

## ANALYTICAL RESULTS

Prepared for:

Chevron  
5000 State Route 128  
HOOVEN OH 45033

Prepared by:

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

December 04, 2009

Project: Hooven Cincinnati Final Remedy

Samples arrived at the laboratory on Friday, November 20, 2009. The PO# for this group is 0015039270 and the release number is 50008931. The group number for this submittal is 1172039.

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-93S,111909 Grab Water	5844020
MW-93S,111909 Filtered Grab Water	5844021
MW-129,111909 Grab Water	5844022
MW-129,111909 Filtered Grab Water	5844023
Trip Blank,111909 Water	5844024
Field Blank,111909 Grab Water	5844025

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,



Parker Lindstrom  
Senior Chemist



# 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-93S, 111909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844020**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 10:10 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

MW93S SDG#: HVQ33-01

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	1 J	0.5	1
07582	Chlorobenzene	108-90-7	N.D.	0.8	1
07582	Ethylbenzene	100-41-4	3 J	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.	570	20	1
<b>GC Extractable TPH SW-846 8015B ug/l</b>					
08269	TPH-DRO water C10-C28	n.a.	1,700	30	1
The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					
<b>GC Miscellaneous SW-846 8015B modified ug/l</b>					
07105	Methane	74-82-8	1,200	25	5
<b>Metals SW-846 6010B mg/l</b>					
01750	Calcium	7440-70-2	204	0.0702	1
01754	Iron	7439-89-6	11.3	0.0522	1
07058	Manganese	7439-96-5	1.05	0.00084	1
01762	Potassium	7440-09-7	4.09	0.239	1
01767	Sodium	7440-23-5	53.9	0.433	1
<b>SW-846 6010B modified mg/l</b>					
02268	Ferric Iron	n.a.	N.D.	0.25	1
<b>Wet Chemistry EPA 300.0 mg/l</b>					
00224	Chloride	16887-00-6	131	10.0	50
00228	Sulfate	14808-79-8	144	15.0	50
<b>EPA 351.2 mg/l</b>					
00217	Kjeldahl Nitrogen	n.a.	0.76 J	0.50	1
<b>EPA 353.2 mg/l</b>					
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	1
<b>SM20 5310 C mg/l</b>					
00273	Total Organic Carbon	n.a.	4.8	0.50	1
<b>EPA 410.4 mg/l</b>					
04001	Chemical Oxygen Demand	n.a.	36.9 J	12.8	1

**Sample Description: MW-93S,111909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844020**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 10:10 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

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Discard: 02/03/2010

HOOVEN OH 45033

MW93S SDG#: HVQ33-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>Wet Chemistry</b>					
		<b>SM20 2320 B</b>	<b>mg/l as CaCO3</b>	<b>mg/l as CaCO3</b>	
00202	Alkalinity to pH 4.5	n.a.	445	0.46	1
00201	Alkalinity to pH 8.3	n.a.	N.D.	0.46	1
		<b>SM20 3500 Fe B modified</b>	<b>mg/l</b>	<b>mg/l</b>	
08344	Ferrous Iron	n.a.	11.6	0.25	25
		<b>SM20 4500 S2 D</b>	<b>mg/l</b>	<b>mg/l</b>	
00230	Sulfide	18496-25-8	0.10 J	0.054	1
		<b>SM20 4500NH3 B/C modified</b>	<b>mg/l</b>	<b>mg/l</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	N093351AA	12/01/2009 13:14	Chelsea B Eastep	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	N093351AA	12/01/2009 13:14	Chelsea B Eastep	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09327A07A	11/23/2009 17:31	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	09327A07A	11/23/2009 17:31	Elizabeth J Marin	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	093240010A	11/20/2009 15:15	Cody R Hanna	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	093240010A	11/24/2009 17:07	Diane V Do	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	093270004A	11/24/2009 09:15	Dustin A Underkoffler	5
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093291848006	11/28/2009 06:15	Denise K Connors	1
01750	Calcium	SW-846 6010B	1	093291848006	12/03/2009 18:24	John P Hook	1
01754	Iron	SW-846 6010B	1	093291848006	12/03/2009 18:24	John P Hook	1
07058	Manganese	SW-846 6010B	1	093291848006	12/03/2009 18:24	John P Hook	1
01762	Potassium	SW-846 6010B	1	093291848006	12/03/2009 18:24	John P Hook	1
01767	Sodium	SW-846 6010B	1	093291848006	12/03/2009 18:24	John P Hook	1
02268	Ferric Iron	SW-846 6010B modified	1	093372268001	12/03/2009 21:16	Max E Snavelly	1
00224	Chloride	EPA 300.0	1	09329196602B	11/26/2009 09:23	Ashley M Adams	50
00228	Sulfate	EPA 300.0	1	09329196602B	11/26/2009 09:23	Ashley M Adams	50
00217	Kjeldahl Nitrogen	EPA 351.2	1	09333108101A	11/30/2009 17:49	Joseph E McKenzie	1
00220	Nitrate Nitrogen	EPA 353.2	1	09331106101B	11/27/2009 10:33	Susan A Engle	1
00219	Nitrite Nitrogen	EPA 353.2	1	09324105101A	11/20/2009 17:57	Joseph E McKenzie	1

**Sample Description: MW-93S,111909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844020**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 10:10 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

MW93S SDG#: HVQ33-01

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00273	Total Organic Carbon	SM20 5310 C	1	09334049503B	11/30/2009 03:42	James S Mathiot	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	09333108101A	11/29/2009 16:10	Carolyn M Mastropietro	1
00202	Alkalinity to pH 4.5	SM20 2320 B	1	09334020202A	11/30/2009 17:25	Geraldine C Smith	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	09334020202A	11/30/2009 17:25	Geraldine C Smith	1
08344	Ferrous Iron	SM20 3500 Fe B modified	1	09325834401A	11/21/2009 07:40	Daniel S Smith	25
00230	Sulfide	SM20 4500 S2 D	1	09329023001A	11/25/2009 12:21	Geraldine C Smith	1
00221	Ammonia Nitrogen	SM20 4500NH3 B/C modified	1	09335022101A	12/01/2009 17:00	Luz M Groff	1
04001	Chemical Oxygen Demand	EPA 410.4	1	09334400101B	11/30/2009 08:20	Susan A Engle	1



# Analysis Report

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**Sample Description: MW-93S,111909 Filtered Grab Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844021  
LLI Group # 1172039  
OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 10:10 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

W93SF SDG#: HVQ33-02

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	N.D.	0.0072	1
07055	Lead	7439-92-1	N.D.	0.0069	1
07058	Manganese	7439-96-5	1.04	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	093291848006	12/03/2009 18:27	John P Hook	1
07055	Lead	SW-846 6010B	1	093291848006	12/03/2009 18:27	John P Hook	1
07058	Manganese	SW-846 6010B	1	093291848006	12/03/2009 18:27	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093291848006	11/28/2009 06:15	Denise K Connors	1

**Sample Description: MW-129,111909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844022**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 14:05 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

MW129 SDG#: HVQ33-03

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	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

### 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	N093351AA	12/01/2009 12:51	Chelsea B Eastep	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	N093351AA	12/01/2009 12:51	Chelsea B Eastep	1



# Analysis Report

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**Sample Description: MW-129,111909 Filtered Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844023**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 14:05 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

W129F SDG#: HVQ33-04

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	N.D.	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	093291848006	12/03/2009 18:30	John P Hook	1
07055	Lead	SW-846 6010B	1	093291848006	12/03/2009 18:30	John P Hook	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	093291848006	11/28/2009 06:15	Denise K Connors	1



# Analysis Report

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**Sample Description:** Trip Blank, 111909 Water  
2nd Semi-Annual 2009-Cincinnati Final Remedy

**LLI Sample #** WW 5844024  
**LLI Group #** 1172039  
OH

**Project Name:** Hooven Cincinnati Final Remedy

Collected: 11/19/2009 14:40

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

129TB SDG#: HVQ33-05TB

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.	0.5 ug/l	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.	20 ug/l	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	N093351AA	12/01/2009 12:04	Chelsea B Eastep	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	N093351AA	12/01/2009 12:04	Chelsea B Eastep	1
01146	GC VOA Water Prep	SW-846 5030B	1	09327A07A	11/23/2009 15:23	Elizabeth J Marin	1
01635	TPH-GRO water C6-C10	SW-846 8015B	1	09327A07A	11/23/2009 15:23	Elizabeth J Marin	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: Field Blank, 111909 Grab Water**  
**2nd Semi-Annual 2009-Cincinnati Final Remedy**

**LLI Sample # WW 5844025**  
**LLI Group # 1172039**  
**OH**

**Project Name: Hooven Cincinnati Final Remedy**

Collected: 11/19/2009 13:50 by JH

Account Number: 11494

Submitted: 11/20/2009 09:00

Chevron

Reported: 12/04/2009 at 08:16

5000 State Route 128

Discard: 02/03/2010

HOOVEN OH 45033

129FB SDG#: HVQ33-06FB\*

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	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

### 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	N093351AA	12/01/2009 12:27	Chelsea B Eastep	1
07582	PPL + Xylene (total) by 8260	SW-846 8260B	1	N093351AA	12/01/2009 12:27	Chelsea B Eastep	1

## Quality Control Summary

 Client Name: Chevron  
 Reported: 12/04/09 at 08:16 AM

Group Number: 1172039

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: N093351AA	Sample number(s): 5844020, 5844022, 5844024-5844025							
Benzene	N.D.	0.5	ug/l	104	105	79-120	1	30
Chlorobenzene	N.D.	0.8	ug/l	104	104	80-120	1	30
Ethylbenzene	N.D.	0.8	ug/l	105	106	79-120	2	30
Toluene	N.D.	0.7	ug/l	103	105	79-120	1	30
Xylene (Total)	N.D.	0.8	ug/l	102	103	80-120	2	30
Batch number: 09327A07A	Sample number(s): 5844020, 5844024							
TPH-GRO water C6-C10	N.D.	20.	ug/l	100	91	75-135	10	30
Batch number: 093240010A	Sample number(s): 5844020							
TPH-DRO water C10-C28	N.D.	32.	ug/l	99	94	56-122	5	20
Batch number: 093270004A	Sample number(s): 5844020							
Methane	N.D.	5.0	ug/l	105		80-120		
Batch number: 093291848006	Sample number(s): 5844020-5844021, 5844023							
Arsenic	N.D.	0.0072	mg/l	98		89-115		
Calcium	N.D.	0.0702	mg/l	103		90-112		
Iron	N.D.	0.0522	mg/l	106		90-112		
Lead	N.D.	0.0069	mg/l	99		80-120		
Manganese	N.D.	0.00084	mg/l	97		90-110		
Potassium	N.D.	0.239	mg/l	99		85-115		
Sodium	N.D.	0.433	mg/l	100		87-114		
Batch number: 09324105101A	Sample number(s): 5844020							
Nitrite Nitrogen	N.D.	0.015	mg/l	95		90-110		
Batch number: 09329196602B	Sample number(s): 5844020							
Chloride	N.D.	0.20	mg/l	99		90-110		
Sulfate	N.D.	0.30	mg/l	94		89-110		
Batch number: 09331106101B	Sample number(s): 5844020							
Nitrate Nitrogen	N.D.	0.040	mg/l	98		90-110		
Batch number: 09333108101A	Sample number(s): 5844020							
Kjeldahl Nitrogen	N.D.	0.50	mg/l	97		90-110		
Batch number: 09334049503B	Sample number(s): 5844020							
Total Organic Carbon	N.D.	0.50	mg/l	104		91-113		
Batch number: 09325834401A	Sample number(s): 5844020							
Ferrous Iron	N.D.	0.010	mg/l	98		92-105		
Batch number: 09329023001A	Sample number(s): 5844020							
Sulfide	N.D.	0.054	mg/l	104		90-110		

\*- 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: 1172039  
 Reported: 12/04/09 at 08:16 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: 09334020202A Alkalinity to pH 4.5	N.D.	0.46	5844020 mg/l as CaCO3	100		98-103		
Batch number: 09334400101B Chemical Oxygen Demand			Sample number(s): 5844020	100		94-110		
Batch number: 09335022101A Ammonia Nitrogen	N.D.	0.20	5844020 mg/l	92	91	85-105	1	5

### 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: N093351AA	Sample number(s): 5844020, 5844022, 5844024-5844025 UNSPK: P849433								
Benzene	108		80-126						
Chlorobenzene	106		87-124						
Ethylbenzene	113		71-134						
Toluene	106		80-125						
Xylene (Total)	106		79-125						
Batch number: 09327A07A TPH-GRO water C6-C10	Sample number(s): 5844020, 5844024 UNSPK: P843525								
	109		63-154						
Batch number: 093270004A Methane	Sample number(s): 5844020 UNSPK: P837843								
	83	67	35-157	7	20				
Batch number: 093291848006	Sample number(s): 5844020-5844021, 5844023 UNSPK: P844200 BKG: P844200								
Arsenic	102	104	75-125	1	20	N.D.	N.D.	0 (1)	20
Calcium	83 (2)	74 (2)	75-125	1	20	45.4	45.2	0	20
Iron	101	100	75-125	1	20	0.141 J	0.145 J	2 (1)	20
Lead	99	100	75-125	1	20	N.D.	N.D.	0 (1)	20
Manganese	94	95	75-125	1	20	0.0793	0.0785	1	20
Potassium	95	94	75-125	1	20	18.5	18.4	0	20
Sodium	96	95	75-125	0	20	38.6	38.5	0	20
Batch number: 09324105101A Nitrite Nitrogen	Sample number(s): 5844020 UNSPK: P844001 BKG: P844001								
	106		90-110			N.D.	N.D.	0 (1)	20
Batch number: 09329196602B Chloride Sulfate	Sample number(s): 5844020 UNSPK: P846559 BKG: P846559								
	121*		90-110			11.2	10.5	6	20
	87*		90-110			18.0	6.2	97* (1)	20
Batch number: 09331106101B Nitrate Nitrogen	Sample number(s): 5844020 UNSPK: P843700 BKG: P843700								
	101		90-110			N.D.	N.D.	0 (1)	2
Batch number: 09333108101A Kjeldahl Nitrogen	Sample number(s): 5844020 UNSPK: P835665 BKG: P835665								
	89*		90-110			N.D.	N.D.	0 (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: 1172039  
 Reported: 12/04/09 at 08:16 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>RPD</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: 09334049503B Total Organic Carbon	110		64-141	UNSPK:	P844006	BKG: P844006 7.2	7.1	1	4
Batch number: 09325834401A Ferrous Iron	95	94	66-130	1	6	4.0	4.0	1 (1)	10
Batch number: 09329023001A Sulfide	112	105	69-133	5	18	7.5	7.5	1	7
Batch number: 09334020202A Alkalinity to pH 4.5 Alkalinity to pH 8.3	99	99	64-130	0	2	62.8 N.D.	63.3 N.D.	1 0 (1)	4 4
Batch number: 09334400101B Chemical Oxygen Demand	92		90-110	UNSPK:	P846093	BKG: P846093 34.7	J 30.2	J 14* (1)	5
Batch number: 09335022101A Ammonia Nitrogen				UNSPK:	P848604	BKG: P848604 6.4	6.3	1	2

### 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: N093351AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5844020	98	99	100	102
5844022	99	98	99	97
5844024	98	100	99	97
5844025	99	100	99	97
Blank	97	98	100	97
LCS	98	103	101	101
LCSD	98	99	101	100
MS	98	100	101	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO water C6-C10  
 Batch number: 09327A07A  
 Trifluorotoluene-F

5844020	112
5844024	100
Blank	102
LCS	112
LCSD	112
MS	114

\*- 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: 12/04/09 at 08:16 AM

Group Number: 1172039

### Surrogate Quality Control

Limits: 63-135

Analysis Name: TPH-DRO water C10-C28  
Batch number: 093240010A  
Orthoterphenyl

---

5844020	128*
Blank	115
LCS	117
LCSD	111

---

Limits: 54-127

Analysis Name: Volatile Headspace Hydrocarbon  
Batch number: 093270004A  
Propene

---

5844020	75
Blank	103
LCS	109
MS	61
MSD	71

---

Limits: 42-131

\*- 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# 1172039 Sample # 5844020-25

**COC # 211764**

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

<p><b>1</b> Client: <u>CHEVRON</u> Acct. #: <u>11494</u></p> <p>Project Name/#: <u>2nd Semi Annual 2009</u> PWSID # <u>MWACH1700M20</u></p> <p>Project Manager: <u>DOUG LAM</u> P.O.#: _____</p> <p>Sampler: <u>JOHN HALL</u> Quote #: _____</p> <p>Name of state where samples were collected: <u>OHIO</u></p>				<p><b>4</b> Matrix</p> <p>Soil <input type="checkbox"/> Water <input type="checkbox"/> Other <input type="checkbox"/></p> <p> <input type="checkbox"/> Potable  <input type="checkbox"/> Check for  <input type="checkbox"/> MMS  <input type="checkbox"/> Analysis         </p>		<p><b>5</b> Analyses Requested</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6">Preservation Codes</th> </tr> <tr> <td style="text-align: center;">VOL'S</td> <td style="text-align: center;">POTAS</td> <td style="text-align: center;">MNA</td> <td style="text-align: center;">TPH</td> <td style="text-align: center;">TPH</td> <td style="text-align: center;">DRA</td> </tr> <tr> <td style="text-align: center;">21</td> <td style="text-align: center;">4</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">X</td> </tr> </table>						Preservation Codes						VOL'S	POTAS	MNA	TPH	TPH	DRA	21	4	2	2	3	X	<p><b>For Lab Use Only</b></p> <p>FSC: _____</p> <p>SCR#: _____</p> <p><b>6</b> Temperature of samples upon receipt (if requested)</p>																																					
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<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 4604</u></p> <p>E-mail address: <u>MMITCHELL@TRUPRO.COM</u></p>				<p>Relinquished by: <u>Dale Barrett</u> Date <u>11-19-09</u> Time <u>1500</u></p> <p>Relinquished by: _____ Date _____ Time _____</p>		<p>Received by: _____ Date _____ Time _____</p> <p>Received by: <u>Mary Benkeed</u> Date <u>11/20/09</u> Time <u>0900</u></p>																																																													
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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  
Sulfide  
Total Organic Carbon

**Environmental Sample Administration  
Receipt Documentation Log**

Client/Project: Chevron (OH)  
 Date of Receipt: 11/20/09  
 Time of Receipt: 0900  
 Source Code: 50-1  
 Unpacker Emp. No.: 1607

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	3.5°C	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
Mary Beth Lord	11/20/09	1041	Unpacking
Dal Westlund	11/20/09	1045	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.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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