



Julie Justus
Regulatory, Health &
Environment Specialist
MCBU
Piceance
Oil Shale

**Chevron North America
Exploration and Production Company**
(A Chevron U.S.A. Inc. Division)
760 Horizon Drive Suite 401
Grand Junction, Colorado 81506
Telephone: 970.257.6042
Email: jjustus@chevron.com

December 21, 2012

Mr. Alex Fischer
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

RE: Wilson Creek Facility Landfarm (Facility ID 149002)
Annual Report of Operations

Dear Mr. Fischer,

As required by Rule 908 f. of the Colorado Oil and Gas Conservation Commission (COGCC) rules (2 CCR 404-1), please find attached the Annual Report of Operations for the Wilson Creek Facility Landfarm (Facility ID 149002).

The attached report consists of:

- A completed Sundry Notice (Form 4)
- A brief narrative description of the facility and current operations
- The waste application log for 2011 - 2012
- Results of periodic soil sampling
- Results of the initial groundwater well sampling

The annual report submitted in 2011 was submitted in April 2011 and covered 2010 operations. In 2011, the COGCC approved and Chevron implemented certain modifications to the landfarm – a portion of the landfarm was lined and three groundwater monitoring wells were installed. These changes necessitated a modification of the Landfarm Operating Procedures Manual, a copy of which is being sent to you concurrently under separate cover. The delay in completing these changes delayed the generation of the Annual Report of Operations. Consequently, this report covers the period January 2011 – December 2012 to keep the COGCC apprised of the most current data available.

If you have any questions concerning this site, please contact me at 970-257-6042.

Julie Justus

A handwritten signature in purple ink that reads "Julie Justus".

Regulatory, Health & Environment Specialist
Chevron USA

FORM
4
Rev 12/05

State of Colorado

Oil and Gas Conservation Commission

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



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form). Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b).

RECEIVED
12/21/2012

1. OGCC Operator Number: 16700	4. Contact Name: Julie Justus	Complete the Attachment Checklist OP OGCC
2. Name of Operator: Chevron U.S.A. Inc.	Phone: 970-257-6042	
3. Address: 760 Horizon Drive	Fax: 970-245-6489	
City: Grand Junction State: CO Zip: 81506		
5. API Number: 05- NA	OGCC Facility ID Number: 149002	Survey Plat
6. Well/Facility Name: Wilson Creek Landfarm	7. Well/Facility Number:	Directional Survey
8. Location (Qtr/Sec, Twp, Rng, Meridian): NENW, Sec 35, T3N, R94W, 6		Surface Eqmpt Diagram
9. County: Rio Blanco	10. Field Name: Wilson Creek	Technical Info Page
11. Federal, Indian or State Lease Number:		Other Annual Report <input checked="" type="checkbox"/>

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)	
Change of Surface Footage from Exterior Section Lines:	<input type="checkbox"/> FNL/FSL <input type="checkbox"/> FEL/FWL
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> <input type="checkbox"/> attach directional survey
Bottomhole location Qtr/Sec, Twp, Rng, Mer	
Latitude	Distance to nearest property line
Longitude	Distance to nearest bldg, public rd, utility or RR
Ground Elevation	Distance to nearest lease line
	Is location in a High Density Area (rule 603b)? Yes/No <input type="checkbox"/>
	Distance to nearest well same formation
	Surface owner consultation date:
GPS DATA:	
Date of Measurement	PDOP Reading
	Instrument Operator's Name
<input type="checkbox"/> CHANGE SPACING UNIT	
Formation	Formation Code
Spacing order number	Unit Acreage
	Unit configuration
<input type="checkbox"/> Remove from surface bond	
Signed surface use agreement attached	
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):	
Effective Date:	
Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	
<input type="checkbox"/> CHANGE WELL NAME	
From:	NUMBER
To:	
Effective Date:	
<input type="checkbox"/> ABANDONED LOCATION:	
Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date Ready for Inspection:	
<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS	
Date well shut in or temporarily abandoned:	
Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
MIT required if shut in longer than two years. Date of last MIT	
<input type="checkbox"/> SPUD DATE:	
<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK	
*submit cbl and cement job summaries	
Method used	Cementing tool setting/perf depth
Cement volume	Cement top
Cement bottom	Date
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.	
Final reclamation will commence on approximately	
<input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent		<input type="checkbox"/> Report of Work Done
Approximate Start Date:		Date Work Completed:
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)		
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input checked="" type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: Rule 908 f Annual Report	for Spills and Releases

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

Signed: Julie Justus
Print Name: Julie JustusDate: 12/21/2012 Email: jjustus@chevron.com
Title: Regulatory, Health & Environment Specialist

COGCC Approved: Alex Fischer

Title: Env. Supervisor Date: 12/27/2012
Western Colorado

CONDITIONS OF APPROVAL, IF ANY:

WILSON CREEK FACILITY LANDFARM

ANNUAL REPORT OF OPERATIONS

**Centralized E&P Waste Management Facility
ID 149002**

**CHEVRON U.S.A. INC.
760 Horizon Drive
Grand Junction, CO 81506**



December 2012

I. Introduction

The Wilson Creek Field is located in various sections of Townships 2 and 3 North, Range 94 West, of the 6th Principle Meridian in Rio Blanco County, Colorado. The town of Meeker, Colorado, which lies approximately 11 miles south of the facility, is the nearest population center. The Wilson Creek Field can be reached from Meeker by traveling approximately 0.5 miles west on State Highway 64, then traveling approximately 7 miles north of County Road 7, and finally following County Road 9 approximately 7 miles to the facility.

The Wilson Creek Field is an onshore production facility, owned and operated by Chevron. The Wilson Creek Field is located in rugged mountainous terrain consisting of steep canyon walls and deep gorges. Vehicular travel is restricted to roadways and foot travel off roadways is difficult. The Landfarm is located in the NE NW Qtr-Qtr, Section 35, T3N, R94W, Sixth PM on a level area adjacent to a lease road.

Landfarming, also known as land treatment or land application, is an above-ground remediation technology for soils that reduces concentrations of petroleum constituents through biodegradation. For Chevron's Wilson Creek Production Operations, this technology involves spreading contaminated soils or other E&P waste in a thin layer on the ground surface, shallow tilling to mix with native soils, and stimulating aerobic microbial activity within the soils through aeration and the addition of fertilizers and moisture. The enhanced microbial activity results in degradation of adsorbed petroleum product constituents through microbial respiration. Chevron's goal is to remediate certain E&P wastes as they are produced, eliminating the need for off-site disposal of these wastes.

The original landfarm was lined and was approximately 50' x 70'. An unlined expansion of the original landfarm was approved in July 2003 by the COGCC which enlarged the landfarm to approximately 1.36 acres. As part of the expansion approval, the COGCC directed that no 'wet' or de-watered waste was to be applied to any unlined section of the landfarm. In 2011, a new liner and groundwater monitoring wells were installed per the approved sundry notice dated October 29, 2010.

II. Landfarm Operations

Two attachments are submitted with this report –

- Wilson Creek Landfarm Application Log, January 2011 – current.
- Landfarm Soil Sampling Results, Summary Table
- Landfarm Soil Sample Reports – June and October 2012
- Groundwater Monitoring Sample Report – June 2012

The sampling data show that the levels of arsenic are elevated above COGCC threshold levels. As with most areas of Colorado, native arsenic levels around Wilson Creek are above the COGCC threshold. Before Chevron moves soil off the landfarm for beneficial use, alternative arsenic thresholds will be established based on background concentrations as allowed by the COGCC guidance. The sampling data also show that pH amendments were successful (compare October 2011 with June 2012 results) in bringing the pH and electrical conductivity measurements to within (or very close to) COGCC standards. Because of the nature of the sulfa-treat waste, pH adjustments will likely be needed on a periodic basis.

In the fourth quarter of 2011, three groundwater monitoring wells were installed as a condition of the most recent sundry notice approval (for installation of a new liner under a portion of the landfarm). Initial sampling was conducted in June 2012 and all parameters are within COGCC Table 910-1 standards.

Attached is the detailed Landfarm Waste Log for 2011 and 2012 to date. A total of 165 tons of E&P waste was applied to the landfarm in 2011 and 267 tons so far in 2012. The waste streams originate from a variety of upstream sources, but are primarily from:

- Spent Sulfa-Treat catalyst (composed of Montmorillonite and other silicates, iron oxide, and absorbed hydrocarbons and sulfate)
- Oily dirt from incidental spills

Other than the issues reported above, no changes or modifications have been made in the waste streams, processes, or procedures since the last Annual Report of Operations. No upsets, spills, or discharges from the landfarm occurred in 2011 or 2012.

The primary landfarm contact has been changed from Mr. Richard Carroll to Ms. Julie Justus (contact information provided below):

Julie Justus
Regulatory, Health & Environment Specialist

760 Horizon Drive
Grand Junction, CO 81506
Office: 970-257-6042
Mobile: 970-589-5036
FAX: 970-245-6489
Email: jjustus@chevron.com

WILSON CREEK LANDFARM WASTE LOG								
	COGCC Facility 149002							
		Quantity						
Date	Waste Type	BBLs	YDS	FT ³	TONS	Source Location	Comments	
Feb 25 2011	oily dirt and snow		7		9.45	truck load out	10-18-10, stirred land farm	
21-Jul-11	oily dirt		25		33.75	well 24	2011, west end of land farm is good	
21-Jul-11	oily dirt		46		62.10	well 17	don't need to till.	
2-Sep-11	Spent SulfaTreat		22		29.70	tower 2	6-2011, started digging up east end	
24-Oct-11	Spent SulfaTreat		22		29.70	tower 1	and installed liner on sept 26 2011.	
	2011 Totals -	0	122	0	164.7			
6-Jan-12	Spent SulfaTreat		22		29.70	tower 2	sept 30 2011- spread 5 tons of lime	
2-Mar-12	Spent SulfaTreat		22		29.70	tower 1	on lined area tilled down 3'.	
19-Apr-12	Spent SulfaTreat		22		29.70	tower 2		
8-May-12	Spent SulfaTreat	115			32.28	Tower 1		
19-Jun-12	Spent SulfaTreat		22		29.70	Tower 2	7-25-12 Tilled land farm	
14-Aug-12	Spent SulfaTreat		22		29.70	Tower 1		
15-Aug-12	Spent SulfaTreat		20		27.00	Tower 2	19-Sept-12 tilled land farm	
4-Nov-12	Spent SulfaTreat		22		29.70	Tower 2		
17-Dec-12	Spent SulfaTreat		22		29.70	Tower 1		
	2012 Totals -	115	174	0	267.2			

Landfarm Data Summary 2012
Chevron Environmental Management Company
Wilson Creek Unit
Rio Blanco County, Colorado

Analyte	Landfarm Samples Method	COGCC Allowable Concentrations	Landfarm Samples 06/06/2012 (Depth)		Landfarm Samples 10/12/2011 (Depth)	
			Shallow (6")	Deep (24")	Shallow (6")	Deep (24")
TPH (C6 - C36)	8015M	500	391	66	270	113
Benzene	5035/8260B	0.17	2.97	0.15	<0.080	<0.080
Toluene	5035/8260B	85	5.50	0.67	<0.080	<0.080
Ethylbenzene	5035/8260B	100	0.42	<0.080	<0.080	<0.080
Total Xylenes	5035/8260B	175	2.47	0.2	<0.280	<0.280
Acenaphthene	8270C	1,000	<0.3	<0.3	<0.3	<0.3
Anthracene	8270C	1,000	<0.3	<0.3	<0.3	<0.3
Benzo(A)anthracene	8270C	0.22	<0.3	<0.3	<0.3	<0.3
Benzo(B)fluoranthene	8270C	0.22	<0.3	<0.3	<0.3	<0.3
Benzo(K)fluoranthene	8270C	2.2	<0.3	<0.3	<0.3	<0.3
Benzo(A)pyrene	8270C	0.022	<0.3	<0.3	<0.3	<0.3
Chrysene	8270C	22	<0.3	<0.3	<0.3	<0.3
Dibenzo(A,H)anthracene	8270C	0.022	<0.3	<0.3	<0.3	<0.3
Fluoranthene	8270C	1,000	<0.3	<0.3	<0.3	<0.3
Fluorene	8270C	1,000	<0.3	<0.3	<0.3	<0.3
Indeno(1,2,3,C,D)pyrene	8270C	0.22	<0.3	<0.3	<0.3	<0.3
Napthalene	8270C	23	<0.3	<0.3	<0.3	<0.3
Pyrene	8270C	1,000	<0.3	<0.3	<0.3	<0.3
Electrical Conductivity	120.1	<4 ⁴	2.659	4.250	23.646	22.334
Sodium Adsorption Ratio	20B	<12 ⁵	0.399	0.371	0.077	0.114
pH	9045D	6 - 9 ⁶	7.56	6.70	3.01	3.22
Arsenic	6020	0.39	4.43	2.08	5.39	4.01
Barium (LDNR True Total Barium)	6020	15,000	60.3	61.5	28.5	39.5
Boron (Hot Water Soluble)	200.8	2 ⁷	231	258	218	213
Cadmium	6020	70	0.39	0.35	0.27	0.26

Landfarm Data Summary 2012
Chevron Environmental Management Company
Wilson Creek Unit
Rio Blanco County, Colorado

Analyte	Landfarm Samples Method	COGCC Allowable Concentrations	Landfarm Samples 06/06/2012 (Depth)		Landfarm Samples 10/12/2011 (Depth)	
			Shallow (6")	Deep (24")	Shallow (6")	Deep (24")
Chromium (III)	6020	120,000	37.6	6.87	51.3	53.8
Chromium (VI)	3500-Cr B	23	<2	<2	<3	<4
Copper	6020	3,100	996	46.0	851	892
Lead (Inorganic)	6020	400	15.4	8.79	6.77	6.38
Mercury	7471A	23	0.070	0.153	0.091	0.055
Nickel (Soluble Salts)	6020	1,600	30.2	11.8	26.4	33.3
Selenium	6020	390	<0.50	<0.50	<0.50	<0.50
Silver	6020	390	<0.20	<0.20	0.33	0.24
Zinc	6020	23,000	35.9	22.8	29.6	27.7
Nitrate Nitrogen by IC	EPA 300.0	NA	<10	<10	<4	<4
Total Phosphorus	4500-PE	NA	290	250	273	277
Ammonia Nitrogen	4500NH3 D	NA	2	1	3	3
Moisture	2540 B	NA	22 ⁸	20 ⁸	22 ⁸	21 ⁸

Notes:

Concentrations are in milligram per kilogram (mg/kg) unless otherwise noted.

Concentrations shaded gray and BOLD are above the Colorado Oil and Gas Conservation Commission (COGCC) Series 900 Allowable Concentrations.

Concentrations in BOLD-only are Non-detect with a detection limit above the Allowable Concentrations.

1. Allowable Concentrations: COGCC Allowable Concentrations per Series 900 Rules (May 30, 2011) Table 910-1
2. TPH: Total petroleum hydrocarbons
3. In general, < represent concentrations below the detection limit
4. mmhos/cm: Millimhos per centimeter
5. Unitless
6. Standard pH units
7. mg/L: Milligrams per liter
8. Percent moisture (%)



Analytical Laboratory Report

Report ID: S52802.01(01)
Generated on 06/21/2012

Report to

Attention: Chris Beall
Stantec
2000 S. Colorado Blvd.
Ste. 2-300

Phone: 970-214-1126 FAX:
Email: Christopher.Beall@stantec.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S52802.01-S52802.02
Project: Chevron Wilson Creek
Collected Date: 06/06/2012
Submitted Date/Time: 06/08/2012 10:00
Sampled by: Chris Beall
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Samples are held by the lab for 30 days from the sample submittal date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Laboratory Certifications:

Michigan DNRE (#9956), DOD/ISO 17025 (#L11-184), WBENC (#2005110032)
Ohio EPA (#CL0002), IN Drinking Water (#C-MI-07), NELAC NY (#11814), NELAC FL (#E871045)
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S52802.01	LF - 6" - 060612	Soil	06/06/2012 15:30
S52802.02	LF - 24" - 060612	Soil	06/06/2012 15:45



Analytical Laboratory Report

Lab Sample ID: S52802.01
Sample Tag: LF - 6" - 060612
Collected Date/Time: 06/06/2012 15:30
Matrix: Soil
COC Reference: 69087

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	3.6	IR
1	8oz Glass	None	Yes	3.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

DRO Extraction	Completed			3510C	06/12/12 19:56	EMR		
Mercury Digestion	Completed			7471A	06/13/12 09:45	JRH		
Metal Digestion	Completed			3050B	06/14/12 01:00	SLR		
Metal Digestion	Completed			3015A	06/18/12 01:00	SLR		
PNA Extraction	Completed			3550B	06/12/12 13:39	CCM		
Sodium Adsorption Ratio Prep.	Completed			20B	06/18/12 01:00	SLR		

Inorganics

Ammonia-N	2	mg/kg	1	4500-NH3 D	06/12/12 17:07	MJC	7664-41-7	
Chromium VI	Not detected	mg/kg	2	3500-Cr B	06/15/12 12:40	JKB	18540-29-9	
Conductivity	2,659	umhos/cm		120.1	06/13/12 13:26	JKB		
Nitrate-N	Not detected	mg/kg	10	300.0	06/13/12 08:26	JDP	14797-55-8	
pH/ Corrosivity	7.56	STD Units	0.1	9045D	06/20/12 11:41	WAR		
Total Phosphorus	290	mg/kg	10	4500-PE	06/15/12 12:53	MJC	7723-14-0	
Total Solids	78	%	1	Std M 2540 B	06/11/12 17:00	WAR		

Metals

Hot Water Extraction	Completed				06/15/12 13:00	PER		
Arsenic	4.43	mg/kg	0.10	6020	06/14/12 17:24	SLS	7440-38-2	
Barium	60.3	mg/kg	1.0	6020	06/14/12 17:24	SLS	7440-39-3	
Cadmium	0.39	mg/kg	0.20	6020	06/14/12 17:24	SLS	7440-43-9	
Chromium III	37.6	mg/kg	2.0	6020	06/15/12 16:00	JKB	16065-83-1	
Chromium	37.6	mg/kg	0.50	6020	06/14/12 17:24	SLS	7440-47-3	
Copper	996	mg/kg	1.0	6020	06/14/12 17:24	SLS	7440-50-8	
Lead	15.4	mg/kg	0.30	6020	06/14/12 17:24	SLS	7439-92-1	
Mercury	0.070	mg/kg	0.050	7471A	06/13/12 14:03	JRT	7439-97-6	
Nickel	30.2	mg/kg	2.0	6020	06/14/12 17:24	SLS	7440-02-0	
Selenium	Not detected	mg/kg	0.50	6020	06/14/12 17:24	SLS	7782-49-2	
Silver	Not detected	mg/kg	0.20	6020	06/14/12 17:24	SLS	7440-22-4	
Zinc	35.9	mg/kg	1.0	6020	06/14/12 17:24	SLS	7440-66-6	
Boron	231	mg/L	20.0	200.8	06/19/12 11:16	PER	7440-42-8	
Calcium	869	mg/L	1.0	200.8	06/19/12 14:20	SLS	7440-70-2	
Magnesium	188	mg/L	1.0	200.8	06/19/12 14:20	SLS	7439-95-4	
Sodium	49.8	mg/L	1.0	200.8	06/19/12 14:20	SLS	7440-23-5	
Sodium Adsorption Ratio	0.399	ru		20B	06/20/12 14:00	PCS		

Organics - Semi-Volatiles

TPH DRO (C10-C32)	84,000	ug/kg	9,000	8015M	06/20/12 16:59	PL		X
TPH DRO (C32-C36)	27,000	ug/kg	9,000	8015M	06/20/12 16:59	PL		X

X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Lab Sample ID: S52802.01 (continued)

Sample Tag: LF - 6" - 060612

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
Polynuclear Aromatics								
Acenaphthene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	83-32-9	
Anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	207-08-9	
Chrysene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	91-20-3	
Pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:32	PL	129-00-0	
Organics - Volatiles								
TPH GRO (C6-C10)	280,000	ug/kg	80,000	8015M	06/19/12 14:40	WAT		Y
BTEX 5035								
Benzene	2,970	ug/kg	80	5035/8260B	06/18/12 15:36	WAT	71-43-2	
Toluene	5,500	ug/kg	80	5035/8260B	06/18/12 15:36	WAT	108-88-3	
Ethylbenzene	420	ug/kg	80	5035/8260B	06/18/12 15:36	WAT	100-41-4	
p,m-Xylene	2,000	ug/kg	200	5035/8260B	06/18/12 15:36	WAT		
o-Xylene	470	ug/kg	80	5035/8260B	06/18/12 15:36	WAT	95-47-6	

Y-Elevated reporting limit due to high target concentration



Analytical Laboratory Report

Lab Sample ID: S52802.02
Sample Tag: LF - 24" - 060612
Collected Date/Time: 06/06/2012 15:45
Matrix: Soil
COC Reference: 69087

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	3.6	IR
1	8oz Glass	None	Yes	3.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

DRO Extraction	Completed			3510C	06/12/12 19:56	EMR		
Mercury Digestion	Completed			7471A	06/13/12 09:45	JRH		
Metal Digestion	Completed			3050B	06/14/12 01:00	SLR		
Metal Digestion	Completed			3015A	06/18/12 01:00	SLR		
PNA Extraction	Completed			3550B	06/12/12 13:39	CCM		
Sodium Adsorption Ratio Prep.	Completed			20B	06/18/12 01:00	SLR		

Inorganics

Ammonia-N	1	mg/kg	1	4500-NH3 D	06/12/12 17:18	MJC	7664-41-7	
Chromium VI	Not detected	mg/kg	2	3500-Cr B	06/15/12 12:45	JKB	18540-29-9	
Conductivity	4,250	umhos/cm		120.1	06/13/12 13:30	JKB		
Nitrate-N	Not detected	mg/kg	10	300.0	06/13/12 08:38	JDP	14797-55-8	
pH/ Corrosivity	6.70	STD Units	0.1	9045D	06/20/12 11:43	WAR		
Total Phosphorus	250	mg/kg	10	4500-PE	06/15/12 13:03	MJC	7723-14-0	
Total Solids	80	%	1	Std M 2540 B	06/11/12 17:00	WAR		

Metals

Hot Water Extraction	Completed				06/15/12 13:00	PER		
Arsenic	2.08	mg/kg	0.10	6020	06/14/12 17:27	SLS	7440-38-2	
Barium	61.5	mg/kg	1.0	6020	06/14/12 17:27	SLS	7440-39-3	
Cadmium	0.35	mg/kg	0.20	6020	06/14/12 17:27	SLS	7440-43-9	
Chromium III	6.87	mg/kg	2.0	6020	06/15/12 16:02	JKB	16065-83-1	
Chromium	6.87	mg/kg	0.50	6020	06/14/12 17:27	SLS	7440-47-3	
Copper	46.0	mg/kg	1.0	6020	06/14/12 17:27	SLS	7440-50-8	
Lead	8.79	mg/kg	0.30	6020	06/14/12 17:27	SLS	7439-92-1	
Mercury	0.153	mg/kg	0.050	7471A	06/13/12 14:05	JRT	7439-97-6	
Nickel	11.8	mg/kg	2.0	6020	06/14/12 17:27	SLS	7440-02-0	
Selenium	Not detected	mg/kg	0.50	6020	06/14/12 17:27	SLS	7782-49-2	
Silver	Not detected	mg/kg	0.20	6020	06/14/12 17:27	SLS	7440-22-4	
Zinc	22.8	mg/kg	1.0	6020	06/14/12 17:27	SLS	7440-66-6	
Boron	258	mg/L	20.0	200.8	06/19/12 11:17	PER	7440-42-8	
Calcium	607	mg/L	1.0	200.8	06/19/12 14:22	SLS	7440-70-2	
Magnesium	235	mg/L	1.0	200.8	06/19/12 14:22	SLS	7439-95-4	
Sodium	42.5	mg/L	1.0	200.8	06/19/12 14:22	SLS	7440-23-5	
Sodium Adsorption Ratio	0.371	ru		20B	06/20/12 14:00	PCS		

Organics - Semi-Volatiles

TPH DRO (C10-C32)	26,000	ug/kg	4,000	8015M	06/20/12 17:25	PL		
TPH DRO (C32-C36)	11,000	ug/kg	4,000	8015M	06/20/12 17:25	PL		



Analytical Laboratory Report

Lab Sample ID: S52802.02 (continued)

Sample Tag: LF - 24" - 060612

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
Polynuclear Aromatics								
Acenaphthene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	83-32-9	
Anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	207-08-9	
Chrysene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	91-20-3	
Pyrene	Not detected	ug/kg	300	8270C	06/19/12 18:56	PL	129-00-0	
Organics - Volatiles								
TPH GRO (C6-C10)	29,000	ug/kg	8,000	8015M	06/19/12 13:46	WAT		
BTEX 5035								
Benzene	150	ug/kg	80	5035/8260B	06/18/12 15:56	WAT	71-43-2	
Toluene	670	ug/kg	80	5035/8260B	06/18/12 15:56	WAT	108-88-3	
Ethylbenzene	Not detected	ug/kg	80	5035/8260B	06/18/12 15:56	WAT	100-41-4	
p,m-Xylene	200	ug/kg	200	5035/8260B	06/18/12 15:56	WAT		
o-Xylene	Not detected	ug/kg	80	5035/8260B	06/18/12 15:56	WAT	95-47-6	

Form 4, within thirty (30) days of December 30, 1997. The Sundry Notice, Form 4 shall include a copy of the existing pit permit, if a permit was obtained, and a description of the closure process.

- (2) Pits closed prior to December 30, 1997 were required to be reclaimed in accordance with the 1000 Series rules. Pits closed after December 30, 1997 shall be closed in accordance with the 900 Series rules and reclaimed in accordance with the 1000 Series rules.
- (3) Operators of steel, fiberglass, concrete or other similar produced water vessels buried or partially buried and located in sensitive areas were required to repair or replace vessels and tanks found to be leaking. Operators shall repair or replace vessels and tanks found to be leaking. Operators shall submit to the Director a Sundry Notice, Form 4, describing the integrity testing results and action taken within thirty (30) days of December 30, 1997.
- (4) Closure of pits and steel, fiberglass, concrete or other similar produced water vessels, and associated remediation operations conducted prior to December 30, 1997 are not subject to Rules 905., 906., 907., 909. and 910.

912. VENTING OR FLARING NATURAL GAS

- a. The unnecessary or excessive venting or flaring of natural gas produced from a well is prohibited.
- b. Except for gas flared or vented during an upset condition, well maintenance, well stimulation flowback, purging operations, or a productivity test, gas from a well shall be flared or vented only after notice has been given and approval obtained from the Director on a Sundry Notice, Form 4, stating the estimated volume and content of the gas. The notice shall indicate whether the gas contains more than one (1) ppm of hydrogen sulfide. If necessary to protect the public health, safety or welfare, the Director may require the flaring of gas.
- c. Gas flared, vented or used on the lease shall be estimated based on a gas-oil ratio test or other equivalent test approved by the Director, and reported on Operator's Monthly Production Report, Form 7.
- d. Flared gas that is subject to Sundry Notice, Form 4, shall be directed to a controlled flare in accordance with Rule 903.b.(2) or other combustion device operated as efficiently as possible to provide maximum reduction of air contaminants where practicable and without endangering the safety of the well site personnel and the public.
- e. Operators shall notify the local emergency dispatch or the local governmental designee of any natural gas flaring. Notice shall be given prior to flaring when flaring can be reasonably anticipated, or as soon as possible, but in no event more than two (2) hours after the flaring occurs.

Table 910-1
CONCENTRATION LEVELS¹

Contaminant of Concern	Concentrations
Organic Compounds in Soil	
TPH (total volatile and extractable petroleum hydrocarbons)	500 mg/kg
Benzene	0.17 mg/kg ²

Toluene	85 mg/kg ²
Ethylbenzene	100 mg/kg ²
Xylenes (total)	175 mg/kg ²
Acenaphthene	1,000 mg/kg ²
Anthracene	1,000 mg/kg ²
Benzo(A)anthracene	0.22 mg/kg ²
Benzo(B)fluoranthene	0.22 mg/kg ²
Benzo(K)fluoranthene	2.2 mg/kg ²
Benzo(A)pyrene	0.022 mg/kg ²
Chrysene	22 mg/kg ²
Dibenzo(A,H)anthracene	0.022 mg/kg ²
Fluoranthene	1,000 mg/kg ²
Fluorene	1,000 mg/kg ²
Indeno(1,2,3,C,D)pyrene	0.22 mg/kg ²
Napthalene	23 mg/kg ²
Pyrene	1,000 mg/kg ²
Organic Compounds in Ground Water	
Benzene	5 µg/l³
Toluene	500 to 1,000 µg/l³
Ethylbenzene	700 µg/l³
Xylenes (Total)	1,100 to 10,000 µg/l^{3,4}
Inorganics in Soils	
Electrical Conductivity (EC)	<4 mmhos/cm or 2x background
Sodium Adsorption Ratio (SAR)	<12 ⁵
pH	6-9
Inorganics in Ground Water	
Total Dissolved Solids (TDS)	<1.25 x background¹
Chlorides	<1.25 x background¹
Sulfates	<1.25 x background¹
Metals in Soils	
Arsenic	0.39 mg/kg ²
Barium (LDNR True Total Barium)	15,000 mg/kg ²
Boron (Hot Water Soluble)	2 mg/l ³
Cadmium	70 mg/kg ^{3,6}
Chromium (III)	120,000 mg/kg ²
Chromium (VI)	23 mg/kg ^{2,8}
Copper	3,100 mg/kg ²
Lead (inorganic)	400 mg/kg ²
Mercury	23 mg/kg ²
Nickel (soluble salts)	1,600 mg/kg ^{2,6}
Selenium	390 mg/kg ^{2,6}
Silver	390 mg/kg ²
Zinc	23,000 mg/kg ^{2,8}
Liquid Hydrocarbons in Soils and Ground Water	
Liquid hydrocarbons including condensate and oil	Below detection level

COGCC recommends that the latest version of EPA SW 846 analytical methods be used where possible and that analyses of samples be performed by laboratories that maintain state or national accreditation programs.

¹ Consideration shall be given to background levels in native soils and ground water.

² Concentrations taken from CDPHE-HMWMD Table 1 Colorado Soil Evaluation Values (December 2007).

³ Concentrations taken from CDPHE-WQCC Regulation 41 - The Basic Standards for Ground Water.

⁴ For this range of standards, the first number in the range is a strictly health-based value, based on the WQCC's established methodology for human health-based standards. The second number in the range is a maximum contaminant level (MCL), established under the Federal Safe Drinking Water Act which has been



Analytical Laboratory Report

Report ID: S54164.01(01)
Generated on 10/25/2012

Report to

Attention: Chris Beall / Adam Valenti
Stantec
2000 S. Colorado Blvd.
Ste. 2-300

Phone: 970-214-1126 FAX:
Email: Christopher.Beall@stantec.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:

Andy Ball (andyball@meritlabs.com)
Tabitha Faust (tfaust@meritlabs.com)

Report Summary

Lab Sample ID(s): S54164.01-S54164.02
Project: Chevron Wilson Creek
Collected Date: 10/01/2012
Submitted Date/Time: 10/09/2012 09:30
Sampled by: A Valenti/Q Baker
P.O. #:

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).
Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc..

Laboratory Certifications:

Michigan DNRE (#9956), DOD/ISO 17025 (#L11-184), WBENC (#2005110032), Ohio EPA (#CL0002), IN Drinking Water (#C-MI-07), NELAC NY (#11814)
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (2 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S54164.01	LF - 6" - 10012012	Soil	10/01/2012 15:20
S54164.02	LF - 24" - 10012012	Soil	10/01/2012 15:20



Analytical Laboratory Report

Lab Sample ID: S54164.01
Sample Tag: LF - 6" - 10012012
Collected Date/Time: 10/01/2012 15:20
Matrix: Soil
COC Reference: 70928

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	4.6	IR
1	8oz Glass	None	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

DRO Extraction	Completed			3550B	10/09/12 23:05	EMR		
DRO Extraction (Replicate 01)	Completed			3550B	10/11/12 20:24	EMR		
Mercury Digestion	Completed			SW7471A	10/16/12 14:00	JRH		
Metal Digestion	Completed			3050B	10/12/12 12:00	PER		
Metal Digestion	Completed			3015A	10/16/12 01:00	SLR		
PNA Extraction	Completed			3550B	10/09/12 23:04	EMR		
Sodium Adsorption Ratio Prep.	Completed			20B	10/16/12 01:00	SLR		

Inorganics

Ammonia-N (Undistilled)	3	mg/kg	1	4500-NH3 D	10/10/12 15:40	MJC	7664-41-7	
Chromium VI	Not detected	mg/kg	3	3500-Cr B	10/15/12 11:35	JKB	18540-29-9	
Conductivity	23,646	umhos/cm		120.1	10/15/12 13:25	JKB		
Nitrate-N	Not detected	mg/kg	4	E300.0	10/12/12 17:31	JDP	14797-55-8	
pH/ Corrosivity	3.01	STD Units	0.1	9045D	10/19/12 16:22	WAR		
Total Phosphorus	273	mg/kg	1	4500-PE	10/18/12 09:38	MJC	7723-14-0	
Total Solids	78	%	1	Std M 2540 B	10/10/12 13:00	RGS		

Metals

Hot Water Extraction	Completed				10/16/12 01:00	SLR		
Arsenic	5.39	mg/kg	0.20	SW6020	10/12/12 13:24	PER	7440-38-2	
Barium	28.5	mg/kg	1.0	SW6020	10/12/12 13:24	PER	7440-39-3	
Cadmium	0.27	mg/kg	0.20	SW6020	10/12/12 13:24	PER	7440-43-9	
Chromium III	51.3	mg/kg	3	SW6020	10/15/12 16:00	JKB	16065-83-1	
Chromium	51.3	mg/kg	0.50	SW6020	10/12/12 13:24	PER	7440-47-3	
Copper	851	mg/kg	0.50	SW6020	10/12/12 13:24	PER	7440-50-8	
Lead	6.77	mg/kg	0.30	SW6020	10/12/12 13:24	PER	7439-92-1	
Mercury	0.091	mg/kg	0.050	SW7471A	10/16/12 16:29	JRT	7439-97-6	
Nickel	26.4	mg/kg	0.50	SW6020	10/12/12 13:24	PER	7440-02-0	
Selenium	Not detected	mg/kg	0.50	SW6020	10/12/12 13:24	PER	7782-49-2	
Silver	0.33	mg/kg	0.10	SW6020	10/12/12 13:24	PER	7440-22-4	
Zinc	29.6	mg/kg	1.0	SW6020	10/12/12 13:24	PER	7440-66-6	
Boron	218	mg/L	0.58	E200.8	10/16/12 16:15	SLS	7440-42-8	
Calcium	520	mg/L	1.0	E200.8	10/16/12 17:00	SLS	7440-70-2	
Magnesium	681	mg/L	1.0	E200.8	10/16/12 17:00	SLS	7439-95-4	
Sodium	11.4	mg/L	1.0	E200.8	10/16/12 17:00	SLS	7440-23-5	
Sodium Adsorption Ratio	0.077	ru		20B	10/25/12 08:50	ASB		

Organics - Semi-Volatiles

TPH DRO (C10-C32)	38,000	ug/kg	9,000	SW8015M	10/10/12 20:14	PL		XS
TPH DRO (C10-C32) (Replicate 01)	32,000	ug/kg	9,000	SW8015M	10/15/12 13:28	PL		SX
TPH DRO (C32-C36)	17,000	ug/kg	9,000	SW8015M	10/10/12 20:14	PL		XS

X-Elevated reporting limit due to matrix interference S-Surrogate recovery outside of control limits



Analytical Laboratory Report

Lab Sample ID: S54164.01 (continued)

Sample Tag: LF - 6" - 10012012

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TPH DRO (C32-C36) (Replicate 01)	14,000	ug/kg	9,000	SW8015M	10/15/12 13:28	PL		SX
Polynuclear Aromatics								
Acenaphthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	83-32-9	
Anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	207-08-9	
Chrysene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	91-20-3	
Pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:14	PL	129-00-0	
Organics - Volatiles								
TPH GRO (C6-C10)	215,000	ug/kg	8,000	SW8015M	10/10/12 16:16	WAT		
BTEX 5035								
Benzene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:18	JGH	71-43-2	
Toluene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:18	JGH	108-88-3	
Ethylbenzene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:18	JGH	100-41-4	
p,m-Xylene	Not detected	ug/kg	200	5035/8260B	10/09/12 18:18	JGH		
o-Xylene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:18	JGH	95-47-6	

S-Surrogate recovery outside of control limits X-Elevated reporting limit due to matrix interference



Analytical Laboratory Report

Lab Sample ID: S54164.02
Sample Tag: LF - 24" - 10012012
Collected Date/Time: 10/01/2012 15:20
Matrix: Soil
COC Reference: 70928

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	MeOH	Yes	4.6	IR
1	8oz Glass	None	Yes	4.6	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

DRO Extraction	Completed			3550B	10/09/12 23:05	EMR		
DRO Extraction (Replicate 01)	Completed			3550B	10/11/12 20:24	EMR		
Mercury Digestion	Completed			SW7471A	10/16/12 14:00	JRH		
Metal Digestion	Completed			3050B	10/12/12 12:00	PER		
Metal Digestion	Completed			3015A	10/16/12 01:00	SLR		
PNA Extraction	Completed			3550B	10/09/12 23:04	EMR		
Sodium Adsorption Ratio Prep.	Completed			20B	10/16/12 01:00	SLR		

Inorganics

Ammonia-N (Undistilled)	3	mg/kg	1	4500-NH3 D	10/10/12 16:06	MJC	7664-41-7	
Chromium VI	Not detected	mg/kg	4	3500-Cr B	10/15/12 11:45	JKB	18540-29-9	
Conductivity	22,334	umhos/cm		120.1	10/15/12 13:35	JKB		
Nitrate-N	Not detected	mg/kg	4	E300.0	10/12/12 17:54	JDP	14797-55-8	
pH/ Corrosivity	3.22	STD Units	0.1	9045D	10/19/12 16:22	WAR		
Total Phosphorus	277	mg/kg	1	4500-PE	10/18/12 09:50	MJC	7723-14-0	
Total Solids	79	%	1	Std M 2540 B	10/10/12 13:00	RGS		

Metals

Hot Water Extraction	Completed				10/16/12 01:00	SLR		
Arsenic	4.01	mg/kg	0.20	SW6020	10/12/12 13:31	PER	7440-38-2	
Barium	39.5	mg/kg	1.0	SW6020	10/12/12 13:31	PER	7440-39-3	
Cadmium	0.26	mg/kg	0.20	SW6020	10/12/12 13:31	PER	7440-43-9	
Chromium III	53.8	mg/kg	4	SW6020	10/15/12 16:02	JKB	16065-83-1	
Chromium	53.8	mg/kg	0.50	SW6020	10/12/12 13:31	PER	7440-47-3	
Copper	892	mg/kg	0.50	SW6020	10/12/12 13:31	PER	7440-50-8	
Lead	6.38	mg/kg	0.30	SW6020	10/12/12 13:31	PER	7439-92-1	
Mercury	0.055	mg/kg	0.050	SW7471A	10/16/12 16:27	JRT	7439-97-6	
Nickel	33.3	mg/kg	0.50	SW6020	10/12/12 13:31	PER	7440-02-0	
Selenium	Not detected	mg/kg	0.50	SW6020	10/12/12 13:31	PER	7782-49-2	
Silver	0.24	mg/kg	0.10	SW6020	10/12/12 13:31	PER	7440-22-4	
Zinc	27.7	mg/kg	1.0	SW6020	10/12/12 13:31	PER	7440-66-6	
Boron	213	mg/L	0.58	E200.8	10/16/12 16:17	SLS	7440-42-8	
Calcium	513	mg/L	1.0	E200.8	10/16/12 17:01	SLS	7440-70-2	
Magnesium	630	mg/L	1.0	E200.8	10/16/12 17:01	SLS	7439-95-4	
Sodium	16.3	mg/L	1.0	E200.8	10/16/12 17:01	SLS	7440-23-5	
Sodium Adsorption Ratio	0.114	ru		20B	10/25/12 08:50	ASB		

Organics - Semi-Volatiles

TPH DRO (C10-C32)	65,000	ug/kg	8,000	SW8015M	10/10/12 20:35	PL		XS
TPH DRO (C10-C32) (Replicate 01)	59,000	ug/kg	8,000	SW8015M	10/15/12 13:49	PL		X
TPH DRO (C32-C36)	23,000	ug/kg	8,000	SW8015M	10/10/12 20:35	PL		XS

X-Elevated reporting limit due to matrix interference S-Surrogate recovery outside of control limits



Analytical Laboratory Report

Lab Sample ID: S54164.02 (continued)

Sample Tag: LF - 24" - 10012012

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Semi-Volatiles (continued)								
TPH DRO (C32-C36) (Replicate 01)	24,000	ug/kg	8,000	SW8015M	10/15/12 13:49	PL		X
Polynuclear Aromatics								
Acenaphthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	83-32-9	
Anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	120-12-7	
Benzo(a)anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	56-55-3	
Benzo(a)pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	50-32-8	
Benzo(b)fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	205-99-2	
Benzo(k)fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	207-08-9	
Chrysene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	218-01-9	
Dibenzo(ah)anthracene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	53-70-3	
Fluoranthene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	206-44-0	
Fluorene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	193-39-5	
Naphthalene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	91-20-3	
Pyrene	Not detected	ug/kg	300	SW8270C	10/10/12 20:35	PL	129-00-0	
Organics - Volatiles								
TPH GRO (C6-C10)	25,000	ug/kg	8,000	SW8015M	10/10/12 16:34	WAT		
BTEX 5035								
Benzene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:36	JGH	71-43-2	
Toluene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:36	JGH	108-88-3	
Ethylbenzene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:36	JGH	100-41-4	
p,m-Xylene	Not detected	ug/kg	200	5035/8260B	10/09/12 18:36	JGH		
o-Xylene	Not detected	ug/kg	80	5035/8260B	10/09/12 18:36	JGH	95-47-6	

X-Elevated reporting limit due to matrix interference



www.meritlabs.com

C.O.C. PAGE # 1 **OF** 1

70928

INVOICE TO

CONTACT NAME Adam Valenti / Chris Beall			
COMPANY Stanter Consulting Services			
ADDRESS 2000 S Colorado Blvd Suite 2-300			
CITY Denver			STATE CO
			ZIP CODE 80222
PHONE NO. 970 214-1126		FAX NO.	
E-MAIL ADDRESS Christopher.Beall@Stanter.com		P.O. NO.	
		QUOTE NO.	

CONTACT NAME		IS SAME	
COMPANY			
ADDRESS			
CITY		STATE	ZIP CODE
PHONE NO.	E-MAIL ADDRESS		

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

PROJECT NO./NAME Chevron Wilson Creek	SAMPLE(S) - PLEASE PRINT/SIGN NAME Hagan Valeri / Gunn
TURNAROUND TIME REQUIRED <input type="checkbox"/> 1 DAY <input type="checkbox"/> 2 DAYS <input type="checkbox"/> 3 DAYS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> OTHER	

DELIVERABLES REQUIRED ☐ LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER _____

MATRIX	GW=GROUNDWATER	WW=WASTEWATER	S=SOIL	L=LIQUID	SD=SOLID
CODE:	SL=SLUDGE	DW=DRINKING WATER	O=OIL	WP=WIPE	A=AIR
		W=WASTE			

Containers & Preservatives

[illegible][illegible]

RELINQUISHED BY:	<input type="checkbox"/> Sampler	DATE	TIME
SIGNATURE/ORGANIZATION	Adam Valeri Stantec	10/15/12	10:15
RELINQUISHED BY:		DATE	TIME
SIGNATURE/ORGANIZATION	Quintara Bul Stantec	10/18/12	11:00
RELINQUISHED BY:		DATE	TIME
SIGNATURE/ORGANIZATION			
RELINQUISHED BY:		DATE	TIME
SIGNATURE/ORGANIZATION			

RELINQUISHED BY: <i>Quintana Bal Stantec</i>			DATE <i>10/5/12</i>	TIME <i>1015</i>
SIGNATURE/ORGANIZATION <i>Chow Ball</i>			DATE <i>09/05/12</i>	TIME <i>0930</i>
SEAL NO.	SEAL INTACT YES <input type="checkbox"/> NO <input type="checkbox"/>	INITIALS	NOTES: TEMP. ON ARRIVAL <i>4.6</i>	
SEAL NO.	SEAL INTACT YES <input type="checkbox"/> NO <input type="checkbox"/>	INITIALS		

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

STANTEC Consulting, Inc.
Suite 2-300
2000 South Colorado Boulevard
Denver CO 80222

June 28, 2012

Project: Wilson Creek

Submittal Date: 06/08/2012
Group Number: 1314538
PO Number: 89CH.49557.08
Release Number: WILSON CREEK
State of Sample Origin: COClient Sample DescriptionMW-48-060612 Grab Water Sample
MW-49-060612 Grab Water Sample
MW-50-060612 Grab Water Sample
Trip_Blank Water SampleLancaster Labs (LLI) #6681438
6681439
6681440
6681441

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

ELECTRONIC STANTEC Consulting, Inc.
COPY TO

Attn: Christopher Beall

Respectfully Submitted,



Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

Sample Description: MW-48-060612 Grab Water Sample
Wilson Creek

LLI Sample # WW 6681438
LLI Group # 1314538
Account # 11842

Project Name: Wilson Creek

Collected: 06/06/2012 13:41 by CB

STANTEC Consulting, Inc.

Submitted: 06/08/2012 09:15

Suite 2-300

Reported: 06/28/2012 18:34

2000 South Colorado Boulevard

Denver CO 80222

WIL48

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC Volatiles					
	SW-846 8015B		ug/l	ug/l	
01636	TPH-GRO water C6-C10	n.a.	< 50	50	1
GC Volatiles					
	SW-846 8021B		ug/l	ug/l	
02102	Benzene	71-43-2	< 1.0	1.0	1
02102	Ethylbenzene	100-41-4	< 1.0	1.0	1
02102	Toluene	108-88-3	< 1.0	1.0	1
02102	Total Xylenes	1330-20-7	< 3.0	3.0	1
GC Petroleum Hydrocarbons					
	SW-846 8015B		ug/l	ug/l	
08269	TPH-DRO water C10-C28	n.a.	< 95	95	1
Wet Chemistry					
	EPA 300.0		mg/l	mg/l	
00224	Chloride	16887-00-6	30.7	4.0	10
00228	Sulfate	14808-79-8	1,990	500	500
SM20 2540 C					
	SM20 2540 C		mg/l	mg/l	
00212	Total Dissolved Solids	n.a.	3,290	240	1
TDS was initially analyzed on 6/13/12 with the questionable result of 165,000 mg/L. This value was anomalous with the sample aliquot used, compelling reanalysis in duplicate on 6/18/12, five days past the hold time. In addition to the result above, the other reanalyzed TDS result is 3420 mg/L.					

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
01636	TPH-GRO water C6-C10	SW-846 8015B	1	12165B53A	06/14/2012 22:20	Marie D John	1
02102	Method 8021 Water Master	SW-846 8021B	1	12165B53A	06/14/2012 22:20	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12165B53A	06/14/2012 22:20	Marie D John	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	121630032A	06/14/2012 09:21	Tracy A Cole	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	121630032A	06/12/2012 09:30	Cynthia J Salvatori	1
00224	Chloride	EPA 300.0	1	12167987131A	06/20/2012 02:10	William L Hamaker Jr	10
00228	Sulfate	EPA 300.0	1	12167987131A	06/15/2012 20:10	Clinton M Wilson	500
00212	Total Dissolved Solids	SM20 2540 C	2	12170021202B	06/18/2012 09:27	Hannah M Royer	1

Sample Description: MW-49-060612 Grab Water Sample
Wilson Creek

LLI Sample # WW 6681439
LLI Group # 1314538
Account # 11842

Project Name: Wilson Creek

Collected: 06/06/2012 14:24 by CB

STANTEC Consulting, Inc.

Submitted: 06/08/2012 09:15

Suite 2-300

Reported: 06/28/2012 18:34

2000 South Colorado Boulevard

Denver CO 80222

WIL49

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC Volatiles					
01636	TPH-GRO water C6-C10	SW-846 8015B n.a.	ug/l < 50	ug/l 50	1
GC Volatiles					
02102	Benzene	SW-846 8021B 71-43-2	ug/l < 1.0	ug/l 1.0	1
02102	Ethylbenzene	100-41-4	< 1.0	1.0	1
02102	Toluene	108-88-3	< 1.0	1.0	1
02102	Total Xylenes	1330-20-7	< 3.0	3.0	1
GC Petroleum Hydrocarbons					
08269	TPH-DRO water C10-C28	SW-846 8015B n.a.	ug/l 480	ug/l 95	1
Wet Chemistry					
00224	Chloride	EPA 300.0 16887-00-6	mg/l 11.5	mg/l 2.0	5
00228	Sulfate	14808-79-8	440	50.0	50
SM20 2540 C					
00212	Total Dissolved Solids	n.a.	mg/l 1,100	mg/l 120	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
01636	TPH-GRO water C6-C10	SW-846 8015B	1	12165B53A	06/14/2012 22:47	Marie D John	1
02102	Method 8021 Water Master	SW-846 8021B	1	12165B53A	06/14/2012 22:47	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12165B53A	06/14/2012 22:47	Marie D John	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	121630032A	06/14/2012 11:14	Tracy A Cole	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	121630032A	06/12/2012 09:30	Cynthia J Salvatori	1
00224	Chloride	EPA 300.0	1	12167987131B	06/16/2012 01:23	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	12167987131B	06/16/2012 01:37	Clinton M Wilson	50
00212	Total Dissolved Solids	SM20 2540 C	1	12165021202B	06/13/2012 09:55	Bronson L Cole	1

Sample Description: MW-50-060612 Grab Water Sample
Wilson Creek

LLI Sample # WW 6681440
LLI Group # 1314538
Account # 11842

Project Name: Wilson Creek

Collected: 06/06/2012 15:59 by CB

STANTEC Consulting, Inc.

Submitted: 06/08/2012 09:15

Suite 2-300

Reported: 06/28/2012 18:34

2000 South Colorado Boulevard

Denver CO 80222

WIL50

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC Volatiles					
01636	TPH-GRO water C6-C10	SW-846 8015B n.a.	ug/l < 50	ug/l 50	1
GC Volatiles					
02102	Benzene	SW-846 8021B 71-43-2	ug/l < 1.0	ug/l 1.0	1
02102	Ethylbenzene	100-41-4	< 1.0	1.0	1
02102	Toluene	108-88-3	< 1.0	1.0	1
02102	Total Xylenes	1330-20-7	< 3.0	3.0	1
GC Petroleum Hydrocarbons					
08269	TPH-DRO water C10-C28	SW-846 8015B n.a.	ug/l 190	ug/l 95	1
Wet Chemistry					
00224	Chloride	EPA 300.0 16887-00-6	mg/l 28.2	mg/l 2.0	5
00228	Sulfate	14808-79-8	1,790	500	500
SM20 2540 C					
00212	Total Dissolved Solids	n.a.	mg/l 2,760	mg/l 240	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
01636	TPH-GRO water C6-C10	SW-846 8015B	1	12165B53A	06/14/2012 23:14	Marie D John	1
02102	Method 8021 Water Master	SW-846 8021B	1	12165B53A	06/14/2012 23:14	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12165B53A	06/14/2012 23:14	Marie D John	1
08269	TPH-DRO water C10-C28	SW-846 8015B	1	121630032A	06/14/2012 09:43	Tracy A Cole	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	121630032A	06/12/2012 09:30	Cynthia J Salvatori	1
00224	Chloride	EPA 300.0	1	12167987131B	06/16/2012 01:52	Clinton M Wilson	5
00228	Sulfate	EPA 300.0	1	12167987131B	06/16/2012 02:07	Clinton M Wilson	500
00212	Total Dissolved Solids	SM20 2540 C	1	12165021203A	06/13/2012 14:04	Bronson L Cole	1

Sample Description: Trip_Blank Water Sample
Wilson Creek

LLI Sample # WW 6681441
LLI Group # 1314538
Account # 11842

Project Name: Wilson Creek

Collected: 06/06/2012

STANTEC Consulting, Inc.

Suite 2-300

Submitted: 06/08/2012 09:15

2000 South Colorado Boulevard

Reported: 06/28/2012 18:34

Denver CO 80222

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC Volatiles		SW-846 8021B	ug/l	ug/l	
02102	Benzene	71-43-2	< 1.0	1.0	1
02102	Ethylbenzene	100-41-4	< 1.0	1.0	1
02102	Toluene	108-88-3	< 1.0	1.0	1
02102	Total Xylenes	1330-20-7	< 3.0	3.0	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
02102	Method 8021 Water Master	SW-846 8021B	1	12165B53A	06/14/2012 20:33	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	12165B53A	06/14/2012 20:33	Marie D John	1

Quality Control Summary

Client Name: STANTEC Consulting, Inc.
Reported: 06/28/12 at 06:34 PM

Group Number: 1314538

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ</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: 12165B53A	Sample number(s): 6681438-6681441							
Benzene	< 1.0	1.0	ug/l	105		80-120		
Ethylbenzene	< 1.0	1.0	ug/l	105		80-120		
Toluene	< 1.0	1.0	ug/l	105		80-120		
TPH-GRO water C6-C10	< 50	50.	ug/l	84	88	75-135	5	30
Total Xylenes	< 3.0	3.0	ug/l	108		80-120		
Batch number: 121630032A	Sample number(s): 6681438-6681440							
TPH-DRO water C10-C28	< 100	100.	ug/l	81	88	56-122	7	20
Batch number: 12167987131A	Sample number(s): 6681438							
Chloride	< 0.40	0.40	mg/l	97		90-110		
Sulfate	< 1.0	1.0	mg/l	101		90-110		
Batch number: 12167987131B	Sample number(s): 6681439-6681440							
Chloride	< 0.40	0.40	mg/l	97		90-110		
Sulfate	< 1.0	1.0	mg/l	101		90-110		
Batch number: 12165021202B	Sample number(s): 6681439							
Total Dissolved Solids	< 30.0	30.0	mg/l	105		80-120		
Batch number: 12165021203A	Sample number(s): 6681440							
Total Dissolved Solids	< 30.0	30.0	mg/l	101		80-120		
Batch number: 12170021202B	Sample number(s): 6681438							
Total Dissolved Solids	< 30.0	30.0	mg/l	107		80-120		

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: 12165B53A	Sample number(s): 6681438-6681441 UNSPK: P682524								
Benzene	110	115	80-130	4	30				
Ethylbenzene	115	115	80-133	0	30				
Toluene	110	115	80-133	4	30				
Total Xylenes	115	117	80-132	1	30				
Batch number: 12167987131A	Sample number(s): 6681438 UNSPK: P681089 BKG: P681089								
Chloride	84*		90-110			222	194	13 (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: STANTEC Consulting, Inc.

Group Number: 1314538

Reported: 06/28/12 at 06:34 PM

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>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>
Sulfate	82*		90-110			29.2	23.1	23* (1)	20
Batch number: 12167987131B	Sample number(s): 6681439-6681440 UNSPK: P680612 BKG: P680612								
Chloride	101		90-110			3.6	3.6	1	20
Sulfate	98		90-110			24.1	23.0	5 (1)	20
Batch number: 12165021202B	Sample number(s): 6681439 UNSPK: P674599 BKG: P674599								
Total Dissolved Solids	99		51-144			340	345	1	9
Batch number: 12165021203A	Sample number(s): 6681440 UNSPK: P674605 BKG: P674605								
Total Dissolved Solids	102		51-144			465	470	1	9
Batch number: 12170021202B	Sample number(s): 6681438 UNSPK: P684965 BKG: 6681438								
Total Dissolved Solids	107		51-144			3,290	3,420	4	9

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: TPH-GRO water C6-C10

Batch number: 12165B53A

	Trifluorotoluene-F	Trifluorotoluene-P
6681438	80	85
6681439	81	86
6681440	80	85
6681441		84
Blank	81	86
LCS	89	85
LCSD	92	
MS		84
MSD		86

Limits: 63-135 51-120

Analysis Name: TPH-DRO water C10-C28

Batch number: 121630032A

Orthoterphenyl

6681438	86
6681439	82
6681440	79
Blank	90
LCS	100
LCSD	102

Limits: 50-154

*- 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: STANTEC Consulting, Inc.
Reported: 06/28/12 at 06:34 PM

Group Number: 1314538

*- 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.

Environmental Analysis Request/Chain of Custody



**Lancaster
Laboratories**

For Lancaster Laboratories use only

Acct. # 11842 Group # 1314538 Sample # 6681438-41

COC # 306711

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

cooler temp 1.2-1.4°C

1 Client: <u>Chavon - Stantec</u> Acct. #: _____ Project Name/ #: <u>Chavon Wilson Creek</u> PWSID #: _____ Project Manager: <u>Chris Beall</u> P.O. #: _____ Sampler: <u>Chris Beall (CAB)</u> Quote #: _____ Name of state where samples were collected: <u>Colorado</u>				4 Matrix <input type="checkbox"/> Sediment <input type="checkbox"/> Ground Surface <input type="checkbox"/> Potable Water <input type="checkbox"/> NPDES <input type="checkbox"/> Other: _____		5 Analyses Requested Preservation Codes										6 Temperature of samples upon receipt (if requested)			
						FSC: _____ SCR#: <u>1227107</u> Preservation Codes: H=HCl T=Thiosulfate N=HNO ₃ B=NaOH S=H ₂ SO ₄ O=Other													
2 Sample Identification				3 Composite		Soil <input type="checkbox"/> Water <input type="checkbox"/> Other: _____		Total # of Containers		Remarks									
Date Collected				Time Collected		Grab		Total # of Containers		*TDS Sample have NDI been field filtered!									
<u>MW-48-060612</u>				<u>060612</u>		<u>1341</u>		<u>X</u>		<u>X</u>									
<u>MW-49-060612</u>				<u>060612</u>		<u>1424</u>		<u>X</u>		<u>X</u>									
<u>MW-50-060612</u>				<u>060612</u>		<u>X</u>		<u>X</u>		<u>X</u>									
<u>Trip Blank</u>				<u>—</u>		<u>—</u>		<u>X</u>		<u>X</u>									

7 Turnaround Time Requested (TAT) (please circle): <u>Standard</u> Rush (Rush TAT is subject to Lancaster Laboratories approval and surcharge.) Date results are needed: _____ Rush results requested by (please circle): Phone _____ E-mail _____ Phone #: _____ E-mail address: <u>Christopher.beall@stantec.com</u>				Relinquished by: <u>[Signature]</u> Date: <u>5/23/12</u> Time: <u>4:40</u> Relinquished by: <u>[Signature]</u> Date: <u>06/12/12</u> Time: <u>1400</u> Relinquished by: _____ Date: _____ Time: _____ Relinquished by: _____ Date: _____ Time: _____ Relinquished by: _____ Date: _____ Time: _____				9	
8 Data Package Options (please circle if required) Type I (Validation/non-CLP) MA MCP CT RCP Type III (Reduced non-CLP) Type IV (CLP SOW) Type VI (Raw Data Only) TX TRRP-13				EDD Required? Yes No Site-specific QC (MS/MSD/Dup)? Yes No (if yes, indicate QC sample and submit triplicate sample volume)				Date Time	

Explanation of Symbols and Abbreviations

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

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m³	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	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.		
>	greater than		
ppm	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.		
ppb	parts per billion		
Dry weight basis	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. All other results are reported on an as-received basis.		

Data Qualifiers:

C – result confirmed by reanalysis.

J - estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
A	TIC is a possible aldol-condensation product	B	Value is $<$ CRDL, but \geq IDL
B	Analyte was also detected in the blank	E	Estimated due to interference
C	Pesticide result confirmed by GC/MS	M	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	N	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	S	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	U	Compound was not detected
P	Concentration difference between primary and confirmation columns $>25\%$	W	Post digestion spike out of control limits
U	Compound was not detected	*	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

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.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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