



**Adriane Gifford**  
Project Manager

**Upstream EM**  
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July 23, 2020

Mr. Steven Arauza  
Environmental Protection Specialist, Northwest Area  
Colorado Oil and Gas Conservation Commission  
818 Taughenbaugh Blvd, Suite 103  
Rifle, CO 81650

**Re: Wilson Creek Landfarm - 2020 Background Arsenic Determination**  
**12 miles north of Meeker, Rio Blanco County, Colorado**  
**Centralized EP Waste Management Facility ID: 149002**

Dear Mr. Arauza:

Chevron Environmental Management Company (CEMC) is currently working at the Wilson Creek Unit (Site) on closure activities for the Onsite Landfarm Cell 2. Based on the limited space for stockpile management, CEMC has divided the Landfarm Cell 2 into several areas and planning to collect confirmation samples from each area and then backfill once the results have been confirmed to be less than the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 Concentration Levels. Analytical results from one of our confirmation samples and one sample we collected from the backfill source have been reviewed and have identified that arsenic exceeded the COGCC Table 910-1 Concentrations Level. The confirmation soil sample (LF-SW-01) was collected from the west wall of the Onsite Landfarm Cell 2 at a depth of 5.5 feet below ground surface (bgs). Arsenic was detected in this sample at 5.50 milligrams per kilogram (mg/kg). The sample of the import soil (Import-Soil-WG) to be used as Landfarm Cell 2 backfill was collected from OWL Western Gravel & Disposal. Arsenic was detected in this sample at 9.83 mg/kg. See attached laboratory analytical reports for the confirmation and import soil samples.

Per the COGCC 2008 Frequently Asked Questions (FAQs) Number 31, Chevron would like to request the Concentration Level of arsenic for the Landfarm Remediation project at 8.91 mg/kg for onsite soils and 12.3 mg/kg for import soils. The following justification is provided:

1. The COGCC Table 910-1, Footnote 1 stating "Consideration shall be given to background levels in native soils and ground water."
2. The Colorado Department of Public Health and Environment (CDPHE)-Hazardous Materials and Waste Management Division (HMWMD), Risk management Guidance for Evaluating Arsenic Concentrations in Soil, July 2014 (CDPHE-HMWMD, 2014) the Average of all Land Uses arsenic concentration is 11 mg/kg with a maximum of 14 mg/kg in Native Grassland, Rangeland, or Agriculture Areas.
3. As presented in the Wilson Creek Unit-Former Crude Shipping/Loadout Area (LOA) Additional Soil and Groundwater Assessment Work Plan (Document # 4021545293), an arsenic concentration of 7.13 mg/kg (TBS-DP-22-24') was detected in the Main Processing Area (MPA). All other COGCC Table 910-1 Contaminates of Concern (COCs) for this sample were below COGCC Table 910-1 Concentration Levels. An arsenic background concentration of 8.91 mg/kg ( $7.13 \text{ mg/kg} \times 1.25 = 8.91 \text{ mg/kg}$ ) was approved for the LOA. Based on proximity of the MPA/LOA to the Landfarm, the arsenic concentration of 8.91 mg/kg would be representative of native background arsenic concentrations in the area of the Landfarm.

4. Regarding the import soil sample (Import-Soil-WG) with arsenic detected at 9.83 mg/kg, OWL Western Gravel & Disposal is located approximately 20 miles to the southwest of the Site and confirmed that the import soil is native material, not affected by external sources of contamination, and any concentrations of arsenic would be naturally occurring. Due to the potential variability in arsenic concentrations of native sources, a background concentration was calculated as 12.3 mg/kg ( $9.83 \text{ mg/kg} \times 1.25 = 12.3 \text{ mg/kg}$ ).

Should you have any questions regarding this submittal, please contact Brent Lucyk at (517) 749-9405 or me at (832) 854-5620.

Respectfully,

**Chevron Environmental Management Company**  
on behalf of  
**Chevron U.S.A. Inc.**



Adriane Gifford  
Project Manager

Encl. Laboratory Analytical Results-Samples LF-SW-01 and Import-Soil-WG



Chris Beall  
Stantec Consulting, Inc.  
2890 E Cottonwood Pkwy, Suite 300  
Salt Lake City, UT 84121  
TEL: (801) 617-3200

RE: Chevron Wilson Creek / 182603883

Dear Chris Beall:

Lab Set ID: 2007408

3440 South 700 West  
Salt Lake City, UT 84119

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American West Analytical Laboratories received sample(s) on 7/14/2020 for the analyses presented in the following report.

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

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

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

This is a revision to a report originally issued 2/17/2020. Information herein supersedes that of the previously issued reports. Pages 1-3 have been revised.

Thank You,

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

Sample(s) were subcontracted for the following analyses:

Hexavalent Chromium



# INORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

## Analytical Results

## TOTAL METALS

3440 South 700 West  
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Kyle F. Gross  
 Laboratory Director

Jose Rocha  
 QA Officer

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	0.493	<b>5.50</b>	
Barium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	4.93	<b>144</b>	
Boron	mg/kg-dry	7/15/2020 1650h	7/16/2020 1530h	SW6010D	24.6	< 24.6	
Cadmium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	0.493	< 0.493	
Chromium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	9.86	<b>27.8</b>	~^*
Copper	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	14.8	<b>216</b>	
Lead	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	2.96	<b>17.6</b>	
Mercury	mg/kg-dry	7/16/2020 1841h	7/17/2020 1322h	SW7471B	0.0434	< 0.0434	
Nickel	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	19.7	< 19.7	
Selenium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	1.97	< 1.97	
Silver	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	0.296	< 0.296	
Zinc	mg/kg-dry	7/15/2020 1650h	7/16/2020 1725h	SW6020B	14.8	<b>78.9</b>	

^ - Reissue of a previously generated report. Information has been added, updated, or revised. Information herein supersedes that of the previously issued reports. .

\* - This sample was analyzed for Chromium, Hexavalent on 7/17/2020 by Pace Analytical and those results were used in the calculation for Trivalent Chromium.

~ - Based on the results for Total Chromium and Hexavalent Chromium, all the Chromium in the sample is in the Trivalent form. Cr3+ is 27.8 mg/kg-dry. (Calculated from 2 results with Reporting Limits of 9.86 mg/kg-dry and 2.34 mg/kg-dry)



# INORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

## Analytical Results

## TOTAL METALS

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Salt Lake City, UT 84119

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	0.491	9.83	
Barium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	4.91	273	
Boron	mg/kg-dry	7/15/2020 1650h	7/16/2020 1533h	SW6010D	24.6	53.4	
Cadmium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	0.491	0.592	
Chromium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	9.83	41.7	~^*
Copper	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	14.7	17.9	
Lead	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	2.95	12.1	
Mercury	mg/kg-dry	7/16/2020 1841h	7/17/2020 1331h	SW7471B	0.0434	< 0.0434	
Nickel	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	19.7	25.9	
Selenium	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	1.97	< 1.97	
Silver	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	0.295	< 0.295	
Zinc	mg/kg-dry	7/15/2020 1650h	7/16/2020 1728h	SW6020B	14.7	66.7	

^ - Reissue of a previously generated report. Information has been added, updated, or revised. Information herein supersedes that of the previously issued reports.

\* - This sample was analyzed for Chromium, Hexavalent on 7/17/2020 by Pace Analytical and those results were used in the calculation for Trivalent Chromium.

~ - Based on the results for Total Chromium and Hexavalent Chromium, all the Chromium in the sample is in the Trivalent form. Cr3+ is 41.7 mg/kg-dry. (Calculated from 2 results with Reporting Limits of 9.86 mg/kg-dry and 2.34 mg/kg-dry)



## INORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

### Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Conductivity	µmhos/cm		7/15/2020 520h	SW9050A	10.0	<b>537</b>	&
pH @ 25° C	pH Units		7/14/2020 1900h	SW9045D	1.00	<b>4.80</b>	H
Sodium Adsorption Ratio			7/16/2020 1219h	Calc.	0.0100	<b>0.115</b>	

& - Analysis is performed on a 1:1 DI water extract for soils.

H - Sample was received outside of the holding time.

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



## INORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

### Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Conductivity	µmhos/cm		7/15/2020 520h	SW9050A	10.0	<b>2,660</b>	&
pH @ 25° C	pH Units		7/14/2020 1900h	SW9045D	1.00	<b>8.15</b>	<b>H</b>
Sodium Adsorption Ratio			7/16/2020 1219h	Calc.	0.0100	<b>7.51</b>	

& - Analysis is performed on a 1:1 DI water extract for soils.

H - Sample was received outside of the holding time.

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Laboratory Director

Jose Rocha  
QA Officer



## ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001B  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8015-S-TPH-3546

### Analytical Results

TPH-DRO (C10-C28) by Method 8015D/3546

**Analyzed:** 7/16/2020 210h      **Extracted:** 7/15/2020 1242h  
**Units:** mg/kg-dry      **Dilution Factor:** 1      **Method:** SW8015D

Compound			CAS Number		Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)			68476-34-6		23.1	43.9	
Surrogate	Units: mg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene		460-00-4	21.9	38.48	56.8	10-160	

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Laboratory Director

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QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002B  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8015-S-TPH-3546

### Analytical Results

TPH-DRO (C10-C28) by Method 8015D/3546

**Analyzed:** 7/16/2020 306h **Extracted:** 7/15/2020 1242h  
**Units:** mg/kg-dry **Dilution Factor:** 1 **Method:** SW8015D

Compound			CAS Number		Reporting Limit	Analytical Result	Qual
Diesel Range Organics (DRO) (C10-C28)			68476-34-6		22.2	< 22.2	
Surrogate	Units: mg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 4-Bromofluorobenzene		460-00-4	20.9	36.93	56.6	10-160	

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Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001C  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8270E-S-SIM-3546

## Analytical Results

SVOA PNA SIM List by GC/MS Method 8270E/3546

**Analyzed:** 7/16/2020 2330h

**Extracted:** 7/15/2020 1108h

**Units:** µg/kg-dry

**Dilution Factor:** 1

**Method:** SW8270E

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Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1-Methylnaphthalene	90-12-0	7.76	20.0	
2-Methylnaphthalene	91-57-6	7.76	19.6	
Acenaphthene	83-32-9	7.76	< 7.76	
Acenaphthylene	208-96-8	7.76	< 7.76	
Anthracene	120-12-7	7.76	< 7.76	
Benz(a)anthracene	56-55-3	15.5	< 15.5	
Benzo(a)pyrene	50-32-8	7.76	< 7.76	
Benzo(b)fluoranthene	205-99-2	7.76	< 7.76	
Benzo(g,h,i)perylene	191-24-2	7.76	< 7.76	
Benzo(k)fluoranthene	207-08-9	7.76	< 7.76	
Chrysene	218-01-9	7.76	78.1	
Dibenz(a,h)anthracene	53-70-3	7.76	< 7.76	
Fluoranthene	206-44-0	7.76	8.79	
Fluorene	86-73-7	7.76	< 7.76	
Indene	95-13-6	7.76	< 7.76	
Indeno(1,2,3-cd)pyrene	193-39-5	7.76	< 7.76	
Naphthalene	91-20-3	7.76	10.9	
Phenanthrene	85-01-8	15.5	26.7	
Pyrene	129-00-0	7.76	< 7.76	

*Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.*



# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002C  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8270E-S-SIM-3546

## Analytical Results

SVOA PNA SIM List by GC/MS Method 8270E/3546

**Analyzed:** 7/17/2020 858h **Extracted:** 7/15/2020 1108h  
**Units:** µg/kg-dry **Dilution Factor:** 1 **Method:** SW8270E

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1-Methylnaphthalene	90-12-0	7.55	< 7.55	
2-Methylnaphthalene	91-57-6	7.55	< 7.55	
Acenaphthene	83-32-9	7.55	< 7.55	
Acenaphthylene	208-96-8	7.55	< 7.55	
Anthracene	120-12-7	7.55	< 7.55	
Benz(a)anthracene	56-55-3	15.1	< 15.1	
Benzo(a)pyrene	50-32-8	7.55	< 7.55	
Benzo(b)fluoranthene	205-99-2	7.55	< 7.55	
Benzo(g,h,i)perylene	191-24-2	7.55	< 7.55	
Benzo(k)fluoranthene	207-08-9	7.55	< 7.55	
Chrysene	218-01-9	7.55	< 7.55	
Dibenz(a,h)anthracene	53-70-3	7.55	< 7.55	
Fluoranthene	206-44-0	7.55	< 7.55	
Fluorene	86-73-7	7.55	< 7.55	
Indene	95-13-6	7.55	< 7.55	
Indeno(1,2,3-cd)pyrene	193-39-5	7.55	< 7.55	
Naphthalene	91-20-3	7.55	< 7.55	
Phenanthrene	85-01-8	15.1	< 15.1	
Pyrene	129-00-0	7.55	< 7.55	

*Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.*

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Laboratory Director

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# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001C  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8270E-S-3546

## Analytical Results

SVOA PNAs by GC/MS Method 8270E/3546

**Analyzed:** 7/17/2020 136h **Extracted:** 7/15/2020 1108h  
**Units:** µg/kg-dry **Dilution Factor:** 1 **Method:** SW8270E

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1-Methylnaphthalene	90-12-0	394	< 394	
2-Methylnaphthalene	91-57-6	394	< 394	
Acenaphthene	83-32-9	394	< 394	
Acenaphthylene	208-96-8	394	< 394	
Anthracene	120-12-7	394	< 394	
Benz(a)anthracene	56-55-3	394	< 394	
Benzo(a)pyrene	50-32-8	394	< 394	
Benzo(b)fluoranthene	205-99-2	394	< 394	
Benzo(g,h,i)perylene	191-24-2	394	< 394	
Benzo(k)fluoranthene	207-08-9	394	< 394	
Chrysene	218-01-9	394	< 394	
Dibenz(a,h)anthracene	53-70-3	394	< 394	
Fluoranthene	206-44-0	394	< 394	
Fluorene	86-73-7	394	< 394	
Indene	95-13-6	394	< 394	
Indeno(1,2,3-cd)pyrene	193-39-5	394	< 394	
Naphthalene	91-20-3	394	< 394	
Phenanthrene	85-01-8	394	< 394	
Pyrene	129-00-0	394	< 394	

Surrogate	Units: µg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	521	772.3	67.5	10-237	
Surr: 2-Fluorobiphenyl		321-60-8	228	386.1	58.9	10-179	
Surr: 2-Fluorophenol		367-12-4	402	772.3	52.0	10-186	
Surr: Nitrobenzene-d5		4165-60-0	204	386.1	52.8	10-166	
Surr: Phenol-d6		13127-88-3	401	772.3	51.9	10-194	
Surr: Terphenyl-d14		1718-51-0	240	386.1	62.1	10-265	

*Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.*



# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002C  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8270E-S-3546

## Analytical Results

SVOA PNAs by GC/MS Method 8270E/3546

**Analyzed:** 7/17/2020 245h **Extracted:** 7/15/2020 1108h  
**Units:** µg/kg-dry **Dilution Factor:** 1 **Method:** SW8270E

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1-Methylnaphthalene	90-12-0	383	< 383	
2-Methylnaphthalene	91-57-6	383	< 383	
Acenaphthene	83-32-9	383	< 383	
Acenaphthylene	208-96-8	383	< 383	
Anthracene	120-12-7	383	< 383	
Benz(a)anthracene	56-55-3	383	< 383	
Benzo(a)pyrene	50-32-8	383	< 383	
Benzo(b)fluoranthene	205-99-2	383	< 383	
Benzo(g,h,i)perylene	191-24-2	383	< 383	
Benzo(k)fluoranthene	207-08-9	383	< 383	
Chrysene	218-01-9	383	< 383	
Dibenz(a,h)anthracene	53-70-3	383	< 383	
Fluoranthene	206-44-0	383	< 383	
Fluorene	86-73-7	383	< 383	
Indene	95-13-6	383	< 383	
Indeno(1,2,3-cd)pyrene	193-39-5	383	< 383	
Naphthalene	91-20-3	383	< 383	
Phenanthrene	85-01-8	383	< 383	
Pyrene	129-00-0	383	< 383	

Surrogate	Units: µg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	608	751.0	81.0	10-237	
Surr: 2-Fluorobiphenyl		321-60-8	292	375.5	77.8	10-179	
Surr: 2-Fluorophenol		367-12-4	572	751.0	76.1	10-186	
Surr: Nitrobenzene-d5		4165-60-0	279	375.5	74.4	10-166	
Surr: Phenol-d6		13127-88-3	519	751.0	69.1	10-194	
Surr: Terphenyl-d14		1718-51-0	302	375.5	80.4	10-265	



# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-001A  
**Client Sample ID:** LF-SW-01  
**Collection Date:** 7/13/2020 1356h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8260D-S-PPM

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260D

**Analyzed:** 7/15/2020 1844h

**Extracted:**

**Units:** mg/kg-dry

**Dilution Factor:** 2.5

**Method:** SW8260D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00293	< 0.00293	
Ethylbenzene	100-41-4	0.00585	< 0.00585	
Toluene	108-88-3	0.00585	< 0.00585	
TPH C6-C10 (GRO)		0.0585	<b>0.107</b>	
Xylenes, Total	1330-20-7	0.00585	< 0.00585	

Surrogate	Units: mg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	0.144	0.1464	98.4	70-132	
Surr: 4-Bromofluorobenzene		460-00-4	0.153	0.1464	105	70-125	
Surr: Dibromofluoromethane		1868-53-7	0.143	0.1464	98.0	70-133	
Surr: Toluene-d8		2037-26-5	0.148	0.1464	101	70-123	

*Sampling and analytical preparation performed by method 5030A modified for analysis of soil samples collected in 2 or 4 oz jars.*

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



# ORGANIC ANALYTICAL REPORT

**Client:** Stantec Consulting, Inc.  
**Project:** Chevron Wilson Creek / 182603883  
**Lab Sample ID:** 2007408-002A  
**Client Sample ID:** Import-Soil-WG  
**Collection Date:** 7/14/2020 1116h  
**Received Date:** 7/14/2020 1634h

**Contact:** Chris Beall

Test Code: 8260D-S-PPM

## Analytical Results

VOAs MBTEXN/GRO by GC/MS Method 8260D

**Analyzed:** 7/15/2020 1904h

**Extracted:**

**Units:** mg/kg-dry

**Dilution Factor:** 2.38

**Method:** SW8260D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00268	< 0.00268	
Ethylbenzene	100-41-4	0.00537	< 0.00537	
Toluene	108-88-3	0.00537	< 0.00537	
TPH C6-C10 (GRO)		0.0537	< 0.0537	
Xylenes, Total	1330-20-7	0.00537	< 0.00537	

Surrogate	Units: mg/kg-dry	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	0.132	0.1341	98.5	70-132	
Surr: 4-Bromofluorobenzene		460-00-4	0.133	0.1341	98.9	70-125	
Surr: Dibromofluoromethane		1868-53-7	0.129	0.1341	96.3	70-133	
Surr: Toluene-d8		2037-26-5	0.131	0.1341	97.8	70-123	

*Sampling and analytical preparation performed by method 5030A modified for analysis of soil samples collected in 2 or 4 oz jars.*

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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** ME  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-71149													
Date Analyzed:		07/16/2020 1258h											
Test Code:		6010D-S											
Boron	96.9	mg/kg	SW6010D	5.52	20.0	100.0	0	96.9	80 - 120				
Lab Sample ID: LCS-71149													
Date Analyzed:		07/16/2020 1707h											
Test Code:		6020B-S											
Arsenic	18.6	mg/kg	SW6020B	0.116	0.400	20.00	0	92.8	85 - 115				
Barium	18.2	mg/kg	SW6020B	2.30	4.00	20.00	0	90.8	85 - 115				
Cadmium	18.4	mg/kg	SW6020B	0.0640	0.400	20.00	0	92.1	85 - 115				
Chromium	19.5	mg/kg	SW6020B	2.36	8.00	20.00	0	97.7	85 - 115				
Copper	19.8	mg/kg	SW6020B	3.08	12.0	20.00	0	99.2	85 - 115				
Lead	18.9	mg/kg	SW6020B	1.55	2.40	20.00	0	94.5	85 - 115				
Nickel	19.5	mg/kg	SW6020B	1.36	16.0	20.00	0	97.4	85 - 115				
Selenium	17.6	mg/kg	SW6020B	0.177	1.60	20.00	0	88.0	85 - 115				
Silver	18.9	mg/kg	SW6020B	0.0604	0.240	20.00	0	94.6	85 - 115				
Zinc	96.7	mg/kg	SW6020B	2.34	12.0	100.0	0	96.7	85 - 115				
Lab Sample ID: LCS-71187													
Date Analyzed:		07/17/2020 1320h											
Test Code:		HG-S-7471B											
Mercury	0.441	mg/kg	SW7471B	0.00938	0.0400	0.4000	0	110	80 - 120				





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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** ME  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-71149													
Date Analyzed:		07/16/2020 1256h											
Test Code:		6010D-S											
Date Prepared:		07/15/2020 1650h											
Boron	< 20.0	mg/kg	SW6010D	5.52	20.0								
Lab Sample ID: MB-71149													
Date Analyzed:		07/16/2020 1704h											
Test Code:		6020B-S											
Date Prepared:		07/15/2020 1650h											
Arsenic	< 0.400	mg/kg	SW6020B	0.116	0.400								
Barium	< 4.00	mg/kg	SW6020B	2.30	4.00								
Cadmium	< 0.400	mg/kg	SW6020B	0.0640	0.400								
Chromium	< 8.00	mg/kg	SW6020B	2.36	8.00								
Copper	< 12.0	mg/kg	SW6020B	3.08	12.0								
Lead	< 2.40	mg/kg	SW6020B	1.55	2.40								
Nickel	< 16.0	mg/kg	SW6020B	1.36	16.0								
Selenium	< 1.60	mg/kg	SW6020B	0.177	1.60								
Silver	< 0.240	mg/kg	SW6020B	0.0604	0.240								
Zinc	< 12.0	mg/kg	SW6020B	2.34	12.0								
Lab Sample ID: MB-71187													
Date Analyzed:		07/17/2020 1318h											
Test Code:		HG-S-7471B											
Date Prepared:		07/16/2020 1841h											
Mercury	< 0.0400	mg/kg	SW7471B	0.00938	0.0400								



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## QC SUMMARY REPORT

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** ME  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 2007449-001AMS</b>													
Date Analyzed:		07/16/2020 1525h											
Test Code:		6010D-S											
Boron	517	mg/kg	SW6010D	29.1	105	526.3	0	98.3	75 - 125				
<b>Lab Sample ID: 2007449-001AMS</b>													
Date Analyzed:		07/17/2020 1029h											
Test Code:		6020B-S											
Arsenic	101	mg/kg	SW6020B	0.611	2.11	105.3	0	96.2	75 - 125				
Barium	100	mg/kg	SW6020B	12.1	21.1	105.3	0	95.4	75 - 125				
Cadmium	99.7	mg/kg	SW6020B	0.337	2.11	105.3	0	94.7	75 - 125				
Chromium	102	mg/kg	SW6020B	12.4	42.1	105.3	0	96.8	75 - 125				
Copper	103	mg/kg	SW6020B	16.2	63.2	105.3	0	98.3	75 - 125				
Lead	105	mg/kg	SW6020B	8.15	12.6	105.3	0	99.7	75 - 125				
Nickel	105	mg/kg	SW6020B	7.16	84.2	105.3	0	99.3	75 - 125				
Selenium	97.4	mg/kg	SW6020B	0.931	8.42	105.3	0	92.5	75 - 125				
Silver	103	mg/kg	SW6020B	0.318	1.26	105.3	0	98.3	75 - 125				
Zinc	514	mg/kg	SW6020B	12.3	63.2	526.3	0	97.7	75 - 125				
<b>Lab Sample ID: 2007408-001DMS</b>													
Date Analyzed:		07/17/2020 1327h											
Test Code:		HG-S-7471B											
Mercury	0.460	mg/kg-dry	SW7471B	0.00981	0.0418	0.4181	0.023	105	80 - 120				



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** ME  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007449-001AMSD													
Date Analyzed:		07/16/2020 1527h											
Test Code:		6010D-S											
Boron	434	mg/kg	SW6010D	28.4	103	513.9	0	84.4	75 - 125	517	17.6	20	
Lab Sample ID: 2007449-001AMSD													
Date Analyzed:		07/17/2020 1032h											
Test Code:		6020B-S											
Arsenic	87.3	mg/kg	SW6020B	0.596	2.06	102.8	0	85.0	75 - 125	101	14.8	20	
Barium	87.4	mg/kg	SW6020B	11.8	20.6	102.8	0	85.1	75 - 125	100	13.8	20	
Cadmium	84.8	mg/kg	SW6020B	0.329	2.06	102.8	0	82.5	75 - 125	99.7	16.1	20	
Chromium	87.4	mg/kg	SW6020B	12.1	41.1	102.8	0	85.0	75 - 125	102	15.4	20	
Copper	88.6	mg/kg	SW6020B	15.8	61.7	102.8	0	86.2	75 - 125	103	15.4	20	
Lead	89.6	mg/kg	SW6020B	7.95	12.3	102.8	0	87.1	75 - 125	105	15.8	20	
Nickel	90.7	mg/kg	SW6020B	6.99	82.2	102.8	0	88.3	75 - 125	105	14.1	20	
Selenium	84.0	mg/kg	SW6020B	0.909	8.22	102.8	0	81.8	75 - 125	97.4	14.7	20	
Silver	88.3	mg/kg	SW6020B	0.310	1.23	102.8	0	85.9	75 - 125	103	15.8	20	
Zinc	448	mg/kg	SW6020B	12.0	61.7	513.9	0	87.2	75 - 125	514	13.7	20	
Lab Sample ID: 2007408-001DMSD													
Date Analyzed:		07/17/2020 1329h											
Test Code:		HG-S-7471B											
Mercury	0.468	mg/kg-dry	SW7471B	0.00981	0.0418	0.4181	0.023	106	80 - 120	0.46	1.67	20	



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** W/C  
**QC Type:** DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Date Analyzed: 07/15/2020 520h													
Lab Sample ID: 2007408-002DDUP	2,660	µmhos/cm	SW9050A	0.500	10.0					2660	0.188	10	&
Test Code: COND-S-9050A													
Date Analyzed: 07/14/2020 1900h													
Lab Sample ID: 2007371-001ADUP	6.99	pH Units	SW9045D	1.00	1.00					6.95	0.574	10	H
Test Code: PH-9045D													
Date Analyzed: 07/14/2020 1900h													
Lab Sample ID: 2007403-011ADUP	4.55	pH Units	SW9045D	1.00	1.00					4.54	0.220	10	
Test Code: PH-9045D													

& - Analysis is performed on a 1:1 DI water extract for soils.  
H - Sample was received outside of the holding time.



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** W/C  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Date Analyzed: 07/15/2020 520h													
Conductivity	1,000	µmhos/cm	SW9050A	0.500	10.0	1,000	0	100	98 - 102				
Date Analyzed: 07/14/2020 1900h													
Lab Sample ID:	LCS-R140951												
Test Code:	PH-9045D												
pH @ 25° C	8.98	pH Units	SW9045D	1.00	1.00	9,000	0	99.8	98 - 102				



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## QC SUMMARY REPORT

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** W/C  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	MB-R140958	Date Analyzed:	07/15/2020 520h										
Test Code:	COND-S-9050A												
Conductivity	< 10.0	µmhos/cm	SW9050A	0.500	10.0								



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QC SUMMARY REPORT

Client: Stantec Consulting, Inc.  
Lab Set ID: 2007408  
Project: Chevron Wilson Creek / 182603883

Contact: Chris Beall  
Dept: GC  
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-71132	Date Analyzed:	07/16/2020 151h											
Test Code: 8015-S-TPH-3546	Date Prepared:	07/15/2020 1242h											
Diesel Range Organics (DRO) (C10-C28)	145	mg/kg	SW8015D	14.2	20.0	166.7	0	87.2	48 - 115				
Surr: 4-Bromofluorobenzene	21.7	mg/kg	SW8015D			33.33		65.1	24 - 112				



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** GC  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-71132	Date Analyzed:	07/16/2020 133h											
Test Code: 8015-S-TPH-3546	Date Prepared:	07/15/2020 1242h											
Diesel Range Organics (DRO) (C10-C28)	< 20.0	mg/kg	SW8015D	14.2	20.0								
Surr: 4-Bromofluorobenzene	21.1	mg/kg	SW8015D			33.33		63.2	24 - 112				





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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

## QC SUMMARY REPORT

**Contact:** Chris Beall  
**Dept:** GC  
**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007408-001BMS													
Test Code:	8015-S-TPH-3546												
Diesel Range Organics (DRO) (C10-C28)	246	mg/kg-dry	SW8015D	16.3	22.9	191.0	43.9	106	10 - 230				
Surr: 4-Bromofluorobenzene	21.5	mg/kg-dry	SW8015D			38.20		56.3	10 - 160				
Lab Sample ID: 2007448-001AMS													
Test Code:	8015-S-TPH-3546												
Diesel Range Organics (DRO) (C10-C28)	< 5,380	mg/kg-dry	SW8015D	3,820	5,380	179.4	0	0	10 - 230				S
Surr: 4-Bromofluorobenzene	31.3	mg/kg-dry	SW8015D			35.89		87.1	10 - 160				

2007448-001AMS: The reporting limits were raised due to sample matrix interferences.

S - Sample dilution required due to sample matrix. MS spiking compound recoveries are outside of the control limits as expected due to being diluted out.



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

## QC SUMMARY REPORT

**Contact:** Chris Beall  
**Dept:** GC  
**QC Type:** MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
<b>Lab Sample ID: 2007408-001BMSD</b>													
Test Code:	8015-S-TPH-3546												
Diesel Range Organics (DRO) (C10-C28)	276	mg/kg-dry	SW8015D	16.4	23.1	192.1	43.9	121	10 - 230	246	11.6	25	
Surr: 4-Bromofluorobenzene	22.5	mg/kg-dry	SW8015D			38.42		58.5	10 - 160				
<b>Lab Sample ID: 2007448-001AMS</b>													
Test Code:	8015-S-TPH-3546												
Diesel Range Organics (DRO) (C10-C28)	< 5.410	mg/kg-dry	SW8015D	3.840	5.410	180.3	0	0	10 - 230	0	0	25	S
Surr: 4-Bromofluorobenzene	28.3	mg/kg-dry	SW8015D			36.06		78.4	10 - 160				

2007448-001AMS: The reporting limits were raised due to sample matrix interferences.

S - Sample dilution required due to sample matrix. MS spiking compound recoveries are outside of the control limits as expected due to being diluted out.



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Kyle F. Gross  
Laboratory Director  
  
Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** MSSV  
**QC Type:** LCS

**QC SUMMARY REPORT**

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-71124													
Test Code:		8270E-S-3546	Date Analyzed: 07/16/2020 2210h										
			Date Prepared: 07/15/2020 1108h										
1-Methylnaphthalene	517	µg/kg	SW8270E	40.3	340	666.7	0	77.5	23 - 100				
2-Methylnaphthalene	522	µg/kg	SW8270E	38.3	340	666.7	0	78.3	23 - 100				
Acenaphthene	549	µg/kg	SW8270E	37.3	340	666.7	0	82.3	24 - 110				
Acenaphthylene	540	µg/kg	SW8270E	34.6	340	666.7	0	80.9	26 - 100				
Anthracene	577	µg/kg	SW8270E	37.8	340	666.7	0	86.5	40 - 119				
Benz(a)anthracene	562	µg/kg	SW8270E	42.7	340	666.7	0	84.3	42 - 114				
Benzo(a)pyrene	573	µg/kg	SW8270E	54.8	340	666.7	0	85.9	42 - 119				
Benzo(b)fluoranthene	562	µg/kg	SW8270E	58.4	340	666.7	0	84.3	42 - 119				
Benzo(g,h,i)perylene	472	µg/kg	SW8270E	53.8	340	666.7	0	70.8	11 - 100				
Benzo(k)fluoranthene	593	µg/kg	SW8270E	45.9	340	666.7	0	89.0	45 - 121				
Chrysene	577	µg/kg	SW8270E	43.9	340	666.7	0	86.6	26 - 115				
Dibenz(a,h)anthracene	584	µg/kg	SW8270E	58.3	340	666.7	0	87.6	44 - 122				
Fluoranthene	649	µg/kg	SW8270E	64.3	340	666.7	0	97.3	27 - 120				
Fluorene	566	µg/kg	SW8270E	41.5	340	666.7	0	85.0	25 - 110				
Indene	451	µg/kg	SW8270E	39.9	340	666.7	0	67.6	10 - 100				
Indeno(1,2,3-c)pyrene	583	µg/kg	SW8270E	50.5	340	666.7	0	87.4	43 - 121				
Naphthalene	513	µg/kg	SW8270E	61.6	340	666.7	0	76.9	23 - 100				
Phenanthrene	561	µg/kg	SW8270E	63.3	340	666.7	0	84.1	40 - 118				
Pyrene	553	µg/kg	SW8270E	63.6	340	666.7	0	82.9	38 - 122				
Surr: 2,4,6-Tribromophenol	499	µg/kg	SW8270E			666.7		74.9	10 - 140				
Surr: 2-Fluorobiphenyl	242	µg/kg	SW8270E			333.3		72.7	25 - 126				
Surr: 2-Fluorophenol	452	µg/kg	SW8270E			666.7		67.8	15 - 121				
Surr: Nitrobenzene-d5	228	µg/kg	SW8270E			333.3		68.3	20 - 117				
Surr: Phenol-d6	415	µg/kg	SW8270E			666.7		62.3	22 - 121				
Surr: Terphenyl-d14	259	µg/kg	SW8270E			333.3		77.8	26 - 143				

LCS-71124: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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Kyle F. Gross  
Laboratory Director  
  
Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

## QC SUMMARY REPORT

**Contact:** Chris Beall  
**Dept:** MSSV  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-71124													
Test Code: 8270E-S-3546													
Date Analyzed: 07/16/2020 2147h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	< 340	µg/kg	SW8270E	40.3	340								
2-Methylnaphthalene	< 340	µg/kg	SW8270E	38.3	340								
Acenaphthene	< 340	µg/kg	SW8270E	37.3	340								
Acenaphthylene	< 340	µg/kg	SW8270E	34.6	340								
Anthracene	< 340	µg/kg	SW8270E	37.8	340								
Benz(a)anthracene	< 340	µg/kg	SW8270E	42.7	340								
Benzo(a)pyrene	< 340	µg/kg	SW8270E	54.8	340								
Benzo(b)fluoranthene	< 340	µg/kg	SW8270E	58.4	340								
Benzo(g,h,i)perylene	< 340	µg/kg	SW8270E	53.8	340								
Benzo(k)fluoranthene	< 340	µg/kg	SW8270E	45.9	340								
Chrysene	< 340	µg/kg	SW8270E	43.9	340								
Dibenz(a,h)anthracene	< 340	µg/kg	SW8270E	58.3	340								
Fluoranthene	< 340	µg/kg	SW8270E	64.3	340								
Fluorene	< 340	µg/kg	SW8270E	41.5	340								
Indene	< 340	µg/kg	SW8270E	39.9	340								
Indeno(1,2,3-cd)pyrene	< 340	µg/kg	SW8270E	50.5	340								
Naphthalene	< 340	µg/kg	SW8270E	61.6	340								
Phenanthrene	< 340	µg/kg	SW8270E	63.3	340								
Pyrene	< 340	µg/kg	SW8270E	63.6	340								
Surr: 2,4,6-Tribromophenol	413	µg/kg	SW8270E			666.7		61.9	10 - 140				
Surr: 2-Fluorobiphenyl	238	µg/kg	SW8270E			333.3		71.4	25 - 126				
Surr: 2-Fluorophenol	433	µg/kg	SW8270E			666.7		65.0	15 - 121				
Surr: Nitrobenzene-d5	213	µg/kg	SW8270E			333.3		64.0	20 - 117				
Surr: Phenol-d6	383	µg/kg	SW8270E			666.7		57.4	22 - 121				
Surr: Terphenyl-d14	251	µg/kg	SW8270E			333.3		75.2	26 - 143				

MB-71124: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** MSSV  
**QC Type:** MS

## QC SUMMARY REPORT

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007408-001CMS													
Test Code: 8270E-S-3546													
Date Analyzed: 07/17/2020 159h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	590	µg/kg-dry	SW8270E	46.4	392	767.8	0	76.9	23 - 100				
2-Methylnaphthalene	595	µg/kg-dry	SW8270E	44.1	392	767.8	0	77.5	23 - 100				
Acenaphthene	619	µg/kg-dry	SW8270E	43.0	392	767.8	0	80.6	24 - 110				
Acenaphthylene	617	µg/kg-dry	SW8270E	39.8	392	767.8	0	80.4	26 - 100				
Anthracene	649	µg/kg-dry	SW8270E	43.5	392	767.8	0	84.6	40 - 119				
Benz(a)anthracene	630	µg/kg-dry	SW8270E	49.2	392	767.8	0	82.1	42 - 114				
Benzo(a)pyrene	638	µg/kg-dry	SW8270E	63.1	392	767.8	0	83.1	42 - 119				
Benzo(b)fluoranthene	639	µg/kg-dry	SW8270E	67.3	392	767.8	0	83.2	42 - 119				
Benzo(g,h,i)perylene	505	µg/kg-dry	SW8270E	62.0	392	767.8	0	65.7	11 - 100				
Benzo(k)fluoranthene	638	µg/kg-dry	SW8270E	52.9	392	767.8	0	83.1	45 - 121				
Chrysene	646	µg/kg-dry	SW8270E	50.6	392	767.8	63.2	75.9	26 - 115				
Dibenz(a,h)anthracene	660	µg/kg-dry	SW8270E	67.1	392	767.8	0	86.0	44 - 122				
Fluoranthene	724	µg/kg-dry	SW8270E	74.0	392	767.8	0	94.2	27 - 120				
Fluorene	635	µg/kg-dry	SW8270E	47.8	392	767.8	0	82.7	25 - 110				
Indene	502	µg/kg-dry	SW8270E	45.9	392	767.8	0	65.4	10 - 100				
Indeno(1,2,3-cd)pyrene	649	µg/kg-dry	SW8270E	58.2	392	767.8	0	84.6	43 - 121				
Naphthalene	591	µg/kg-dry	SW8270E	70.9	392	767.8	0	76.9	23 - 100				
Phenanthrene	642	µg/kg-dry	SW8270E	72.9	392	767.8	0	83.6	40 - 118				
Pyrene	620	µg/kg-dry	SW8270E	73.2	392	767.8	0	80.8	38 - 122				
Surr: 2,4,6-Tribromophenol	635	µg/kg-dry	SW8270E			767.8		82.7	10 - 140				
Surr: 2-Fluorobiphenyl	267	µg/kg-dry	SW8270E			383.9		69.6	25 - 126				
Surr: 2-Fluorophenol	490	µg/kg-dry	SW8270E			767.8		63.9	15 - 121				
Surr: Nitrobenzene-d5	249	µg/kg-dry	SW8270E			383.9		64.8	20 - 117				
Surr: Phenol-d6	456	µg/kg-dry	SW8270E			767.8		59.4	22 - 121				
Surr: Terphenyl-d14	282	µg/kg-dry	SW8270E			383.9		73.5	26 - 143				



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Laboratory Director

Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.

**Lab Set ID:** 2007408

**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall

**Dept:** MSSV

**QC Type:** MSD

## QC SUMMARY REPORT

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007408-001C/MSD													
Test Code: 8270E-S-3546													
Date Analyzed: 07/17/2020 222h					Date Prepared: 07/15/2020 1108h								
1-Methylnaphthalene	632	µg/kg-dry	SW8270E	46.3	391	765.7	0	82.5	23 - 100	590	6.75	35	
2-Methylnaphthalene	636	µg/kg-dry	SW8270E	44.0	391	765.7	0	83.1	23 - 100	595	6.67	35	
Acenaphthene	636	µg/kg-dry	SW8270E	42.8	391	765.7	0	83.1	24 - 110	619	2.68	35	
Acenaphthylene	632	µg/kg-dry	SW8270E	39.7	391	765.7	0	82.6	26 - 100	617	2.41	35	
Anthracene	662	µg/kg-dry	SW8270E	43.4	391	765.7	0	86.4	40 - 119	649	1.89	35	
Benz(a)anthracene	636	µg/kg-dry	SW8270E	49.0	391	765.7	0	83.0	42 - 114	630	0.911	35	
Benzo(a)pyrene	642	µg/kg-dry	SW8270E	62.9	391	765.7	0	83.8	42 - 119	638	0.577	35	
Benzo(b)fluoranthene	657	µg/kg-dry	SW8270E	67.1	391	765.7	0	85.7	42 - 119	639	2.74	35	
Benzo(g,h,i)perylene	506	µg/kg-dry	SW8270E	61.8	391	765.7	0	66.0	11 - 100	505	0.190	35	
Benzo(k)fluoranthene	636	µg/kg-dry	SW8270E	52.7	391	765.7	0	83.0	45 - 121	638	0.347	35	
Chrysene	656	µg/kg-dry	SW8270E	50.4	391	765.7	63.2	77.4	26 - 115	646	1.51	35	
Dibenz(a,h)anthracene	661	µg/kg-dry	SW8270E	67.0	391	765.7	0	86.3	44 - 122	660	0.0818	35	
Fluoranthene	754	µg/kg-dry	SW8270E	73.9	391	765.7	0	98.5	27 - 120	724	4.11	35	
Fluorene	646	µg/kg-dry	SW8270E	47.7	391	765.7	0	84.4	25 - 110	635	1.72	35	
Indene	573	µg/kg-dry	SW8270E	45.8	391	765.7	0	74.8	10 - 100	502	13.2	35	
Indeno(1,2,3-cd)pyrene	652	µg/kg-dry	SW8270E	58.0	391	765.7	0	85.2	43 - 121	649	0.455	35	
Naphthalene	636	µg/kg-dry	SW8270E	70.8	391	765.7	0	83.1	23 - 100	591	7.46	35	
Phenanthrene	674	µg/kg-dry	SW8270E	72.7	391	765.7	0	88.0	40 - 118	642	4.87	35	
Pyrene	644	µg/kg-dry	SW8270E	73.1	391	765.7	0	84.1	38 - 122	620	3.79	35	
Surr: 2,4,6-Tribromophenol	630	µg/kg-dry	SW8270E			765.7		82.3	10 - 140				
Surr: 2-Fluorobiphenyl	289	µg/kg-dry	SW8270E			382.9		75.6	25 - 126				
Surr: 2-Fluorophenol	550	µg/kg-dry	SW8270E			765.7		71.9	15 - 121				
Surr: Nitrobenzene-d5	279	µg/kg-dry	SW8270E			382.9		72.7	20 - 117				
Surr: Phenol-d6	499	µg/kg-dry	SW8270E			765.7		65.1	22 - 121				
Surr: Terphenyl-d14	287	µg/kg-dry	SW8270E			382.9		75.0	26 - 143				



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Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

## QC SUMMARY REPORT

**Contact:** Chris Beall  
**Dept:** MSSV  
**QC Type:** LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-71124													
Test Code: 8270E-S-SIM-3546													
Date Analyzed: 07/16/2020 2307h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	597	µg/kg	SW8270E	95.8	134	666.7	0	89.6	33 - 123				
2-Methylnaphthalene	598	µg/kg	SW8270E	119	134	666.7	0	89.7	32 - 126				
Acenaphthene	549	µg/kg	SW8270E	35.6	134	666.7	0	82.3	26 - 147				
Acenaphthylene	590	µg/kg	SW8270E	80.6	134	666.7	0	88.5	26 - 144				
Anthracene	587	µg/kg	SW8270E	51.6	134	666.7	0	88.1	23 - 158				
Benz(a)anthracene	731	µg/kg	SW8270E	92.6	268	666.7	0	110	25 - 155				
Benzo(a)pyrene	747	µg/kg	SW8270E	65.8	134	666.7	0	112	28 - 145				
Benzo(b)fluoranthene	704	µg/kg	SW8270E	65.6	134	666.7	0	106	29 - 146				
Benzo(g,h,i)perylene	592	µg/kg	SW8270E	60.8	134	666.7	0	88.8	10 - 146				
Benzo(k)fluoranthene	781	µg/kg	SW8270E	82.2	134	666.7	0	117	36 - 149				
Chrysene	643	µg/kg	SW8270E	82.6	134	666.7	0	96.4	24 - 162				
Dibenz(a,h)anthracene	712	µg/kg	SW8270E	71.2	134	666.7	0	107	29 - 146				
Fluoranthene	627	µg/kg	SW8270E	80.6	134	666.7	0	94.1	24 - 157				
Fluorene	590	µg/kg	SW8270E	43.2	134	666.7	0	88.6	28 - 158				
Indene	496	µg/kg	SW8270E	25.0	134	666.7	0	74.4	33 - 112				
Indeno(1,2,3-cd)pyrene	709	µg/kg	SW8270E	70.2	134	666.7	0	106	31 - 142				
Naphthalene	566	µg/kg	SW8270E	78.0	134	666.7	0	84.9	37 - 121				
Phenanthrene	563	µg/kg	SW8270E	104	268	666.7	0	84.5	23 - 156				
Pyrene	630	µg/kg	SW8270E	75.8	134	666.7	0	94.5	22 - 160				

LCS-71124: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.





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**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** MSSV  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-71124													
Test Code: 8270E-S-SIM-3546													
Date Analyzed: 07/16/2020 2245h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	< 6.70	µg/kg	SW8270E	4.79	6.70								
2-Methylnaphthalene	< 6.70	µg/kg	SW8270E	5.97	6.70								
Acenaphthene	< 6.70	µg/kg	SW8270E	1.78	6.70								
Acenaphthylene	< 6.70	µg/kg	SW8270E	4.03	6.70								
Anthracene	< 6.70	µg/kg	SW8270E	2.58	6.70								
Benz(a)anthracene	< 13.4	µg/kg	SW8270E	4.63	13.4								
Benzo(a)pyrene	< 6.70	µg/kg	SW8270E	3.29	6.70								
Benzo(b)fluoranthene	< 6.70	µg/kg	SW8270E	3.28	6.70								
Benzo(g,h,i)perylene	< 6.70	µg/kg	SW8270E	3.04	6.70								
Benzo(k)fluoranthene	< 6.70	µg/kg	SW8270E	4.11	6.70								
Chrysene	< 6.70	µg/kg	SW8270E	4.13	6.70								
Dibenz(a,h)anthracene	< 6.70	µg/kg	SW8270E	3.56	6.70								
Fluoranthene	< 6.70	µg/kg	SW8270E	4.03	6.70								
Fluorene	< 6.70	µg/kg	SW8270E	2.16	6.70								
Indene	< 6.70	µg/kg	SW8270E	1.25	6.70								
Indeno(1,2,3-cd)pyrene	< 6.70	µg/kg	SW8270E	3.51	6.70								
Naphthalene	< 6.70	µg/kg	SW8270E	3.90	6.70								
Phenanthrene	< 13.4	µg/kg	SW8270E	5.22	13.4								
Pyrene	< 6.70	µg/kg	SW8270E	3.79	6.70								

MB-71124: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.





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**Client:** Stantec Consulting, Inc.

**Lab Set ID:** 2007408

**Project:** Chevron Wilson Creek / 182603883

## QC SUMMARY REPORT

**Contact:** Chris Beall

**Dept:** MSSV

**QC Type:** MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007408-001CMS													
Test Code: 8270E-S-SIM-3546													
Date Analyzed: 07/16/2020 2352h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	674	µg/kg-dry	SW8270E	110	154	767.8	20	85.2	33 - 123				
2-Methylnaphthalene	708	µg/kg-dry	SW8270E	138	154	767.8	19.6	89.7	32 - 126				
Acenaphthene	606	µg/kg-dry	SW8270E	41.0	154	767.8	3.68	78.4	26 - 147				
Acenaphthylene	660	µg/kg-dry	SW8270E	92.8	154	767.8	0	86.0	26 - 144				
Anthracene	687	µg/kg-dry	SW8270E	59.4	154	767.8	0	89.5	23 - 158				
Benz(a)anthracene	884	µg/kg-dry	SW8270E	107	309	767.8	92.8	103	25 - 155				
Benzo(a)pyrene	822	µg/kg-dry	SW8270E	75.8	154	767.8	0	107	28 - 145				
Benzo(b)fluoranthene	841	µg/kg-dry	SW8270E	75.5	154	767.8	6.27	109	29 - 146				
Benzo(g,h,i)perylene	640	µg/kg-dry	SW8270E	70.0	154	767.8	0	83.3	10 - 146				
Benzo(k)fluoranthene	851	µg/kg-dry	SW8270E	94.7	154	767.8	0	111	36 - 149				
Chrysene	752	µg/kg-dry	SW8270E	95.1	154	767.8	0	98.0	24 - 162				
Dibenz(a,h)anthracene	928	µg/kg-dry	SW8270E	82.0	154	767.8	0	121	29 - 146				
Fluoranthene	766	µg/kg-dry	SW8270E	92.8	154	767.8	8.79	98.6	24 - 157				
Fluorene	645	µg/kg-dry	SW8270E	49.7	154	767.8	4.66	83.4	28 - 158				
Indene	614	µg/kg-dry	SW8270E	28.8	154	767.8	0	79.9	33 - 112				
Indeno(1,2,3-cd)pyrene	880	µg/kg-dry	SW8270E	80.8	154	767.8	0	115	31 - 142				
Naphthalene	671	µg/kg-dry	SW8270E	89.8	154	767.8	10.9	85.9	37 - 121				
Phenanthrene	639	µg/kg-dry	SW8270E	120	309	767.8	26.7	79.8	23 - 156				
Pyrene	769	µg/kg-dry	SW8270E	87.3	154	767.8	7.29	99.1	22 - 160				

2007408-001CMS: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.

**Lab Set ID:** 2007408

**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall

**Dept:** MSSV

**QC Type:** MSD

## QC SUMMARY REPORT

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007408-001C/MSD													
Test Code: 8270E-S-SIM-3546													
Date Analyzed: 07/17/2020 015h													
Date Prepared: 07/15/2020 1108h													
1-Methylnaphthalene	657	µg/kg-dry	SW8270E	110	154	765.7	20	83.2	33 - 123	674	2.52	35	
2-Methylnaphthalene	517	µg/kg-dry	SW8270E	137	154	765.7	19.6	64.9	32 - 126	708	31.3	35	
Acenaphthene	586	µg/kg-dry	SW8270E	40.9	154	765.7	3.68	76.0	26 - 147	606	3.38	35	
Acenaphthylene	631	µg/kg-dry	SW8270E	92.6	154	765.7	0	82.4	26 - 144	660	4.49	35	
Anthracene	647	µg/kg-dry	SW8270E	59.3	154	765.7	0	84.5	23 - 158	687	6.05	35	
Benz(a)anthracene	846	µg/kg-dry	SW8270E	106	308	765.7	92.8	98.4	25 - 155	884	4.30	35	
Benzo(a)pyrene	812	µg/kg-dry	SW8270E	75.6	154	765.7	0	106	28 - 145	822	1.22	35	
Benzo(b)fluoranthene	825	µg/kg-dry	SW8270E	75.3	154	765.7	6.27	107	29 - 146	841	1.97	35	
Benzo(g,h,i)perylene	606	µg/kg-dry	SW8270E	69.8	154	765.7	0	79.2	10 - 146	640	5.33	35	
Benzo(k)fluoranthene	812	µg/kg-dry	SW8270E	94.4	154	765.7	0	106	36 - 149	851	4.74	35	
Chrysene	725	µg/kg-dry	SW8270E	94.9	154	765.7	0	94.7	24 - 162	752	3.69	35	
Dibenz(a,h)anthracene	815	µg/kg-dry	SW8270E	81.8	154	765.7	0	106	29 - 146	928	13.1	35	
Fluoranthene	744	µg/kg-dry	SW8270E	92.6	154	765.7	8.79	96.0	24 - 157	766	2.90	35	
Fluorene	615	µg/kg-dry	SW8270E	49.6	154	765.7	4.66	79.7	28 - 158	645	4.82	35	
Indene	646	µg/kg-dry	SW8270E	28.7	154	765.7	0	84.3	33 - 112	614	5.12	35	
Indeno(1,2,3-cd)pyrene	762	µg/kg-dry	SW8270E	80.6	154	765.7	0	99.5	31 - 142	880	14.4	35	
Naphthalene	685	µg/kg-dry	SW8270E	89.6	154	765.7	10.9	88.1	37 - 121	671	2.20	35	
Phenanthrene	634	µg/kg-dry	SW8270E	120	308	765.7	26.7	79.3	23 - 156	639	0.792	35	
Pyrene	740	µg/kg-dry	SW8270E	87.1	154	765.7	7.29	95.6	22 - 160	769	3.84	35	

2007408-001C/MSD: Gel-Permeation Chromatography (GPC) Cleanup, method 3640A, utilized for this sample.



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Kyle F. Gross  
Laboratory Director  
  
Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** MSVOA  
**QC Type:** LCS

**QC SUMMARY REPORT**

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS VOC-3 071420A Date Analyzed: 07/15/2020 1236h													
Test Code: 8260D-S-PPM													
Benzene	0.0192	mg/kg	SW8260D	0.000360	0.00100	0.02000	0	95.8	70 - 140				
Ethylbenzene	0.0197	mg/kg	SW8260D	0.000675	0.00200	0.02000	0	98.3	52 - 140				
Toluene	0.0190	mg/kg	SW8260D	0.000612	0.00200	0.02000	0	95.2	54 - 132				
Xylenes, Total	0.0580	mg/kg	SW8260D	0.000942	0.00200	0.06000	0	96.7	44 - 142				
Surr: 1,2-Dichloroethane-d4	0.0529	mg/kg	SW8260D			0.05000		106	70 - 132				
Surr: 4-Bromofluorobenzene	0.0525	mg/kg	SW8260D			0.05000		105	70 - 125				
Surr: Dibromofluoromethane	0.0524	mg/kg	SW8260D			0.05000		105	70 - 133				
Surr: Toluene-d8	0.0520	mg/kg	SW8260D			0.05000		104	70 - 123				



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Jose Rocha  
QA Officer

**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**QC SUMMARY REPORT**

**Contact:** Chris Beall  
**Dept:** MSVOA  
**QC Type:** MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB VOC-3 071420A Date Analyzed: 07/15/2020 1256h													
Test Code: 8260D-S-PPM													
Benzene	< 0.00100	mg/kg	SW8260D	0.000360	0.00100								
Ethylbenzene	< 0.00200	mg/kg	SW8260D	0.000675	0.00200								
Toluene	< 0.00200	mg/kg	SW8260D	0.000612	0.00200								
TPH C6-C10 (GRO)	< 0.0200	mg/kg	SW8260D	0.00486	0.0200								
Xylenes, Total	< 0.00200	mg/kg	SW8260D	0.000942	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0504	mg/kg	SW8260D			0.05000		101	70 - 132				
Surr: 4-Bromofluorobenzene	0.0499	mg/kg	SW8260D			0.05000		99.7	70 - 125				
Surr: Dibromofluoromethane	0.0491	mg/kg	SW8260D			0.05000		98.2	70 - 133				
Surr: Toluene-d8	0.0505	mg/kg	SW8260D			0.05000		101	70 - 123				



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** MSVOA  
**QC Type:** MS

QC SUMMARY REPORT

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Date Analyzed: 07/15/2020 1438h													
Lab Sample ID: 2007348-001AMS													
Test Code: 8260D-S-PPM													
Benzene	0.194	mg/kg-dry	SW8260D	0.00424	0.0118	0.2355	0	82.2	70 - 140				
Ethylbenzene	0.188	mg/kg-dry	SW8260D	0.00795	0.0236	0.2355	0	79.9	52 - 140				
Toluene	0.193	mg/kg-dry	SW8260D	0.00721	0.0236	0.2355	0	82.0	54 - 132				
Xylenes, Total	0.559	mg/kg-dry	SW8260D	0.0111	0.0236	0.7065	0	79.0	44 - 142				
Surr: 1,2-Dichloroethane-d4	0.592	mg/kg-dry	SW8260D			0.5888		101	70 - 132				
Surr: 4-Bromofluorobenzene	0.615	mg/kg-dry	SW8260D			0.5888		104	70 - 125				
Surr: Dibromofluoromethane	0.596	mg/kg-dry	SW8260D			0.5888		101	70 - 133				
Surr: Toluene-d8	0.598	mg/kg-dry	SW8260D			0.5888		102	70 - 123				



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**Client:** Stantec Consulting, Inc.  
**Lab Set ID:** 2007408  
**Project:** Chevron Wilson Creek / 182603883

**Contact:** Chris Beall  
**Dept:** MSVOA  
**QC Type:** MSD

**QC SUMMARY REPORT**

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 2007348-001A MSD Date Analyzed: 07/15/2020 1458h													
Test Code: 8260D-S-PPM													
Benzene	0.175	mg/kg-dry	SW8260D	0.00399	0.0111	0.2215	0	78.8	70 - 140	0.194	10.3	35	
Ethylbenzene	0.159	mg/kg-dry	SW8260D	0.00748	0.0221	0.2215	0	71.8	52 - 140	0.188	16.8	35	
Toluene	0.168	mg/kg-dry	SW8260D	0.00678	0.0221	0.2215	0	75.7	54 - 132	0.193	14.1	35	
Xylenes, Total	0.477	mg/kg-dry	SW8260D	0.0104	0.0221	0.6645	0	71.8	44 - 142	0.559	15.7	35	
Surr: 1,2-Dichloroethane-d4	0.561	mg/kg-dry	SW8260D			0.5537		101	70 - 132				
Surr: 4-Bromofluorobenzene	0.594	mg/kg-dry	SW8260D			0.5537		107	70 - 125				
Surr: Dibromofluoromethane	0.560	mg/kg-dry	SW8260D			0.5537		101	70 - 133				
Surr: Toluene-d8	0.569	mg/kg-dry	SW8260D			0.5537		103	70 - 123				

## WORK ORDER Summary

Work Order: **2007408**

Page 1 of 2

Client: Stantec Consulting, Inc.

Client ID: STA200

Contact: Chris Beall

Project: Chevron Wilson Creek / 182603883

QC Level: II

WO Type: Standard

Comments: 2 Day Rush; QC 2. CC.brent.lucyk@stantec.com &amp; Savannah.Whitaker@stantec.com Consult Table 910-1 (attached to COC). Footnote report, Sample #1 pH received outside of hold. Sample for Cr VI sent to Pace Analytical. Calculate Cr III when Cr VI results received.;

DP

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
2007408-001A	LF-SW-01	7/13/2020 1356h	7/14/2020 1634h	8260D-S-PPM	Soil		VOC/Fridge
				Test Group: 8260D-S-MBTXN/GRO; # of Analytes: 5 / # of Surr: 4			
2007408-001B				3546-TPH-PR			df - tph
				8015-S-TPH-3546			df - tph
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1			
2007408-001C				3546-SVOA-PR			df - semi
				8270E-S-3546			df - semi
				Test Group: 8270E-S-PNA-3546; # of Analytes: 19 / # of Surr: 6			
				8270E-S-SIM-3546			df - semi
				Test Group: 8270E-S-PNA-SIM-3546; # of Analytes: 19 / # of Surr:			
2007408-001D				3051A-ICPMS-PR			df - wc / mwr
				6010D-S			df - wc / mwr
				1 SEL Analytes: B			
				6020B-S			df - wc / mwr
				10 SEL Analytes: AS BA CD CR CU PB NI SE AG ZN			
				COND-S-9050A			df - wc / mwr
				HG-S-7471B			df - wc / mwr
				HG-S-PR-B			df - wc / mwr
				PH-9045D			df - wc / mwr
				PMOIST			df - wc / mwr
				SAR-S			df - wc / mwr
				SOIL-PR			df - wc / mwr
				OUTSIDE LAB			
2007408-001E							Pace
2007408-002A	Import-Soil-WG	7/14/2020 1116h	7/14/2020 1634h	8260D-S-PPM	Soil		VOC/Fridge
				Test Group: 8260D-S-MBTXN/GRO; # of Analytes: 5 / # of Surr: 4			
2007408-002B				3546-TPH-PR			df - tph
				8015-S-TPH-3546			df - tph
				Test Group: 8015-S-TPH-3546; # of Analytes: 1 / # of Surr: 1			
2007408-002C				3546-SVOA-PR			df - semi

# WORK ORDER Summary

Work Order: **2007408**

Page 2 of 2

Client: Stantec Consulting, Inc.

Due Date: 7/17/2020

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage
2007408-002C	Import-Soil-WG	7/14/2020 1116h	7/14/2020 1634h	8270E-S-3546	Soil	df - semi	1
Test Group: 8270E-S-PNA-3546; # of Analytes: 19 / # of Surr: 6							
8270E-S-SIM-3546							
Test Group: 8270E-S-PNA-SIM-3546; # of Analytes: 19 / # of Surr:							
3051A-ICPMS-PR							
6010D-S							
1 SEL Analytes: B							
6020B-S							
10 SEL Analytes: AS BA CD CR CU PB NI SE AG ZN							
COND-S-9050A							
HG-S-7471B							
HG-S-PR-B							
PH-9045D							
PMOIST							
SAR-S							
SOIL-PR							
OUTSIDE LAB							
2007408-002E						Pace	

AWAL Use Only - One or more samples expired upon receipt:

Test Code  
PH-9045D





American West  
Analytical Laboratory

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[www.awal-labs.com](http://www.awal-labs.com)

Client: Stantec Consulting  
 Address: 2500 S. Colorado Blvd. Suite 2-300  
 City, State, Zip: Denver, CO 80222  
 Contact: Chris Beall / Brent Lucyk  
 Phone #: 970-214-1126  
 E-mail: christopher.beall@stantec.com / brent.lucyk@stantec.com  
 Project Name: Cherwon Wilson Creek  
 Project #: 182603883  
 PO #: \_\_\_\_\_  
 Sampler Name: Savannah Turner

	Sample ID:	Date Sampled	Time Sampled
1	UF-SW-01	7/13/2020	13:56
2	Import - Soil - NG	7/14/2020	11:16
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Relinquished by: Signature	<i>Savannah Turner</i>	Date:	7/14/2010	Received by: Signature	<i>Val</i>
Print Name:	Savannah Turner	Time:	10:34	Print Name:	Val
Relinquished by: Signature		Date:		Received by: Signature	
Print Name:		Time:		Print Name:	
Relinquished by: Signature		Date:		Received by: Signature	
Print Name:		Time:		Print Name:	

*By signing this Chain of Custody you are agreeing to permit AWAL to subcontract any analyses not normally performed at AWAL.*

## CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAU's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

2007408

AWAL Lab Sample Set #  
Page 1 of

[illegible]

REV 11-21-18

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 Report of Operations, 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 LEVELS<sup>1</sup>

Contaminant of Concern		Concentrations	
Organic Compounds in Soil			
TPH (total volatile and extractable petroleum hydrocarbons)		500 mg/kg	
Benzene		0.17 mg/kg <sup>2</sup>	
Toluene		85 mg/kg <sup>2</sup>	
Ethylbenzene		100 mg/kg <sup>2</sup>	
Xylenes (total)		175 mg/kg <sup>2</sup>	
Acenaphthene		1,000 mg/kg <sup>2</sup>	
Anthracene		1,000 mg/kg <sup>2</sup>	
Benz(a)anthracene		0.22 mg/kg <sup>2</sup>	
Benz(o)b)fluoranthene		0.22 mg/kg <sup>2</sup>	
Benz(o)k)fluoranthene		2.2 mg/kg <sup>2</sup>	
Benzo(a)pyrene		0.022 mg/kg <sup>2</sup>	
Chrysene		22 mg/kg <sup>2</sup>	
Dibenzo(a,h)anthracene		0.022 mg/kg <sup>2</sup>	
Fluoranthene		1,000 mg/kg <sup>2</sup>	
Fluorene		1,000 mg/kg <sup>2</sup>	
Indeno(1,2,3,c,d)pyrene		0.22 mg/kg <sup>2</sup>	
Naphthalene		23 mg/kg <sup>2</sup>	
Pyrene		1,000 mg/kg <sup>2</sup>	
Organic Compounds in Ground Water			
Benzene		5 µg/l <sup>3</sup>	
Toluene		560 to 1,000 µg/l <sup>3</sup>	
Ethylbenzene		700 µg/l <sup>3</sup>	
Xylenes (Total)		1,400 to 10,000 µg/l <sup>3,4</sup>	
Inorganics in Soils			
Electrical Conductivity (EC)		<4 mmhos/cm or 2x background	
Sodium Adsorption Ratio (SAR)		<12 <sup>5</sup>	
pH		6-9	

Inorganics in Ground Water	
Total Dissolved Solids (TDS)	<1.25 x background <sup>3</sup>
Chlorides	<1.25 x background <sup>3</sup>
Sulfates	<1.25 x background <sup>3</sup>
Metals in Soils	
Arsenic	0.39 mg/kg <sup>2</sup>
Barium (LDNR True Total Barium)	15,000 mg/kg <sup>2</sup>
Boron (Hot Water Soluble)	2 mg/l <sup>3</sup>
Cadmium	70 mg/kg <sup>3,6</sup>
Chromium (III)	120,000 mg/kg <sup>2</sup>
Chromium (VI)	23 mg/kg <sup>2,6</sup>
Copper	3,100 mg/kg <sup>2</sup>
Lead (inorganic)	400 mg/kg <sup>2</sup>
Mercury	23 mg/kg <sup>2</sup>
Nickel (soluble salts)	1,600 mg/kg <sup>2,6</sup>
Selenium	390 mg/kg <sup>2,6</sup>
Silver	390 mg/kg <sup>2</sup>
Zinc	23,000 mg/kg <sup>2,6</sup>
Liquid Hydrocarbons in Soils and Ground Water	
Liquid hydrocarbons including condensate	Below detection level
and oil	

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 determined to be an acceptable level of this chemical in public water supplies, taking treatability and laboratory detection limits into account. The WQCC intends that control requirements for this chemical be implemented to attain a level of ambient water quality that is at least equal to the first number in the range except as follows: 1) where ground water quality exceeds the first number in the range due to a release of contaminants that occurred prior to September 14, 2004 (regardless of the date of discovery or subsequent migration of such contaminants) clean-up levels for the entire contaminant plume shall be no more restrictive than the second number in the range or the ground water quality resulting from such release, whichever is more protective, and 2) whenever the WQCC has adopted alternative, site-specific standards for the chemical, the site-specific standards shall apply instead of these statewide standards.
- 5 Analysis by USDA Agricultural Handbook 60 method (20B) with soluble cations determined by method (2). Method (20B) = estimation of exchangeable sodium percentage and exchangeable potassium percentage from soluble cations. Method (2) = saturated paste method (note: each analysis requires a unique sample of at least 500 grams). If soils are saturated, USDA Agricultural Handbook 60 with soluble cations determined by method (3A) saturation extraction method.
- 6 The table value for these inorganic constituents is taken from the CDPHE-HMWMD Table 1 Colorado Soil Evaluation Values (December 2007). However, because these values are high, it is possible that site-specific geochemical conditions may exist that could allow these constituents to migrate into ground water at levels exceeding ground water standards even though the concentrations are below the table values. Therefore, when these constituents are present as contaminants, a secondary evaluation of their leachability must be performed to ensure ground water protection.

July 17, 2020

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

## American West Analytical Labs- Utah

Sample Delivery Group: L1240076  
Samples Received: 07/16/2020  
Project Number: 182603883  
Description: Chevron Wilson Creek

Report To: Elona Hayward  
3440 S. 700 W.  
Salt Lake City, UT 84129

Entire Report Reviewed By:



Jennifer Gambill  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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Tc: Table of Contents	2	
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Cn: Case Narrative	4	
Sr: Sample Results	5	<sup>3</sup> Ss
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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



LF-SW-01 L1240076-01 Solid

Collected by

Collected date/time

Received date/time

07/13/20 13:56

07/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1510292	1	07/16/20 14:33	07/16/20 14:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1510492	1	07/16/20 18:55	07/17/20 11:15	JIC	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

IMPORT-SOIL-WG L1240076-02 Solid

Collected by

Collected date/time

Received date/time

07/13/20 11:16

07/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1510292	1	07/16/20 14:33	07/16/20 14:43	KBC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1510492	1	07/16/20 18:55	07/17/20 11:16	JIC	Mt. Juliet, TN

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

ACCOUNT:

American West Analytical Labs- Utah

PROJECT:

182603883

SDG:

L1240076

DATE/TIME:

07/17/20 15:35

PAGE:

3 of 12



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jennifer Gambill  
Project Manager

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	85.5		1	07/16/2020 14:43	<a href="#">WG1510292</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	1.17	<u>J</u>	0.749	2.34	1	07/17/2020 11:15	<a href="#">WG1510492</a>

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	86.3		1	07/16/2020 14:43	<a href="#">WG1510292</a>

<sup>1</sup>Cp

<sup>2</sup>Tc

Wet Chemistry by Method 3060A/7196A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.741	2.32	1	07/17/2020 11:16	<a href="#">WG1510492</a>

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3550499-1 07/16/20 14:43

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1240008-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240008-01 07/16/20 14:43 • (DUP) R3550499-3 07/16/20 14:43

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	81.9	81.9	1	0.0587		10

Laboratory Control Sample (LCS)

(LCS) R3550499-2 07/16/20 14:43

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.2	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3550441-1 07/17/20 11:13

Analyte	MB Result mg/kg	<u>MB Qualifier</u> mg/kg	MB MDL mg/kg	MB RDL mg/kg
Chromium, Hexavalent	U	0.640	2.00	

L1240076-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240076-01 07/17/20 11:15 • (DUP) R3550441-3 07/17/20 11:15

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	<u>DUP Qualifier</u> %	DUP RPD Limits %
Chromium, Hexavalent	1.17	1.01	1	14.2	<div>↓</div>	20

Laboratory Control Sample (LCS)

(LCS) R3550441-2 07/17/20 11:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Chromium, Hexavalent	24.0	25.8	108	80.0-120	

L1240076-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1240076-02 07/17/20 11:16 • (MS) R3550441-4 07/17/20 11:19 • (MSD) R3550441-5 07/17/20 11:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u> %	<u>MSD Qualifier</u> %	RPD Limits %
Chromium, Hexavalent	23.2	U	22.2	23.8	95.6	103	1	75.0-125	7.05		20

L1240076-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1240076-02 07/17/20 11:16 • (MS) R3550441-6 07/17/20 11:21

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u> %
Chromium, Hexavalent	773	U	815	106	50	75.0-125	



## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

### Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

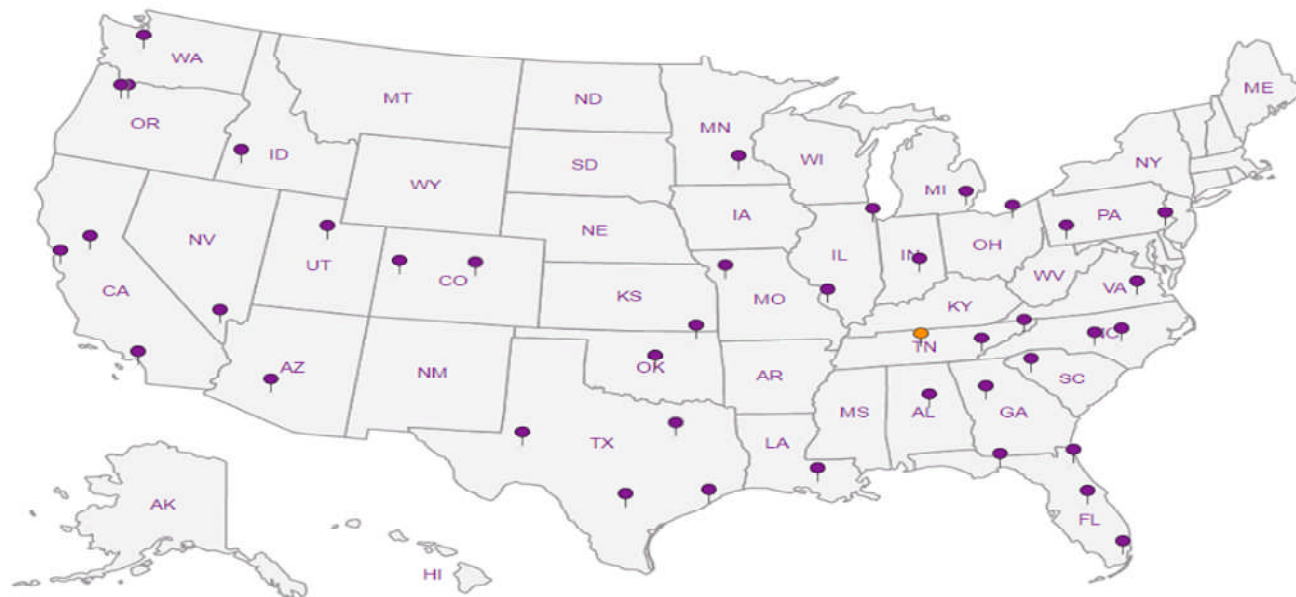
## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Client: American West Analytical Laboratories  
Address: 463 W. 3600 S. Salt Lake City, UT 84115  
Report To: Elona Hayward; Denise Bruun; Rebekah V  
Email: [elona@awal-labs.com](mailto:elona@awal-labs.com); [denise@awal-labs.com](mailto:denise@awal-labs.com); [rebekah@awal-labs.com](mailto:rebekah@awal-labs.com)  
Phone #: (801) 263-8686

Project Name: Chevron Wilson Creek / 182603883  
PO #: 2007408

Turn Around Time (days):  
1 2 3 4 5 Standard

QC Level:

**QC Level Descriptions:**

I: No Batch QC summaries in report

II: Include Batch QC summaries in report

II+ Include Batch QC summaries performed on client sample in report

III: QC level II+, also include chromatograms and case narratives in report

III+: QC level III, also include raw data, logbooks, calibration, instrument batch summaries. (CLP-like package)

Cr V  
Matrix  
ainers

Date and Time Sampled:

**Sample ID:**

[illegible]

Appropriate Utah / NELAP certifications required.

Relinquished By:  
Signature

Signature: Dewise Brown

Print Name: Dewise Brown

Print Name: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_

Signature: Phil F...  
Print Name: Phil F...

Relinquished By:  
Signature

Signature	Print Name:
-----------	-------------

Received By: \_\_\_\_\_  
Signature \_\_\_\_\_

Signature	
Print Name	

Print Name: \_\_\_\_\_  
Received By: \_\_\_\_\_

Signature	
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Print Name:	
Received By:	

Received by:  
Signature

Print Name: \_\_\_\_\_

Date: 7/15/20

Time: 1/10/20 12:30

Date: 12/6/20

Time: 7:00  
02/02/2020

Date: 1700

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

time.

100

2000

1000

10775

1001

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

05


Sent To: Pace

Printed: 7/14/2020

RAD SCREEN:  $<0.5$  mR/hr



# Pace Analytical National Center for Testing & Innovation Cooler Receipt Form

Client:	AWALABUT		1240076
Cooler Received/Opened On:	7 / 16 / 20	Temperature:	1.6
Received By:	ISSA HUSSEIN		
Signature:			
Receipt Check List			
	NP	Yes	No
COC Seal Present / Intact?	<input checked="" type="checkbox"/>		
COC Signed / Accurate?		<input checked="" type="checkbox"/>	
Bottles arrive intact?		<input checked="" type="checkbox"/>	
Correct bottles used?		<input checked="" type="checkbox"/>	
Sufficient volume sent?		<input checked="" type="checkbox"/>	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			