>	Duplicate analysis not within control limits
<b>+</b>	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

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