

# **Bury Crandell 61N68W/NENE/C UNIT #1 PAD**

NENE Sec. 23-T1N-R68W

Location ID: 321535

Broomfield County Assessment Data Package

July 2024

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



## **FIELD NOTES AND PHOTO LOG**

SITE NAME: Bury Crandell 61N68W/NENE/C Unit #1 Pad								DATE: 7/1/2024	REM. PROJECT #:		WEATHER: Cloudy, 85(F)	
SITE DIRECTIONS: CR 8 & CR 11 S 0.25 mi, NW 0.15 mi INTO								CLIENT: Crestone Peak Resources Operating, LLC				
LEGALS AND LAT/LONG: 40.041350, -104.964760								TASMAN PERSONNEL: Sean Clarke				
SOIL TYPES: GM - silty gravel								SURFACE GRADIENT: Northwest				
SURROUNDING LAND USE: Rangeland								CROP:				
SOIL SAMPLING								FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo? (Y/N)	USCS	Lab (Y/N)	EQUIPMENT		Quantity		
								Above Ground Storage Tank (AST)				
7/1/2024 13:30	WH-B01@6"	1.0	No Staining	No Odor	Y	ML	Y	Produced Water Vessel (PWV)				
7/1/2024 13:35	SEP-B01@6"	1.4	No Staining	No Odor	Y	ML	Y	Separator (SEP)				
7/1/2024 13:40	AST-B01@6"	2.1	No Staining	No Odor	Y	ML	Y	Emission Control Device (ECD)				
7/1/2024 13:45	BG01@6"	1.9	No Staining	No Odor	Y	ML	Y	Dump Line (DL)				
7/1/2024 13:50	BG02@6"	1.4	No Staining	No Odor	Y	ML	Y	Wellhead (WH)				
7/1/2024 13:55	BG03@6"	1.1	No Staining	No Odor	Y	ML	Y	Flowline (FL)				
7/1/2024 14:00	BG04@6"	1.4	Organic Cor	No Odor	Y	ML	Y	FL Method of Closure				
7/1/2024 14:05	BG05@6"	1.4	Organic Cor	No Odor	Y	ML	Y	FL Footage Removed				
								Footaged Abandoned in Place				
								Other:				
								Soil Loads Removed				
								IMPACTED SOIL IDENTIFIED?				
								ESTIMATED VOLUME OF IMPACTS:				
								Date		Number	CY	
								Total Removed		0	0	
								Disposal Facility:				
								Groundwater Recovery				
								DATE GW ENCOUNTERED:		DEPTH:		
								GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
								LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING								Date		BBLS		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?						
								Total Removed		0		
								Disposal Facility:				

							
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>	
				<b>Contents:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Soil sampling location.				<b>Notes/Conditions:</b> Soil sampling location.			



					
<p>Equipment ID:      Equipment Type:</p>			<p>Equipment ID:      Equipment Type:</p>		
Material:	Volume:	Contents:	Material:	Volume:	Contents:
<p>Notes/Conditions: Soil sampling location.</p>			<p>Notes/Conditions: Background soil sampling location.</p>		




					
<b>Equipment ID:</b>			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Notes/Conditions:</b> Background soil sampling location.		

					
<b>Equipment ID:</b>			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Notes/Conditions:</b> Background soil sampling location.		



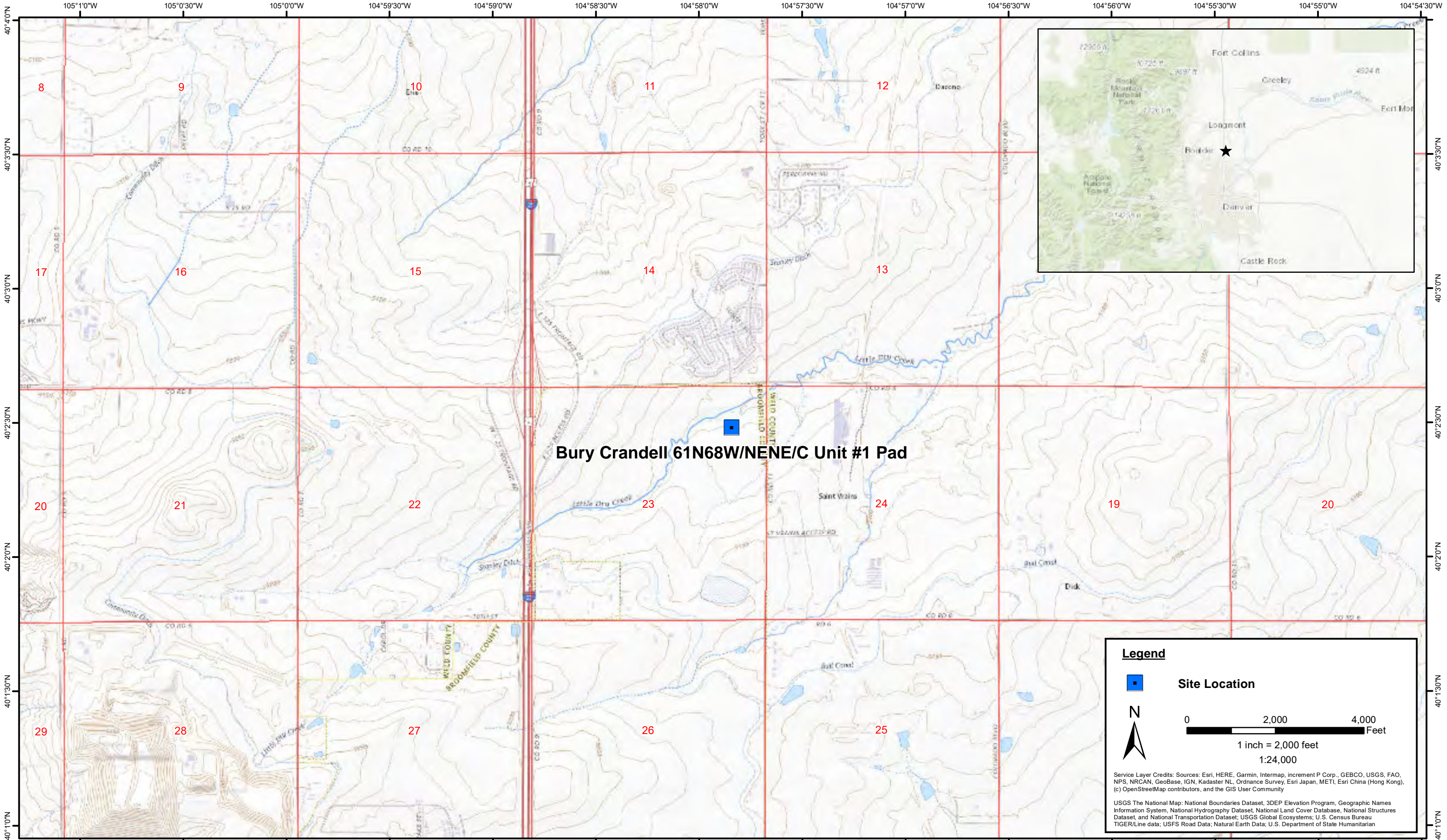
					
77°E (T) 40°2'27"N, 104°57'52"W ±16ft ▲ 5114ft			61°NE (T) 40°2'27"N, 104°57'51"W ±16ft ▲ 5114ft		
					
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Equipment Type:</b>	
				<b>Material:</b>	
				<b>Volume:</b>	
				<b>Contents:</b>	
				<b>Contents:</b>	
<b>Notes/Conditions:</b> Background soil sampling location.			<b>Notes/Conditions:</b> Background soil sampling location.		

											
Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions: Background soil sample lithology.						Notes/Conditions:					



## FIGURES





DATE:  
July 2023

DESIGNED BY:  
S. Vogt

DRAWN BY:  
L. Reed



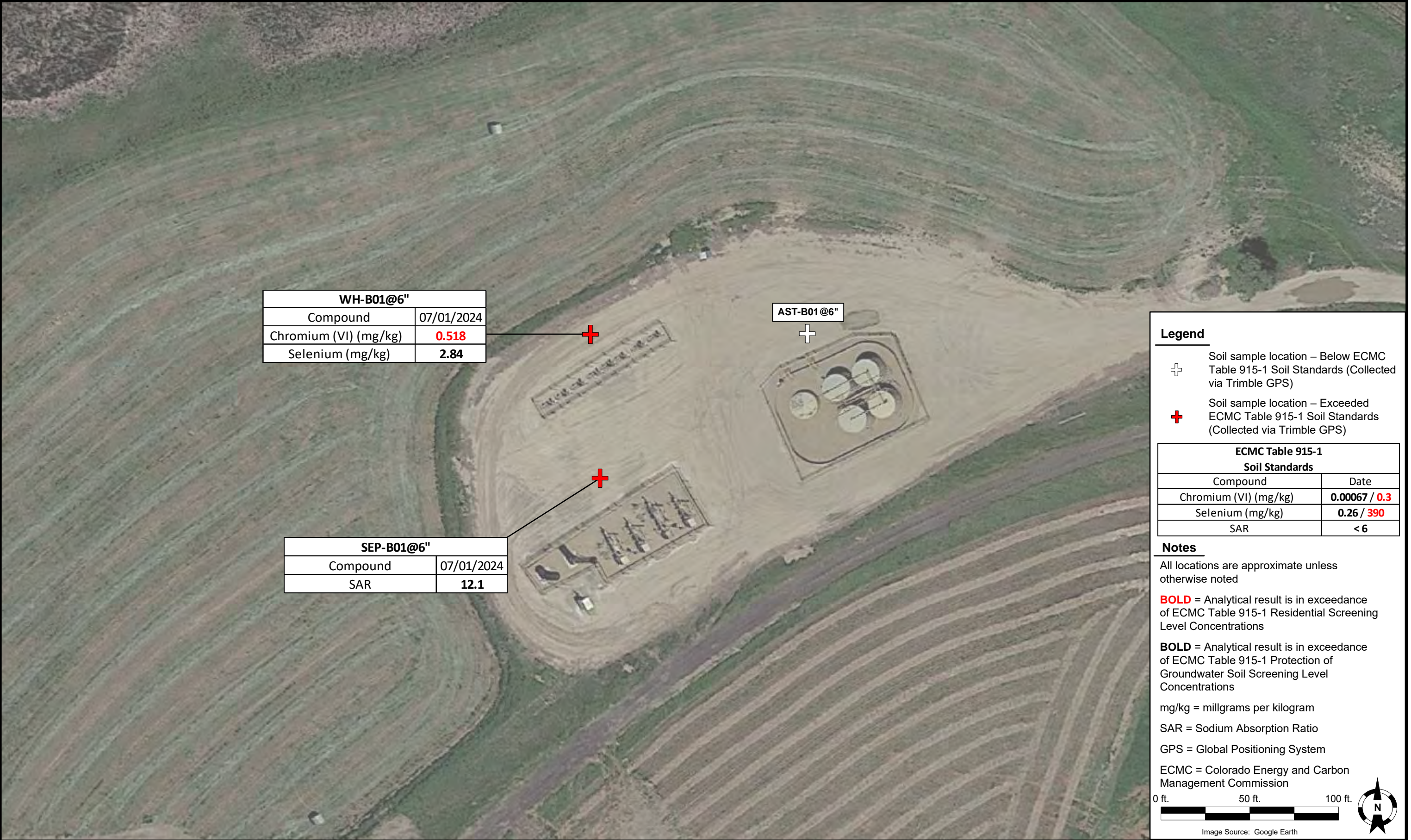
Tasman, Inc.  
6855 W. 119th Ave  
Broomfield, CO 80020

City and County of Broomfield  
Bury Crandell 61N68W/NENE/C Unit #1 Pad  
NENE Sec. 23-T1N-R68W  
Broomfield County, Colorado

Site Location Map


Figure  
1









DATE: July 9, 2024	 <b>Tasman, Inc.</b> 6855 W. 119th Avenue Broomfield, Colorado 80020	<b>Crestone Peak Resources Operating, LLC</b> <b>Bury Crandell 61N68W/NENE/C Unit #1 Pad</b> NENE Sec. 23-T1N-R68W Broomfield County, Colorado	Soil Sample Location Map (07/01/2024)	FIGURE 3
DESIGNED BY: S. Vogt				
DRAWN BY: L. Bakel				



# TABLES

**TABLE 1**  
**BURY CRANDELL 61N68W/NENE/C UNIT #1 PAD**  
**SOIL SAMPLE LOCATIONS**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**



Soil Sample Location	Depth	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
WH-B01@6"	6"	07/01/2024	1.0	40.041365	-104.964862	1.0	Y
SEP-B01@6"	6"	07/01/2024	1.4	40.041141	-104.964838	0.9	Y
AST-B01@6"	6"	07/01/2024	2.1	40.041369	-104.964429	0.9	Y
<b>BACKGROUND</b>							
BG01@6"	6"	07/01/2024	1.9	40.041568	-104.964852	0.9	Y
BG02@6"	6"	07/01/2024	1.4	40.041513	-104.964997	1.0	Y
BG03@6"	6"	07/01/2024	1.1	40.040758	-104.965019	0.9	Y
BG04@6"	6"	07/01/2024	1.4	40.040866	-104.964619	1.0	Y
BG05@6"	6"	07/01/2024	1.4	40.040988	-104.964364	1.0	Y

**Notes:**

PID = Photoionization Detector

ppm = parts per million

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable



**TABLE 2**  
**BURY CRANDELL 61N68W/NENE/C UNIT #1 PAD**  
**SOIL ANALYTICAL DATA - VOCs**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**



Soil Sample Location	Depth	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)
ECMC Organic Compounds in Soils - GSSL <sup>(1)</sup>			0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
ECMC Organic Compounds in Soils - RSL <sup>(2)</sup>			1.2	490	5.8	58	2	500			30	27
WH-B01@6"	6"	07/01/2024	<0.000467	<0.00130	<0.000737	<0.000880	<0.00408	<0.0217	7.49	18.4	<0.00200	0.610
SEP-B01@6"	6"	07/01/2024	<0.000467	<0.00130	<0.000737	<0.000880	<0.00408	<0.0217	24.6	26.5	<0.00200	0.461
AST-B01@6"	6"	07/01/2024	<0.000467	<0.00130	<0.000737	<0.000880	<0.00408	0.0357	4.81	15.5	<0.00200	0.497

**Notes:**

VOCs = Volatile Organic Compounds

(1) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = milligrams per kilogram

TVPH - GRO = Total Volatile Petroleum Hydrocarbons - Gasoline Range Organics

TEPH - DRO = Total Extractable Petroleum Hydrocarbons - Diesel Range Organics

TEPH - ORO = Total Extractable Petroleum Hydrocarbons - Oil Range Organics

1,2,4 - TMB = 1,2,4 - Trimethylbenzene

1,3,5 - TMB = 1,3,5 - Trimethylbenzene

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

*Italics* = Laboratory minimum detection limit exceeds the ECMC Table 915-1 standard

**TABLE 3**  
**BURY CRANDELL 61N68W/NENE/C UNIT #1 PAD**  
**SOIL ANALYTICAL DATA - PAHs**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**



Soil Sample Location	Depth	Date	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)A (mg/kg)	Benzo(b)F (mg/kg)	Benzo(k)F (mg/kg)	Benzo(a)P (mg/kg)	Chrysene (mg/kg)	D (a,h) A (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Pyrene (mg/kg)
ECMC Organic Compounds in Soils - GSSL <sup>(1)</sup>			0.55	5.8	0.011	0.3	2.9	0.24	9	0.96	8.9	0.54	0.98	0.006	0.019	1.3
ECMC Organic Compounds in Soils - RSL <sup>(2)</sup>			360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
WH-B01@6"	6"	07/01/2024	<0.00209	<0.00230	<0.00173	<0.00153	<0.00215	<0.00179	<0.00232	<0.00172	<0.00227	<0.00205	<0.00181	<0.00449	<0.00427	<0.00200
SEP-B01@6"	6"	07/01/2024	<0.00209	<0.00230	<0.00173	<0.00153	<0.00215	<0.00179	<0.00232	<0.00172	<0.00227	<0.00205	<0.00181	<0.00449	<0.00427	<0.00200
AST-B01@6"	6"	07/01/2024	<0.00209	<0.00230	<0.00173	<0.00153	<0.00215	<0.00179	<0.00232	<0.00172	<0.00227	<0.00205	<0.00181	<0.00449	<0.00427	<0.00200

**Notes:**

PAHs = Polycyclic Aromatic Hydrocarbons

(1) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = milligrams per kilogram

Benzo(a)A = Benzo(a)Anthracene

Benzo(b)F = Benzo(b)Fluoranthene

Benzo(k)F = Benzo(k)Fluoranthene

Benzo(a)P = Benzo(a)Pyrene

D (a,h) A = Dibenzo(a,h)Anthracene

1,2,3-CD = Indeno(1,2,3-cd)Pyrene

1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

**TABLE 4**  
**BURY CRANDELL 61N68W/NENE/C UNIT #1 PAD**  
**SOIL ANALYTICAL DATA - METALS**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Metals in Soils - GSSL <sup>(1)</sup>			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
ECMC Metals in Soils - RSL <sup>(2)</sup>			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
WH-B01@6"	6"	07/01/2024	6.46*	193*	0.297	0.518	16.0	14.0	16.1	2.84	<0.0865	49.4
SEP-B01@6"	6"	07/01/2024	2.82*	231*	0.117	<0.255	9.53	7.43	9.45	1.34*	<0.0865	29.9
AST-B01@6"	6"	07/01/2024	3.43*	163*	0.133	<0.255	10.4	9.29	10.1	1.49*	<0.0865	33.2
BACKGROUND												
BG01@6"	6"	07/01/2024	11.1**	198	0.427	<0.255	22.0	17.2	20.4	1.91	0.150	73.2
BG02@6"	6"	07/01/2024	7.43	190	0.413	<0.255	19.3	17.3	17.7	2.02	0.184	63.5
BG03@6"	6"	07/01/2024	5.17	207	0.312	<0.255	15.4	13.8	16.8	1.77	<0.0865	53.2
BG04@6"	6"	07/01/2024	3.90	549**	0.450	0.295	18.7	19.2	10.2	1.48	0.245	48.1
BG05@6"	6"	07/01/2024	3.96	298	0.452	<0.255	21.2	32.5**	9.71	1.11	<0.0865	59.2
Highest Background @ 6" x1.25 (Silt)			9.29	373	0.565	0.369	27.5	24.0	25.5	2.53	0.306	91.5

**Notes:**

(1) Standards for soil are taken from ECMC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = Analytical result is less than the indicated laboratory minimum detection limit

mg/kg = milligrams per kilogram

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations

**Highest background concentration x1.25**

*Italics* = Laboratory minimum detection limit exceeds the ECMC Table 915-1 Standard

\* Result exceeded the ECMC Table 915-1 standard, but was within site-specific background concentrations

\*\*Concentration is considered anomalously high, not considered for site-specific background concentration



**TABLE 5**  
**BURY CRANDELL 61N68W/NENE/C UNIT #1 PAD**  
**SOIL ANALYTICAL DATA - SOIL RECLAMATION**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
<b>ECMC Soil Suitability for Reclamation<sup>(1)</sup></b>			<b>6 - 8.3</b>	<b>&lt; 6</b>	<b>&lt; 4</b>	<b>2</b>
WH-B01@6"	6"	07/01/2024	7.94	2.98	1.25	0.610
SEP-B01@6"	6"	07/01/2024	7.89	<b>12.1</b>	3.69	0.461
AST-B01@6"	6"	07/01/2024	7.64	5.74	2.64	0.497
<b>BACKGROUND</b>						
BG01@6"	6"	07/01/2024	7.98	0.628	0.352	1.07
BG02@6"	6"	07/01/2024	7.99	1.02	0.372	1.18
BG03@6"	6"	07/01/2024	<b>8.15</b>	1.21	0.284	0.388
BG04@6"	6"	07/01/2024	6.92	0.398	0.132	<b>2.65</b>
BG05@6"	6"	07/01/2024	7.20	<b>1.30</b>	<b>0.586</b>	0.361
<b>Highest Background @ 6" (Silt)</b>			<b>8.15</b>	<b>1.30</b>	<b>0.586</b>	<b>2.65</b>

**Notes:**

(1) Standards for soil are taken from ECMC Table 915-1: Soil Suitability for Reclamation (Effective January 15, 2021)

ECMC = Colorado Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

pH = Potential of Hydrogen

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

**BOLD** = Analytical result is in exceedance of ECMC Table 915-1: Soil Suitability for Reclamation Concentrations

**Highest background concentration**

## **LABORATORY ANALYTICAL DATA**



# ANALYTICAL REPORT

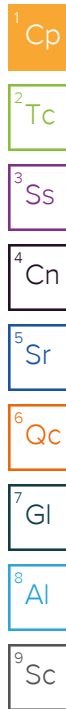
July 29, 2024

Revised Report

## Civitas - CO

Sample Delivery Group: L1753532  
Samples Received: 07/03/2024  
Project Number: P1137  
Description: Bury Crandell 61N68W/NENE/ C Unit #1 Pad

Report To: Sam Vogt / Jacob Evans  
6855 W. 118th Ave  
Broomfield, CO 80020



Entire Report Reviewed By:

Shane 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.

**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [mydata.pacelabs.com](https://mydata.pacelabs.com)



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<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

# SAMPLE SUMMARY

WH-B01@6" L1753532-01 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:30

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2318078	1	07/10/24 15:01	07/10/24 15:01	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317852	1	07/11/24 02:28	07/12/24 08:05	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2320495	1	07/10/24 13:31	07/10/24 14:42	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2320493	1	07/10/24 13:32	07/10/24 15:30	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2318096	1	07/09/24 12:49	07/09/24 20:59	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317528	5	07/09/24 06:51	07/24/24 14:21	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2320806	1	07/10/24 13:22	07/11/24 06:20	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2320928	1	07/10/24 13:22	07/11/24 06:02	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2319736	1	07/10/24 21:45	07/11/24 13:20	KDB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2319703	1	07/10/24 07:56	07/11/24 00:19	DSH	Mt. Juliet, TN

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

SEP-B01@6" L1753532-02 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:35

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2318078	1	07/10/24 15:02	07/10/24 15:02	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317111	1	07/11/24 02:25	07/11/24 15:16	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2320495	1	07/10/24 13:31	07/10/24 14:42	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2320493	1	07/10/24 13:32	07/10/24 15:30	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2318096	1	07/09/24 12:49	07/09/24 21:01	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317528	5	07/09/24 06:51	07/24/24 14:24	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2320806	1	07/10/24 13:22	07/11/24 06:43	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2320928	1	07/10/24 13:22	07/11/24 06:21	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2319736	1	07/10/24 21:45	07/11/24 14:35	KDB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2319703	1	07/10/24 07:56	07/11/24 00:37	DSH	Mt. Juliet, TN

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

AST-B01@6" L1753532-03 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:40

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2318078	1	07/10/24 15:04	07/10/24 15:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317111	1	07/11/24 02:25	07/11/24 15:25	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2320495	1	07/10/24 13:31	07/10/24 14:42	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2320493	1	07/10/24 13:32	07/10/24 15:30	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2318096	1	07/09/24 12:49	07/09/24 21:09	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317528	5	07/09/24 06:51	07/24/24 14:28	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2320806	1	07/10/24 13:22	07/11/24 07:05	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2320928	1	07/10/24 13:22	07/11/24 06:41	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2319736	1	07/10/24 21:45	07/11/24 15:25	KDB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2319703	1	07/10/24 07:56	07/10/24 22:10	JCH	Mt. Juliet, TN

# CASE NARRATIVE

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.



Shane Gambill  
Project Manager

## Report Revision History

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Level II Report - Version 1: 07/24/24 15:39

## Project Narrative

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respooled per request





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.98		1	07/10/2024 15:01	WG2318078

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.518	<a href="#">BJ</a>	0.255	1.00	1	07/12/2024 08:05	<a href="#">WG2317852</a>

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.94	<a href="#">T8</a>	1	07/10/2024 14:42	<a href="#">WG2320495</a>

Sample Narrative:

L1753532-01 WG2320495: 7.94 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1250		10.0	1	07/10/2024 15:30	<a href="#">WG2320493</a>

Sample Narrative:

L1753532-01 WG2320493: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.610		0.0167	0.200	1	07/09/2024 20:59	<a href="#">WG2318096</a>

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.46		0.100	1.00	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Barium	193		0.152	2.50	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Cadmium	0.297	<a href="#">J</a>	0.0855	1.00	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Copper	16.0		0.132	5.00	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Lead	14.0		0.0990	2.00	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Nickel	16.1		0.197	2.50	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Selenium	2.84		0.180	2.50	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Silver	U		0.0865	0.500	5	07/24/2024 14:21	<a href="#">WG2317528</a>
Zinc	49.4		0.740	25.0	5	07/24/2024 14:21	<a href="#">WG2317528</a>

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	07/11/2024 06:20	<a href="#">WG2320806</a>
(S) a,a,a-Trifluorotoluene(FID)	99.6			77.0-120		07/11/2024 06:20	<a href="#">WG2320806</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/11/2024 06:02	<a href="#">WG2320928</a>
Toluene	U		0.00130	0.00500	1	07/11/2024 06:02	<a href="#">WG2320928</a>
Ethylbenzene	U		0.000737	0.00250	1	07/11/2024 06:02	<a href="#">WG2320928</a>
Xylenes, Total	U		0.000880	0.00650	1	07/11/2024 06:02	<a href="#">WG2320928</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/11/2024 06:02	<a href="#">WG2320928</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/11/2024 06:02	<a href="#">WG2320928</a>
(S) Toluene-d8	89.4			75.0-131		07/11/2024 06:02	<a href="#">WG2320928</a>
(S) 4-Bromofluorobenzene	94.8			67.0-138		07/11/2024 06:02	<a href="#">WG2320928</a>
(S) 1,2-Dichloroethane-d4	99.2			70.0-130		07/11/2024 06:02	<a href="#">WG2320928</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.49		1.61	4.00	1	07/11/2024 13:20	<a href="#">WG2319736</a>
C28-C36 Motor Oil Range	18.4		0.274	4.00	1	07/11/2024 13:20	<a href="#">WG2319736</a>
(S) o-Terphenyl	65.5			18.0-148		07/11/2024 13:20	<a href="#">WG2319736</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Anthracene	U		0.00230	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Benzo(a)anthracene	U		0.00173	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Benzo(a)pyrene	U		0.00179	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Chrysene	U		0.00232	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Fluoranthene	U		0.00227	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Fluorene	U		0.00205	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
1-Methylnaphthalene	U		0.00449	0.0200	1	07/11/2024 00:19	<a href="#">WG2319703</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Naphthalene	U		0.00408	0.0200	1	07/11/2024 00:19	<a href="#">WG2319703</a>
Pyrene	U		0.00200	0.00600	1	07/11/2024 00:19	<a href="#">WG2319703</a>
(S) p-Terphenyl-d14	95.1			23.0-120		07/11/2024 00:19	<a href="#">WG2319703</a>
(S) Nitrobenzene-d5	90.2			14.0-149		07/11/2024 00:19	<a href="#">WG2319703</a>
(S) 2-Fluorobiphenyl	89.3			34.0-125		07/11/2024 00:19	<a href="#">WG2319703</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Table with 6 columns: Analyte, Result, Qualifier, Dilution, Analysis date / time, Batch. Row 1: Sodium Adsorption Ratio, 12.1, 1, 07/10/2024 15:02, WG2318078.

Wet Chemistry by Method 7199

Table with 7 columns: Analyte, Result mg/kg, Qualifier, MDL mg/kg, RDL mg/kg, Dilution, Analysis date / time, Batch. Row 1: Hexavalent Chromium, U, 0.255, 1.00, 1, 07/11/2024 15:16, WG2317111.

Wet Chemistry by Method 9045D

Table with 6 columns: Analyte, Result su, Qualifier, Dilution, Analysis date / time, Batch. Row 1: pH, 7.89, T8, 1, 07/10/2024 14:42, WG2320495.

Sample Narrative:
L1753532-02 WG2320495: 7.89 at 21.8C

Wet Chemistry by Method 9050AMod

Table with 7 columns: Analyte, Result umhos/cm, Qualifier, RDL umhos/cm, Dilution, Analysis date / time, Batch. Row 1: Specific Conductance, 3690, 10.0, 1, 07/10/2024 15:30, WG2320493.

Sample Narrative:
L1753532-02 WG2320493: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Table with 7 columns: Analyte, Result mg/l, Qualifier, MDL mg/l, RDL mg/l, Dilution, Analysis date / time, Batch. Row 1: Hot Water Sol. Boron, 0.461, 0.0167, 0.200, 1, 07/09/2024 21:01, WG2318096.

Metals (ICPMS) by Method 6020

Table with 7 columns: Analyte, Result mg/kg, Qualifier, MDL mg/kg, RDL mg/kg, Dilution, Analysis date / time, Batch. Rows include Arsenic, Barium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Zinc with various results and qualifiers.

Volatile Organic Compounds (GC) by Method 8015D/GRO

Table with 7 columns: Analyte, Result mg/kg, Qualifier, MDL mg/kg, RDL mg/kg, Dilution, Analysis date / time, Batch. Row 1: TPH (GC/FID) Low Fraction, U, 0.0217, 0.100, 1, 07/11/2024 06:43, WG2320806.

Vertical sidebar with 9 colored boxes containing element symbols: 1 Cp, 2 Tc, 3 Ss, 4 Cn, 5 Sr, 6 Qc, 7 Gl, 8 Al, 9 Sc.



Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/11/2024 06:21	<a href="#">WG2320928</a>
Toluene	U		0.00130	0.00500	1	07/11/2024 06:21	<a href="#">WG2320928</a>
Ethylbenzene	U		0.000737	0.00250	1	07/11/2024 06:21	<a href="#">WG2320928</a>
Xylenes, Total	U		0.000880	0.00650	1	07/11/2024 06:21	<a href="#">WG2320928</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/11/2024 06:21	<a href="#">WG2320928</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/11/2024 06:21	<a href="#">WG2320928</a>
(S) Toluene-d8	90.9			75.0-131		07/11/2024 06:21	<a href="#">WG2320928</a>
(S) 4-Bromofluorobenzene	94.9			67.0-138		07/11/2024 06:21	<a href="#">WG2320928</a>
(S) 1,2-Dichloroethane-d4	97.6			70.0-130		07/11/2024 06:21	<a href="#">WG2320928</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	24.6		1.61	4.00	1	07/11/2024 14:35	<a href="#">WG2319736</a>
C28-C36 Motor Oil Range	26.5		0.274	4.00	1	07/11/2024 14:35	<a href="#">WG2319736</a>
(S) o-Terphenyl	57.7			18.0-148		07/11/2024 14:35	<a href="#">WG2319736</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Anthracene	U		0.00230	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Benzo(a)anthracene	U		0.00173	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Benzo(a)pyrene	U		0.00179	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Chrysene	U		0.00232	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Fluoranthene	U		0.00227	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Fluorene	U		0.00205	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
1-Methylnaphthalene	U		0.00449	0.0200	1	07/11/2024 00:37	<a href="#">WG2319703</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Naphthalene	U		0.00408	0.0200	1	07/11/2024 00:37	<a href="#">WG2319703</a>
Pyrene	U		0.00200	0.00600	1	07/11/2024 00:37	<a href="#">WG2319703</a>
(S) p-Terphenyl-d14	100			23.0-120		07/11/2024 00:37	<a href="#">WG2319703</a>
(S) Nitrobenzene-d5	94.0			14.0-149		07/11/2024 00:37	<a href="#">WG2319703</a>
(S) 2-Fluorobiphenyl	91.8			34.0-125		07/11/2024 00:37	<a href="#">WG2319703</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	5.74		1	07/10/2024 15:04	WG2318078

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	U		0.255	1.00	1	07/11/2024 15:25	<a href="#">WG2317111</a>

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	7.64	<a href="#">T8</a>	1	07/10/2024 14:42	<a href="#">WG2320495</a>

Sample Narrative:  
L1753532-03 WG2320495: 7.64 at 22C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	2640		10.0	1	07/10/2024 15:30	<a href="#">WG2320493</a>

Sample Narrative:  
L1753532-03 WG2320493: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	0.497		0.0167	0.200	1	07/09/2024 21:09	<a href="#">WG2318096</a>

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.43		0.100	1.00	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Barium	163		0.152	2.50	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Cadmium	0.133	<a href="#">J</a>	0.0855	1.00	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Copper	10.4		0.132	5.00	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Lead	9.29		0.0990	2.00	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Nickel	10.1		0.197	2.50	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Selenium	1.49	<a href="#">J</a>	0.180	2.50	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Silver	U		0.0865	0.500	5	07/24/2024 14:28	<a href="#">WG2317528</a>
Zinc	33.2		0.740	25.0	5	07/24/2024 14:28	<a href="#">WG2317528</a>

Volatile Organic Compounds (GC) by Method 8015D/GRO

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	0.0357	<a href="#">J</a>	0.0217	0.100	1	07/11/2024 07:05	<a href="#">WG2320806</a>
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120		07/11/2024 07:05	<a href="#">WG2320806</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/11/2024 06:41	<a href="#">WG2320928</a>
Toluene	U		0.00130	0.00500	1	07/11/2024 06:41	<a href="#">WG2320928</a>
Ethylbenzene	U		0.000737	0.00250	1	07/11/2024 06:41	<a href="#">WG2320928</a>
Xylenes, Total	U		0.000880	0.00650	1	07/11/2024 06:41	<a href="#">WG2320928</a>
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/11/2024 06:41	<a href="#">WG2320928</a>
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/11/2024 06:41	<a href="#">WG2320928</a>
(S) Toluene-d8	90.0			75.0-131		07/11/2024 06:41	<a href="#">WG2320928</a>
(S) 4-Bromofluorobenzene	93.3			67.0-138		07/11/2024 06:41	<a href="#">WG2320928</a>
(S) 1,2-Dichloroethane-d4	101			70.0-130		07/11/2024 06:41	<a href="#">WG2320928</a>

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4.81		1.61	4.00	1	07/11/2024 15:25	<a href="#">WG2319736</a>
C28-C36 Motor Oil Range	15.5		0.274	4.00	1	07/11/2024 15:25	<a href="#">WG2319736</a>
(S) o-Terphenyl	62.2			18.0-148		07/11/2024 15:25	<a href="#">WG2319736</a>

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Anthracene	U		0.00230	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Benzo(a)anthracene	U		0.00173	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Benzo(a)pyrene	U		0.00179	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Chrysene	U		0.00232	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Fluoranthene	U		0.00227	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Fluorene	U		0.00205	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
1-Methylnaphthalene	U		0.00449	0.0200	1	07/10/2024 22:10	<a href="#">WG2319703</a>
2-Methylnaphthalene	U		0.00427	0.0200	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Naphthalene	U		0.00408	0.0200	1	07/10/2024 22:10	<a href="#">WG2319703</a>
Pyrene	U		0.00200	0.00600	1	07/10/2024 22:10	<a href="#">WG2319703</a>
(S) p-Terphenyl-d14	103			23.0-120		07/10/2024 22:10	<a href="#">WG2319703</a>
(S) Nitrobenzene-d5	89.7			14.0-149		07/10/2024 22:10	<a href="#">WG2319703</a>
(S) 2-Fluorobiphenyl	98.6			34.0-125		07/10/2024 22:10	<a href="#">WG2319703</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R4092896-1 07/11/24 10:30

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Hexavalent Chromium	U		0.255	1.00

L1753518-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753518-01 07/11/24 14:40 • (DUP) R4092896-11 07/11/24 14:49

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

L1753537-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753537-01 07/11/24 15:52 • (DUP) R4092896-12 07/11/24 16:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4092896-2 07/11/24 10:39

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.2	102	80.0-120	

L1752968-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752968-20 07/11/24 10:57 • (MS) R4092896-3 07/11/24 11:05 • (MSD) R4092896-4 07/11/24 11:14

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	20.4	20.8	102	104	1	75.0-125			2.10	20

L1752968-20 Original Sample (OS) • Matrix Spike (MS)

(OS) L1752968-20 07/11/24 10:57 • (MS) R4092896-5 07/11/24 11:23

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	646	U	702	109	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4093001-1 07/11/24 12:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	0.417	⬇	0.255	1.00

L1753167-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1753167-02 07/11/24 12:34 • (DUP) R4093001-3 07/11/24 12:42

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.404	0.340	1	17.3	⬇	20

L1753531-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1753531-02 07/11/24 14:25 • (DUP) R4093001-4 07/11/24 14:33

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.521	0.508	1	2.63	⬇	20

Laboratory Control Sample (LCS)

(LCS) R4093001-2 07/11/24 12:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.3	103	80.0-120	

L1753531-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753531-05 07/11/24 14:57 • (MS) R4093001-5 07/12/24 07:33 • (MSD) R4093001-6 07/12/24 07:41

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	0.513	17.0	15.6	82.5	75.7	1	75.0-125			8.36	20

L1753553-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753553-01 07/12/24 08:21 • (MS) R4093001-9 07/12/24 09:01 • (MSD) R4093001-10 07/12/24 09:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	0.454	19.3	18.8	94.1	91.5	1	75.0-125			2.65	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1753531-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1753531-05 07/11/24 14:57 • (MS) R4093001-7 07/12/24 07:49

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	648	0.513	611	94.2	50	75.0-125	

L1753553-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1753553-01 07/12/24 08:21 • (MS) R4093001-11 07/12/24 09:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	651	0.454	592	90.9	50	75.0-125	

<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



L1753530-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1753530-05 07/10/24 14:42 • (DUP) R4092143-2 07/10/24 14:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.95	8.00	1	0.627		1

Sample Narrative:  
OS: 7.95 at 22.7C  
DUP: 8 at 22.7C

<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

L1753551-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1753551-04 07/10/24 14:42 • (DUP) R4092143-3 07/10/24 14:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.03	8.02	1	0.125		1

Sample Narrative:  
OS: 8.03 at 21.7C  
DUP: 8.02 at 21.7C

Laboratory Control Sample (LCS)

(LCS) R4092143-1 07/10/24 14:42

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:  
LCS: 10.01 at 22.6C

Method Blank (MB)

(MB) R4092164-1 07/10/24 15:30

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1753530-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753530-03 07/10/24 15:30 • (DUP) R4092164-3 07/10/24 15:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1100	1110	1	0.362		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1753551-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1753551-05 07/10/24 15:30 • (DUP) R4092164-4 07/10/24 15:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	415	411	1	0.969		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4092164-2 07/10/24 15:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	750	102	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4091773-1 07/09/24 20:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4091773-2 07/09/24 20:27 • (LCSD) R4091773-3 07/09/24 20:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.07	1.08	107	108	80.0-120			1.31	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R4097930-1 07/24/24 12:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

Laboratory Control Sample (LCS)

(LCS) R4097930-2 07/24/24 12:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	102	102	80.0-120	
Barium	100	109	109	80.0-120	
Cadmium	100	115	115	80.0-120	
Copper	100	107	107	80.0-120	
Lead	100	110	110	80.0-120	
Nickel	100	111	111	80.0-120	
Selenium	100	106	106	80.0-120	
Silver	20.0	23.7	119	80.0-120	
Zinc	100	102	102	80.0-120	

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L1752915-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752915-18 07/24/24 12:37 • (MS) R4097930-5 07/24/24 12:47 • (MSD) R4097930-6 07/24/24 12:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	1.25	84.5	74.4	83.2	73.1	5	75.0-125		J6	12.7	20
Barium	100	12.5	106	95.7	93.3	83.2	5	75.0-125			9.99	20
Cadmium	100	U	95.4	89.3	95.4	89.3	5	75.0-125			6.64	20
Copper	100	31.2	119	111	88.2	79.7	5	75.0-125			7.35	20
Lead	100	204	423	392	220	189	5	75.0-125	J5	J5	7.61	20
Nickel	100	5.14	91.3	78.3	86.2	73.2	5	75.0-125		J6	15.3	20
Selenium	100	0.985	91.3	82.8	90.3	81.9	5	75.0-125			9.74	20
Silver	20.0	U	20.3	19.9	101	99.4	5	75.0-125			2.05	20
Zinc	100	15.3	97.9	86.4	82.5	71.0	5	75.0-125		J6	12.5	20

Method Blank (MB)

(MB) R4093929-2 07/10/24 23:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4093929-1 07/10/24 22:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	4.15	83.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4093366-3 07/11/24 02:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	88.6			75.0-131
(S) 4-Bromofluorobenzene	95.3			67.0-138
(S) 1,2-Dichloroethane-d4	98.8			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4093366-1 07/11/24 01:06 • (LCSD) R4093366-2 07/11/24 01:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.139	0.129	111	103	70.0-123			7.46	20
Toluene	0.125	0.108	0.106	86.4	84.8	75.0-121			1.87	20
Ethylbenzene	0.125	0.109	0.0999	87.2	79.9	74.0-126			8.71	20
Xylenes, Total	0.375	0.308	0.297	82.1	79.2	72.0-127			3.64	20
1,2,4-Trimethylbenzene	0.125	0.120	0.116	96.0	92.8	70.0-126			3.39	20
1,3,5-Trimethylbenzene	0.125	0.123	0.119	98.4	95.2	73.0-127			3.31	20
(S) Toluene-d8				88.0	88.6	75.0-131				
(S) 4-Bromofluorobenzene				99.0	93.3	67.0-138				
(S) 1,2-Dichloroethane-d4				104	103	70.0-130				

L1753375-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753375-01 07/11/24 03:04 • (MS) R4093366-4 07/11/24 09:39 • (MSD) R4093366-5 07/11/24 09:59

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.108	0.111	86.4	88.8	1	10.0-149			2.74	37
Toluene	0.125	U	0.0944	0.0931	75.5	74.5	1	10.0-156			1.39	38
Ethylbenzene	0.125	U	0.0961	0.0975	76.9	78.0	1	10.0-160			1.45	38
Xylenes, Total	0.375	U	0.277	0.276	73.9	73.6	1	10.0-160			0.362	38
1,2,4-Trimethylbenzene	0.125	U	0.124	0.118	99.2	94.4	1	10.0-160			4.96	36
1,3,5-Trimethylbenzene	0.125	U	0.123	0.119	98.4	95.2	1	10.0-160			3.31	38
(S) Toluene-d8					88.1	87.4		75.0-131				
(S) 4-Bromofluorobenzene					94.5	95.6		67.0-138				
(S) 1,2-Dichloroethane-d4					105	104		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R4092774-1 07/11/24 10:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	68.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R4092774-2 07/11/24 11:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.4	70.8	50.0-150	
(S) o-Terphenyl			82.4	18.0-148	

L1753544-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753544-01 07/11/24 11:16 • (MS) R4092774-3 07/11/24 11:28 • (MSD) R4092774-4 07/11/24 11:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.3	U	27.9	32.6	57.8	67.5	1	50.0-150			15.5	20
(S) o-Terphenyl					55.9	70.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4092508-2 07/10/24 14:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	105			23.0-120
(S) Nitrobenzene-d5	95.6			14.0-149
(S) 2-Fluorobiphenyl	96.2			34.0-125

<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

Laboratory Control Sample (LCS)

(LCS) R4092508-1 07/10/24 14:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0816	102	50.0-120	
Anthracene	0.0800	0.0880	110	50.0-126	
Benzo(a)anthracene	0.0800	0.0894	112	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0888	111	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0853	107	49.0-125	
Benzo(a)pyrene	0.0800	0.0850	106	42.0-120	
Chrysene	0.0800	0.0911	114	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0893	112	47.0-125	
Fluoranthene	0.0800	0.0928	116	49.0-129	
Fluorene	0.0800	0.0896	112	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0871	109	46.0-125	
1-Methylnaphthalene	0.0800	0.0873	109	51.0-121	
2-Methylnaphthalene	0.0800	0.0854	107	50.0-120	
Naphthalene	0.0800	0.0827	103	50.0-120	
Pyrene	0.0800	0.0873	109	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4092508-1 07/10/24 14:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			107	23.0-120	
(S) Nitrobenzene-d5			100	14.0-149	
(S) 2-Fluorobiphenyl			106	34.0-125	

L1753544-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753544-01 07/10/24 20:05 • (MS) R4092487-1 07/10/24 20:22 • (MSD) R4092487-2 07/10/24 20:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0796	U	0.0742	0.0789	93.2	99.6	1	14.0-127			6.14	27
Anthracene	0.0796	U	0.0779	0.0843	97.9	106	1	10.0-145			7.89	30
Benzo(a)anthracene	0.0796	U	0.0777	0.0844	97.6	107	1	10.0-139			8.27	30
Benzo(b)fluoranthene	0.0796	U	0.0750	0.0830	94.2	105	1	10.0-140			10.1	36
Benzo(k)fluoranthene	0.0796	U	0.0705	0.0766	88.6	96.7	1	10.0-137			8.29	31
Benzo(a)pyrene	0.0796	U	0.0746	0.0810	93.7	102	1	10.0-141			8.23	31
Chrysene	0.0796	U	0.0806	0.0879	101	111	1	10.0-145			8.66	30
Dibenz(a,h)anthracene	0.0796	U	0.0754	0.0814	94.7	103	1	10.0-132			7.65	31
Fluoranthene	0.0796	U	0.0791	0.0875	99.4	110	1	10.0-153			10.1	33
Fluorene	0.0796	U	0.0784	0.0875	98.5	110	1	11.0-130			11.0	29
Indeno(1,2,3-cd)pyrene	0.0796	U	0.0726	0.0791	91.2	99.9	1	10.0-137			8.57	32
1-Methylnaphthalene	0.0796	U	0.0819	0.0848	103	107	1	10.0-142			3.48	28
2-Methylnaphthalene	0.0796	U	0.0771	0.0803	96.9	101	1	10.0-137			4.07	28
Naphthalene	0.0796	U	0.0794	0.0807	99.7	102	1	10.0-135			1.62	27
Pyrene	0.0796	U	0.0781	0.0876	98.1	111	1	10.0-148			11.5	35
(S) p-Terphenyl-d14					106	106		23.0-120				
(S) Nitrobenzene-d5					97.3	97.7		14.0-149				
(S) 2-Fluorobiphenyl					101	104		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



# GLOSSARY OF TERMS

## 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.

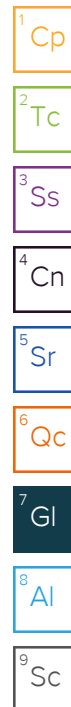
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
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

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.



# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
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>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

\* 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 Analytical.









**Civitas - CO**

Sample Delivery Group: L1753526  
Samples Received: 07/03/2024  
Project Number: P1137  
Description: Bury Crandell 61N68/NENE/C unit

Report To: Sam Vogt / Jacob Evans  
6855 W. 118th Ave  
Broomfield, CO 80020

Entire Report Reviewed By:



Chris Ward  
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.

**Pace Analytical National**12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [mydata.pacelabs.com](https://mydata.pacelabs.com)

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# SAMPLE SUMMARY

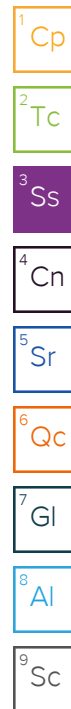
## BG01@6" L1753526-01 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:45

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319127	1	07/14/24 08:15	07/14/24 08:15	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317848	1	07/11/24 14:04	07/15/24 12:02	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2322320	1	07/13/24 09:30	07/13/24 10:48	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2322316	1	07/13/24 09:31	07/13/24 13:56	KA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2319133	1	07/11/24 15:12	07/12/24 16:06	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317504	5	07/10/24 15:57	07/25/24 13:35	SJM	Mt. Juliet, TN



## BG02@6" L1753526-02 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:50

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319127	1	07/14/24 08:17	07/14/24 08:17	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317848	1	07/11/24 14:04	07/15/24 12:11	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2322320	1	07/13/24 09:30	07/13/24 10:48	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2322316	1	07/13/24 09:31	07/13/24 13:56	KA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2319133	1	07/11/24 15:12	07/12/24 16:08	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317528	5	07/09/24 06:51	07/24/24 13:06	SJM	Mt. Juliet, TN

## BG03@6" L1753526-03 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 13:55

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319116	1	07/14/24 07:40	07/14/24 07:40	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317848	1	07/11/24 14:04	07/15/24 13:14	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2322321	1	07/13/24 09:29	07/13/24 10:37	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2322319	1	07/13/24 09:32	07/13/24 14:21	KA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2319119	1	07/12/24 13:25	07/14/24 08:32	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317528	5	07/09/24 06:51	07/24/24 13:10	SJM	Mt. Juliet, TN

## BG04@6" L1753526-04 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 14:00

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319116	1	07/14/24 07:42	07/14/24 07:42	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317848	1	07/11/24 14:04	07/15/24 13:32	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2322321	1	07/13/24 09:29	07/13/24 10:37	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2322319	1	07/13/24 09:32	07/13/24 14:21	KA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2319119	1	07/12/24 13:25	07/14/24 08:34	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317504	5	07/10/24 15:57	07/25/24 13:38	SJM	Mt. Juliet, TN

## BG05@6" L1753526-05 Solid

Collected by  
Sean Clarke

Collected date/time  
07/01/24 14:05

Received date/time  
07/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319124	1	07/11/24 22:45	07/11/24 22:45	DJS	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2317848	1	07/11/24 14:04	07/15/24 13:41	EKB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2321219	1	07/11/24 12:27	07/11/24 14:00	KA	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2321221	1	07/11/24 12:29	07/11/24 15:00	KRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2319130	1	07/10/24 10:28	07/10/24 19:09	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2317504	5	07/10/24 15:57	07/25/24 13:42	SJM	Mt. Juliet, TN

# CASE NARRATIVE

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.



Chris Ward  
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



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.628		1	07/14/2024 08:15	WG2319127

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/15/2024 12:02	<a href="#">WG2317848</a>

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	7.98	<a href="#">T8</a>	1	07/13/2024 10:48	<a href="#">WG2322320</a>

Sample Narrative:

L1753526-01 WG2322320: 7.98 at 22.5C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	352		10.0	1	07/13/2024 13:56	<a href="#">WG2322316</a>

Sample Narrative:

L1753526-01 WG2322316: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	1.07		0.0167	0.200	1	07/12/2024 16:06	<a href="#">WG2319133</a>

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	11.1		0.100	1.00	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Barium	198		0.152	2.50	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Cadmium	0.427	<a href="#">J</a>	0.0855	1.00	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Copper	22.0		0.132	5.00	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Lead	17.2		0.0990	2.00	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Nickel	20.4		0.197	2.50	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Selenium	1.91	<a href="#">J</a>	0.180	2.50	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Silver	0.150	<a href="#">J</a>	0.0865	0.500	5	07/25/2024 13:35	<a href="#">WG2317504</a>
Zinc	73.2		0.740	25.0	5	07/25/2024 13:35	<a href="#">WG2317504</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	1.02		1	07/14/2024 08:17	WG2319127

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U	J6	0.255	1.00	1	07/15/2024 12:11	WG2317848

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	7.99	T8	1	07/13/2024 10:48	WG2322320

Sample Narrative:

L1753526-02 WG2322320: 7.99 at 22.5C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	372		10.0	1	07/13/2024 13:56	WG2322316

Sample Narrative:

L1753526-02 WG2322316: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	1.18		0.0167	0.200	1	07/12/2024 16:08	WG2319133

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	7.43		0.100	1.00	5	07/24/2024 13:06	WG2317528
Barium	190		0.152	2.50	5	07/24/2024 13:06	WG2317528
Cadmium	0.413	J	0.0855	1.00	5	07/24/2024 13:06	WG2317528
Copper	19.3		0.132	5.00	5	07/24/2024 13:06	WG2317528
Lead	17.3		0.0990	2.00	5	07/24/2024 13:06	WG2317528
Nickel	17.7		0.197	2.50	5	07/24/2024 13:06	WG2317528
Selenium	2.02	J	0.180	2.50	5	07/24/2024 13:06	WG2317528
Silver	0.184	J	0.0865	0.500	5	07/24/2024 13:06	WG2317528
Zinc	63.5		0.740	25.0	5	07/24/2024 13:06	WG2317528

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	1.21		1	07/14/2024 07:40	WG2319116

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/15/2024 13:14	<a href="#">WG2317848</a>

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	8.15	<a href="#">T8</a>	1	07/13/2024 10:37	<a href="#">WG2322321</a>

Sample Narrative:

L1753526-03 WG2322321: 8.15 at 23C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	284		10.0	1	07/13/2024 14:21	<a href="#">WG2322319</a>

Sample Narrative:

L1753526-03 WG2322319: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.388		0.0167	0.200	1	07/14/2024 08:32	<a href="#">WG2319119</a>

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	5.17		0.100	1.00	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Barium	207		0.152	2.50	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Cadmium	0.312	<a href="#">J</a>	0.0855	1.00	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Copper	15.4		0.132	5.00	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Lead	13.8		0.0990	2.00	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Nickel	16.8		0.197	2.50	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Selenium	1.77	<a href="#">J</a>	0.180	2.50	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Silver	U		0.0865	0.500	5	07/24/2024 13:10	<a href="#">WG2317528</a>
Zinc	53.2		0.740	25.0	5	07/24/2024 13:10	<a href="#">WG2317528</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	0.398		1	07/14/2024 07:42	WG2319116

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	0.295	J	0.255	1.00	1	07/15/2024 13:32	WG2317848

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	6.92	T8	1	07/13/2024 10:37	WG2322321

Sample Narrative:

L1753526-04 WG2322321: 6.92 at 23C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	132		10.0	1	07/13/2024 14:21	WG2322319

Sample Narrative:

L1753526-04 WG2322319: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	2.65		0.0167	0.200	1	07/14/2024 08:34	WG2319119

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	3.90		0.100	1.00	5	07/25/2024 13:38	WG2317504
Barium	549		0.152	2.50	5	07/25/2024 13:38	WG2317504
Cadmium	0.450	J	0.0855	1.00	5	07/25/2024 13:38	WG2317504
Copper	18.7		0.132	5.00	5	07/25/2024 13:38	WG2317504
Lead	19.2		0.0990	2.00	5	07/25/2024 13:38	WG2317504
Nickel	10.2		0.197	2.50	5	07/25/2024 13:38	WG2317504
Selenium	1.48	J	0.180	2.50	5	07/25/2024 13:38	WG2317504
Silver	0.245	J	0.0865	0.500	5	07/25/2024 13:38	WG2317504
Zinc	48.1		0.740	25.0	5	07/25/2024 13:38	WG2317504

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	1.30		1	07/11/2024 22:45	WG2319124

Wet Chemistry by Method 7199

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Hexavalent Chromium	U		0.255	1.00	1	07/15/2024 13:41	<a href="#">WG2317848</a>

Wet Chemistry by Method 9045D

	Result su	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
pH	7.20	<a href="#">T8</a>	1	07/11/2024 14:00	<a href="#">WG2321219</a>

Sample Narrative:

L1753526-05 WG2321219: 7.2 at 23.7C

Wet Chemistry by Method 9050AMod

	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Analyte						
Specific Conductance	586		10.0	1	07/11/2024 15:00	<a href="#">WG2321221</a>

Sample Narrative:

L1753526-05 WG2321221: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Analyte							
Hot Water Sol. Boron	0.361		0.0167	0.200	1	07/10/2024 19:09	<a href="#">WG2319130</a>

Metals (ICPMS) by Method 6020

	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Analyte							
Arsenic	3.96		0.100	1.00	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Barium	298		0.152	2.50	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Cadmium	0.452	<a href="#">J</a>	0.0855	1.00	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Copper	21.2		0.132	5.00	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Lead	32.5		0.0990	2.00	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Nickel	9.71		0.197	2.50	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Selenium	1.11	<a href="#">J</a>	0.180	2.50	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Silver	U		0.0865	0.500	5	07/25/2024 13:42	<a href="#">WG2317504</a>
Zinc	59.2		0.740	25.0	5	07/25/2024 13:42	<a href="#">WG2317504</a>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4093939-1 07/15/24 09:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1753526-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753526-03 07/15/24 13:14 • (DUP) R4093939-11 07/15/24 13:23

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

L1753530-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1753530-05 07/15/24 14:43 • (DUP) R4093939-12 07/15/24 14:52

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.286	U	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R4093939-2 07/15/24 09:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.3	103	80.0-120	

L1753524-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753524-01 07/15/24 10:24 • (MS) R4093939-3 07/15/24 10:33 • (MSD) R4093939-4 07/15/24 10:42

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	17.2	16.3	86.0	81.4	1	75.0-125			5.48	20

L1753526-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753526-02 07/15/24 12:11 • (MS) R4093939-7 07/15/24 12:20 • (MSD) R4093939-8 07/15/24 12:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	11.7	13.1	58.4	65.6	1	75.0-125	J6	J6	11.6	20



L1753524-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1753524-01 07/15/24 10:24 • (MS) R4093939-5 07/15/24 11:09

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	643	U	557	86.6	50	75.0-125	

L1753526-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1753526-02 07/15/24 12:11 • (MS) R4093939-9 07/15/24 12:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hexavalent Chromium	636	U	493	77.4	50	75.0-125	

<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

L1753501-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753501-01 07/11/24 14:00 • (DUP) R4092661-2 07/11/24 14:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.57	7.54	1	0.397		1

Sample Narrative:

OS: 7.57 at 24.7C

DUP: 7.54 at 24.5C



L1753698-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1753698-04 07/11/24 14:00 • (DUP) R4092661-3 07/11/24 14:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.47	7.48	1	0.134		1

Sample Narrative:

OS: 7.47 at 23.5C

DUP: 7.48 at 23.3C

Laboratory Control Sample (LCS)

(LCS) R4092661-1 07/11/24 14:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.01 at 22.9C



L1752191-26 Original Sample (OS) • Duplicate (DUP)

(OS) L1752191-26 07/13/24 10:48 • (DUP) R4093389-2 07/13/24 10:48

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.05	8.01	1	0.498		1

Sample Narrative:

OS: 8.05 at 23.1C

DUP: 8.01 at 23.2C

<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

L1753698-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753698-03 07/13/24 10:48 • (DUP) R4093389-3 07/13/24 10:48

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.86	7.83	1	0.382		1

Sample Narrative:

OS: 7.86 at 22.5C

DUP: 7.83 at 22.7C

Laboratory Control Sample (LCS)

(LCS) R4093389-1 07/13/24 10:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 22.7C

L1753526-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753526-03 07/13/24 10:37 • (DUP) R4093385-2 07/13/24 10:37

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.15	8.18	1	0.367		1

Sample Narrative:

OS: 8.15 at 23C

DUP: 8.18 at 22.9C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1753945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753945-01 07/13/24 10:37 • (DUP) R4093385-3 07/13/24 10:37

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.19	1	0.244		1

Sample Narrative:

OS: 8.21 at 22.5C

DUP: 8.19 at 22.4C

Laboratory Control Sample (LCS)

(LCS) R4093385-1 07/13/24 10:37

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 22.5C

Method Blank (MB)

(MB) R4092662-1 07/11/24 15:00

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1753505-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753505-03 07/11/24 15:00 • (DUP) R4092662-3 07/11/24 15:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1110	1110	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1753698-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753698-01 07/11/24 15:00 • (DUP) R4092662-4 07/11/24 15:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4810	4810	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4092662-2 07/11/24 15:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	720	98.2	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4093445-1 07/13/24 13:56

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1753501-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1753501-03 07/13/24 13:56 • (DUP) R4093445-3 07/13/24 13:56

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	504	507	1	0.593		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1753526-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1753526-02 07/13/24 13:56 • (DUP) R4093445-4 07/13/24 13:56

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	372	371	1	0.269		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4093445-2 07/13/24 13:56

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	751	102	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4093448-1 07/13/24 14:21

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1753544-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1753544-04 07/13/24 14:21 • (DUP) R4093448-3 07/13/24 14:21

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	701	707	1	0.852		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1753553-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1753553-01 07/13/24 14:21 • (DUP) R4093448-4 07/13/24 14:21

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	544	546	1	0.367		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4093448-2 07/13/24 14:21

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	730	99.6	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R4093621-1 07/14/24 08:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4093621-2 07/14/24 08:29 • (LCSD) R4093621-3 07/14/24 08:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.02	1.02	102	102	80.0-120			0.236	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4092282-1 07/10/24 18:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4092282-2 07/10/24 18:47 • (LCSD) R4092282-3 07/10/24 18:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.04	1.03	104	103	80.0-120			0.816	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4093249-1 07/12/24 15:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4093249-2 07/12/24 15:36 • (LCSD) R4093249-3 07/12/24 15:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.03	1.05	103	105	80.0-120			1.56	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4098429-1 07/25/24 11:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R4098429-2 07/25/24 11:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.5	97.5	80.0-120	
Barium	100	89.9	89.9	80.0-120	
Cadmium	100	108	108	80.0-120	
Copper	100	96.6	96.6	80.0-120	
Lead	100	95.7	95.7	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	20.2	101	80.0-120	
Zinc	100	95.2	95.2	80.0-120	

L1752978-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752978-14 07/25/24 11:33 • (MS) R4098429-5 07/25/24 11:43 • (MSD) R4098429-6 07/25/24 11:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	2.48	109	98.9	106	96.5	5	75.0-125			9.25	20
Barium	100	21.7	120	119	97.8	97.7	5	75.0-125			0.101	20
Cadmium	100	43.6	168	143	125	99.4	5	75.0-125			16.4	20
Copper	100	41.8	141	158	99.0	116	5	75.0-125			11.3	20
Lead	100	3.69	105	105	101	102	5	75.0-125			0.589	20
Nickel	100	8.76	119	118	111	109	5	75.0-125			1.48	20
Selenium	100	1.09	107	102	106	101	5	75.0-125			5.17	20
Silver	20.0	U	20.5	19.5	103	97.5	5	75.0-125			5.09	20
Zinc	100	474	581	1640	107	1160	5	75.0-125		J3 V	95.2	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4097930-1 07/24/24 12:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

Laboratory Control Sample (LCS)

(LCS) R4097930-2 07/24/24 12:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	102	102	80.0-120	
Barium	100	109	109	80.0-120	
Cadmium	100	115	115	80.0-120	
Copper	100	107	107	80.0-120	
Lead	100	110	110	80.0-120	
Nickel	100	111	111	80.0-120	
Selenium	100	106	106	80.0-120	
Silver	20.0	23.7	119	80.0-120	
Zinc	100	102	102	80.0-120	

7  
Gl

8  
Al

9  
Sc

L1752915-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752915-18 07/24/24 12:37 • (MS) R4097930-5 07/24/24 12:47 • (MSD) R4097930-6 07/24/24 12:50

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	1.25	84.5	74.4	83.2	73.1	5	75.0-125		J6	12.7	20
Barium	100	12.5	106	95.7	93.3	83.2	5	75.0-125			9.99	20
Cadmium	100	U	95.4	89.3	95.4	89.3	5	75.0-125			6.64	20
Copper	100	31.2	119	111	88.2	79.7	5	75.0-125			7.35	20
Lead	100	204	423	392	220	189	5	75.0-125	J5	J5	7.61	20
Nickel	100	5.14	91.3	78.3	86.2	73.2	5	75.0-125		J6	15.3	20
Selenium	100	0.985	91.3	82.8	90.3	81.9	5	75.0-125			9.74	20
Silver	20.0	U	20.3	19.9	101	99.4	5	75.0-125			2.05	20
Zinc	100	15.3	97.9	86.4	82.5	71.0	5	75.0-125		J6	12.5	20



# GLOSSARY OF TERMS

## 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

MDL	Method Detection Limit.
RDL	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.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

<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

# ACCREDITATIONS & LOCATIONS

## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
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>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

\* 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 Analytical.



[illegible]

