Shaffer Newman 24-13

SWSW Sec. 13-T1N-R66W

API #: 013-06583

Facility ID: 464423

Remediation Project #: 33827

Form 19 Data Package

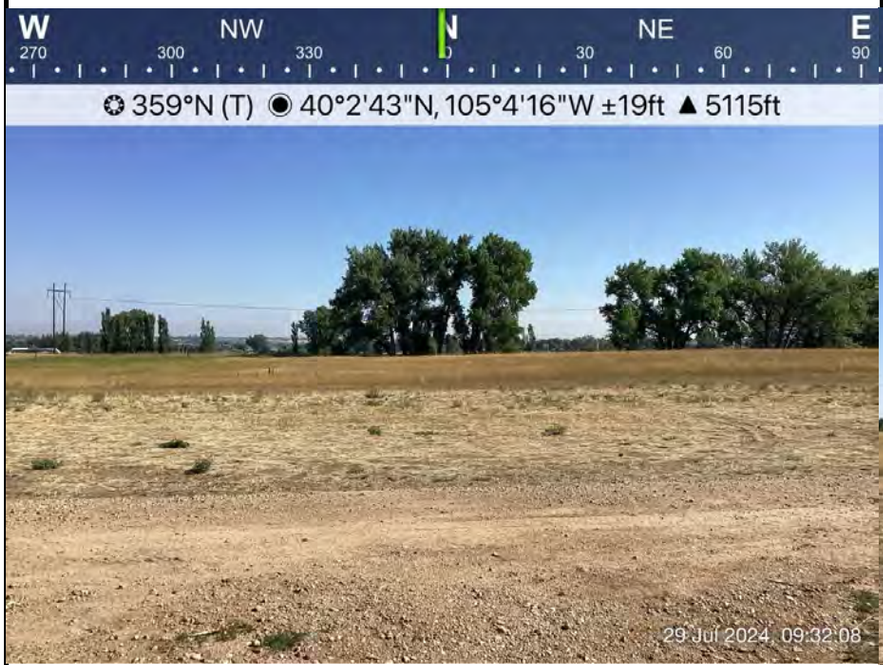
July 2024

Prepared by Tasman, Inc.

On behalf of Crestone Peak Resources Operating, LLC

PHOTO LOG

Photographic Log



Equipment ID:	Equipment Type:	
Material:	Volume:	Contents:
Notes/Conditions: Surrounding land use facing N.		

Equipment ID:	Equipment Type:	
Material:	Volume:	Contents:
Notes/Conditions: Surrounding land use facing S.		

TASMAN

Photographic Log

Equipment ID:	Equipment Type:		Equipment ID:	Equipment Type:	
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: Surrounding land use facing E.			Notes/Conditions: Surrounding land use facing W.		

TASMAN

Photographic Log

Equipment ID:	Equipment Type:		Equipment ID:	Equipment Type:	
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: Soil sampling locations.			Notes/Conditions: Soil sampling locations.		

TASMAN

Photographic Log

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

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

FIGURES

105°7'30"W 105°7'0"W 105°6'30"W 105°6'0"W 105°5'30"W 105°5'0"W 105°4'30"W 105°4'0"W 105°3'30"W 105°3'0"W 105°2'30"W 105°2'0"W 105°1'30"W 105°1'0"W

40°4'0"N 40°3'30"N 40°3'0"N 40°2'30"N 40°2'0"N 40°1'30"N

Shaffer Newman 24-13

Legend

Site Location

N

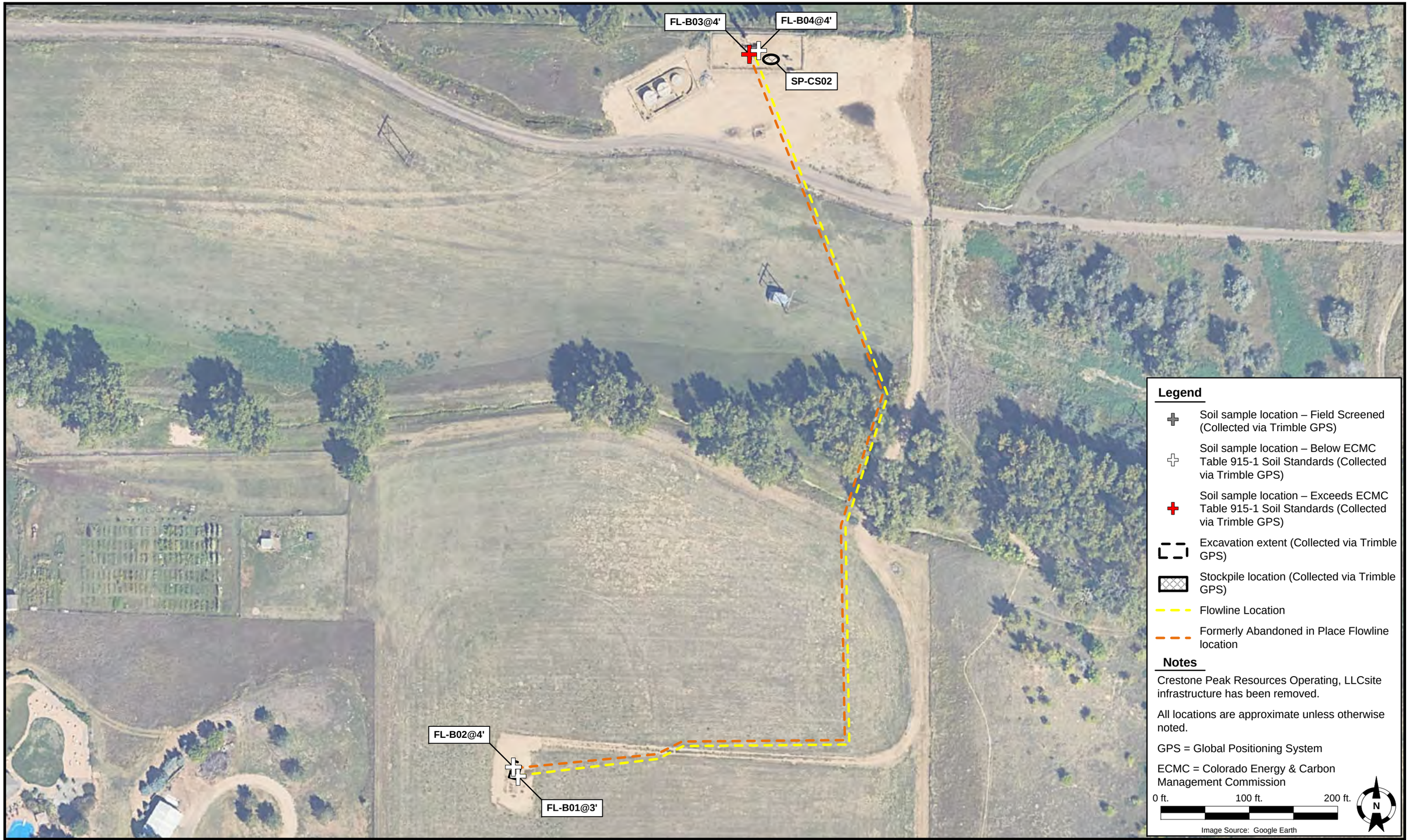
0 2,000 4,000 Feet

1 inch = 2,000 feet

1:24,000

DATE: August 2024 DESIGNED BY: S. Vogt DRAWN BY: J. Woffinden	TASMAN	**Tasman, Inc.** **6855 W. 119th Ave** **Broomfield, CO 80020**	**Crestone Peak Resources Operating LLC** **Shaffer Newman 24-13** SWSW Sec. 13-T1N-R69W Boulder County, Colorado	Site Location Map	Figure 1

DATE: August 15, 2024 DESIGNED BY: S. Vogt DRAWN BY: L. Molson	TASMAN **Tasman, Inc.** **6855 W119th Ave.** **Broomfield, CO 80020**	**Crestone Peak Resources Operating, LLC** **Shaffer Newman 24-13** SWSW Sec. 13-T1N-R69W Boulder County, Colorado	Wellhead Soil Sample Location Map (07/29/2024)	Figure 2



DATE:	August 15, 2024
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Molson

TASMAN

Tasman, Inc.
6855 W119th Ave.
Broomfield, CO 80020

Crestone Peak Resources Operating, LLC
Shaffer Newman 24-13
SWSW Sec. 13-T1N-R66W
Boulder County, Colorado

Flowline Soil Sample Location Map (07/29/2024)

Figure 2

TABLES

TABLE 1
SHAFFER NEWMAN 24-13
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@5’	5'	07/29/2024	4.6	40.045360	-105.071421	1.1	Y
WH-N01@4’	4'	07/29/2024	3.4	40.045386	-105.071405	1	N
WH-S01@4’	4'	07/29/2024	1.6	40.045350	-105.071428	1.1	N
WH-E01@4’	4'	07/29/2024	1.2	40.045368	-105.071404	1	N
WH-W01@4'	4'	07/29/2024	3.1	40.045368	-105.071429	1.1	N
FL-B01@3’	3'	07/29/2024	91.4	40.045358	-105.071406	1	Y
FL-B02@4’	4'	07/29/2024	2.6	40.045379	-105.071414	1	Y
SP-CS01	-	07/29/2024	2.5	40.045409	-105.071463	-	Y
FL-B03@4’	4'	07/29/2024	107.2	40.047594	-105.070475	0.9	Y
FL-B04@4’	4'	07/29/2024	4.0	40.047598	-105.070439	0.9	Y
SP-CS02	-	07/29/2024	3.2	40.047602	-105.070442	-	Y

Notes:
PID = Photoionization Detector
ppm = parts per million
GPS = Global Positioning System
PDOP = Position Dilution of Precision
- = Not Applicable

TABLE 2
SHAFFER NEWMAN 24-13
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 [1]			**0.0026**	**0.69**	**0.78**	**9.9**	**0.0038**	**500**			**0.0081**	**0.0087**
ECMC Organic Compounds in Soils - RSL [2]			**1.2**	**490**	**5.8**	**58**	**2**	**500**			**30**	**27**
WH-B01@5'	5'	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	<1.61	<0.274	<0.00158	<0.00200
FL-B01@3'	3'	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	82.1	<0.274	<0.00158	<0.00200
FL-B02@4'	4'	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	<1.61	<0.274	<0.00158	<0.00200
SP-CS01	-	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	<1.61	<0.274	<0.00158	<0.00200
FL-B03@4'	4'	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	**0.123**	<0.0217	<1.61	<0.274	**0.00924**	<0.00200
FL-B04@4'	4'	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	<1.61	<0.274	<0.00158	<0.00200
SP-CS02	-	07/29/2024	<0.000467	<0.00130	<0.000737	<0.000880	*<0.00408*	<0.0217	<1.61	<0.274	<0.00158	<0.00200

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
SHAFFER NEWMAN 24-13
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 [1]			**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 [2]			**360**	**1,800**	**1.1**	**1.1**	**11**	**0.11**	**110**	**0.11**	**240**	**240**	**1.1**	**18**	**24**	**180**
WH-B01@5’	5'	07/29/2024	<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
FL-B01@3’	3'	07/29/2024	<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
FL-B02@4’	4'	07/29/2024	<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
SP-CS01	-	07/29/2024	<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
FL-B03@4’	4'	07/29/2024	<0.00209	<0.00230	<0.00173	<0.00153	<0.00215	<0.00179	<0.00232	<0.00172	<0.00227	<0.00205	<0.00181	**0.0273**	**0.0431**	<0.00200
FL-B04@4’	4'	07/29/2024	<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
SP-CS02	-	07/29/2024	<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 = Dibenz(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
SHAFFER NEWMAN 24-13
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 [1]			**0.29**	**82**	**0.38**	**0.00067**	**46**	**14**	**26**	**0.26**	**0.8**	**370**
ECMC Metals in Soils - RSL [2]			**0.68**	**15,000**	**71**	**0.3**	**3,100**	**400**	**1,500**	**390**	**390**	**23,000**
WH-B01@5’	5'	07/29/2024	**2.6**	**102**	0.12	*<0.255*	11.1	10.3	10.2	<0.47	<0.47	33.3
FL-B01@3’	3'	07/29/2024	**3.0**	**116**	0.21	*<0.255*	12.3	13.0	10.2	<0.50	<0.50	34.1
FL-B02@4’	4'	07/29/2024	**2.6**	**110**	0.11	*<0.255*	12.7	**35.5**	9.8	<0.47	<0.47	32.9
SP-CS01	-	07/29/2024	**2.5**	77.0	<0.074	*<0.255*	9.4	9.1	10.1	<0.47	<0.47	29.9
FL-B03@4’	4'	07/29/2024	**2.9**	75.0	0.12	*<0.255*	9.9	7.9	10.8	<0.50	<0.50	32.2
FL-B04@4’	4'	07/29/2024	**3.3**	81.3	0.25	*<0.255*	10.7	8.4	10.1	<0.49	<0.49	33.7
SP-CS02	-	07/29/2024	**2.3**	60.2	0.25	*<0.255*	8.6	7.0	8.4	<0.48	<0.48	29.1

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

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

TABLE 5
SHAFFER NEWMAN 24-13
SOIL ANALYTICAL DATA - SOIL RECLAMATION
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
ECMC Soil Suitability for Reclamation[(1)]			**6 - 8.3**	**< 6**	**< 4**	**2**
WH-B01@5’	5'	07/29/2024	8.13	2.5	0.842	<0.30
FL-B01@3’	3'	07/29/2024	8.04	0.85	0.520	<0.30
FL-B02@4’	4'	07/29/2024	**8.36**	0.30	0.425	<0.30
SP-CS01	-	07/29/2024	8.15	0.61	0.450	<0.30
FL-B03@4’	4'	07/29/2024	7.65	0.56	0.681	0.41
FL-B04@4’	4'	07/29/2024	7.43	0.27	0.392	<0.30
SP-CS02	-	07/29/2024	7.12	0.29	0.342	<0.30

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

LABORATORY ANALYTICAL DATA

ANALYTICAL REPORT

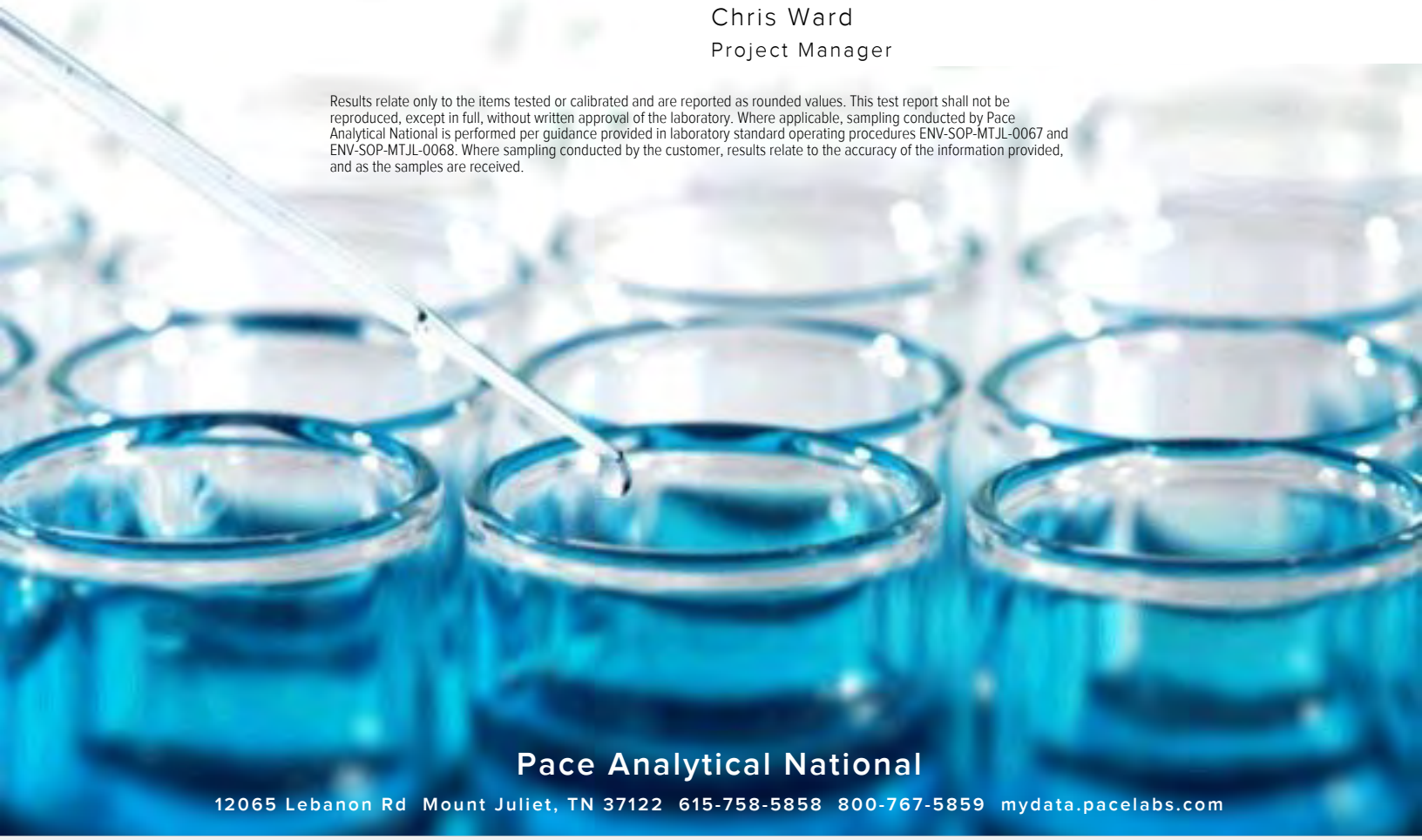
August 15, 2024

Civitas - CO

Sample Delivery Group:	L1762157
Samples Received:	07/31/2024
Project Number:	24009
Description:	Shaffer Newman 24-13
Report To:	Sam Vogt / Jacob Evans
	6855 W. 118th Ave
	Broomfield, CO 80020

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

WH-B01 @ 5 L1762157-01 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 09:30 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 22:51	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 18:21	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2335894	1	08/03/24 18:03	08/04/24 06:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 07:14	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336838	1	08/06/24 06:39	08/06/24 19:43	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

FL-B01 @ 3 L1762157-02 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 09:40 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 22:57	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 18:40	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2335894	1	08/03/24 18:03	08/04/24 06:28	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 09:51	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336838	1	08/06/24 06:39	08/06/24 20:01	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

FL-B02 @ 4 L1762157-03 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 09:42 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 23:09	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 18:59	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2335894	1	08/03/24 18:03	08/04/24 06:47	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 07:28	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336838	1	08/06/24 06:39	08/06/24 20:18	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

SP-CS01 L1762157-04 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 09:44 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 23:16	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 19:29	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2335894	1	08/03/24 18:03	08/04/24 07:05	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 07:42	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336839	1	08/06/24 07:46	08/06/24 18:55	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

FL-B03 @ 4 L1762157-05 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 11:00 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 23:22	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 19:38	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2336135	1	08/03/24 18:03	08/04/24 16:21	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 09:22	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336839	1	08/06/24 07:46	08/06/24 19:13	DSH	Mt. Juliet, TN

FL-B03 @ 4 L1762157-05 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 11:00 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

FL-B04 @ 4 L1762157-06 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 11:02 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 23:28	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 19:57	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2336135	1	08/03/24 18:03	08/04/24 16:41	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 12:15	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336839	1	08/06/24 07:46	08/06/24 19:31	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

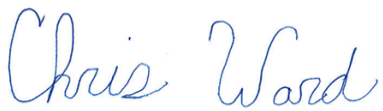
SP-CS02 L1762157-07 Solid

Collected by: Angela Kirylo | Collected date/time: 07/29/24 11:02 | Received date/time: 07/31/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 7199	WG2335486	1	08/12/24 11:24	08/12/24 23:34	EKB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2336217	1	08/03/24 18:03	08/05/24 20:16	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2336135	1	08/03/24 18:03	08/04/24 17:00	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2336843	1	08/06/24 14:18	08/07/24 07:57	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2336839	1	08/06/24 07:46	08/06/24 19:48	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2334055	1	08/13/24 00:00	08/13/24 00:00	-	Minneapolis, MN 55414

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

Project Narrative

The requested project specific reporting limits may be less than laboratory standard quantitation limits (PQL) but will be greater than or equal to the laboratory method detection limits (MDL). It is noted that results reported below lab standard quantitation limits (PQLs) may result in false positive/false negative values that may require additional laboratory quality assurance review, if requested. Routine laboratory procedures do not initiate a data review process for detections below the laboratory's PQL unless requested by the client.

L1762157 -01, -02, -03, -04, -05, -06, -07 contains subout data that is included after the chain of custody.

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 22:51	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 18:21	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*82.8*			*77.0-120*	*08/05/2024 18:21*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 06:10	WG2335894
Toluene	ND		0.00500	1	08/04/2024 06:10	WG2335894
Ethylbenzene	ND		0.00500	1	08/04/2024 06:10	WG2335894
Xylenes, Total	ND		0.0100	1	08/04/2024 06:10	WG2335894
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:10	WG2335894
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:10	WG2335894
(S) Toluene-d8	*106*			*75.0-131*	*08/04/2024 06:10*	WG2335894
(S) 4-Bromofluorobenzene	*104*			*67.0-138*	*08/04/2024 06:10*	WG2335894
(S) 1,2-Dichloroethane-d4	*97.2*			*70.0-130*	*08/04/2024 06:10*	WG2335894

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 07:14	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 07:14	WG2336843
(S) o-Terphenyl	*35.5*			*18.0-148*	*08/07/2024 07:14*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Anthracene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Chrysene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Fluoranthene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Fluorene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 19:43	WG2336838
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:43	WG2336838
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:43	WG2336838
Naphthalene	ND		0.00408	1	08/06/2024 19:43	WG2336838
Pyrene	ND		0.00500	1	08/06/2024 19:43	WG2336838
(S) p-Terphenyl-d14	*60.4*			*23.0-120*	*08/06/2024 19:43*	WG2336838
(S) Nitrobenzene-d5	*62.4*			*14.0-149*	*08/06/2024 19:43*	WG2336838
(S) 2-Fluorobiphenyl	*72.9*			*34.0-125*	*08/06/2024 19:43*	WG2336838

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 22:57	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 18:40	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*80.0*			*77.0-120*	*08/05/2024 18:40*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 06:28	WG2335894
Toluene	ND		0.00500	1	08/04/2024 06:28	WG2335894
Ethylbenzene	ND		0.00500	1	08/04/2024 06:28	WG2335894
Xylenes, Total	ND		0.0100	1	08/04/2024 06:28	WG2335894
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:28	WG2335894
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:28	WG2335894
(S) Toluene-d8	*108*			*75.0-131*	*08/04/2024 06:28*	WG2335894
(S) 4-Bromofluorobenzene	*106*			*67.0-138*	*08/04/2024 06:28*	WG2335894
(S) 1,2-Dichloroethane-d4	*98.1*			*70.0-130*	*08/04/2024 06:28*	WG2335894

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	82.1		50.0	1	08/07/2024 09:51	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 09:51	WG2336843
(S) o-Terphenyl	*43.3*			*18.0-148*	*08/07/2024 09:51*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Anthracene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Chrysene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Fluoranthene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Fluorene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 20:01	WG2336838
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 20:01	WG2336838
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 20:01	WG2336838
Naphthalene	ND		0.00408	1	08/06/2024 20:01	WG2336838
Pyrene	ND		0.00500	1	08/06/2024 20:01	WG2336838
(S) p-Terphenyl-d14	*67.7*			*23.0-120*	*08/06/2024 20:01*	WG2336838
(S) Nitrobenzene-d5	*68.0*			*14.0-149*	*08/06/2024 20:01*	WG2336838
(S) 2-Fluorobiphenyl	*77.5*			*34.0-125*	*08/06/2024 20:01*	WG2336838

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 23:09	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 18:59	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*82.2*			*77.0-120*	*08/05/2024 18:59*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 06:47	WG2335894
Toluene	ND		0.00500	1	08/04/2024 06:47	WG2335894
Ethylbenzene	ND		0.00500	1	08/04/2024 06:47	WG2335894
Xylenes, Total	ND		0.0100	1	08/04/2024 06:47	WG2335894
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:47	WG2335894
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 06:47	WG2335894
(S) Toluene-d8	*106*			*75.0-131*	*08/04/2024 06:47*	WG2335894
(S) 4-Bromofluorobenzene	*107*			*67.0-138*	*08/04/2024 06:47*	WG2335894
(S) 1,2-Dichloroethane-d4	*97.8*			*70.0-130*	*08/04/2024 06:47*	WG2335894

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 07:28	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 07:28	WG2336843
(S) o-Terphenyl	*39.4*			*18.0-148*	*08/07/2024 07:28*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Anthracene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Chrysene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Fluoranthene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Fluorene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 20:18	WG2336838
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 20:18	WG2336838
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 20:18	WG2336838
Naphthalene	ND		0.00408	1	08/06/2024 20:18	WG2336838
Pyrene	ND		0.00500	1	08/06/2024 20:18	WG2336838
(S) p-Terphenyl-d14	*61.5*			*23.0-120*	*08/06/2024 20:18*	WG2336838
(S) Nitrobenzene-d5	*60.9*			*14.0-149*	*08/06/2024 20:18*	WG2336838
(S) 2-Fluorobiphenyl	*70.4*			*34.0-125*	*08/06/2024 20:18*	WG2336838

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 23:16	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 19:29	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*80.6*			*77.0-120*	*08/05/2024 19:29*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 07:05	WG2335894
Toluene	ND		0.00500	1	08/04/2024 07:05	WG2335894
Ethylbenzene	ND		0.00500	1	08/04/2024 07:05	WG2335894
Xylenes, Total	ND		0.0100	1	08/04/2024 07:05	WG2335894
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 07:05	WG2335894
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 07:05	WG2335894
(S) Toluene-d8	*106*			*75.0-131*	*08/04/2024 07:05*	WG2335894
(S) 4-Bromofluorobenzene	*105*			*67.0-138*	*08/04/2024 07:05*	WG2335894
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*	*08/04/2024 07:05*	WG2335894

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 07:42	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 07:42	WG2336843
(S) o-Terphenyl	*42.5*			*18.0-148*	*08/07/2024 07:42*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Anthracene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Chrysene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Fluoranthene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Fluorene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 18:55	WG2336839
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 18:55	WG2336839
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 18:55	WG2336839
Naphthalene	ND		0.00408	1	08/06/2024 18:55	WG2336839
Pyrene	ND		0.00500	1	08/06/2024 18:55	WG2336839
(S) p-Terphenyl-d14	*65.2*			*23.0-120*	*08/06/2024 18:55*	WG2336839
(S) Nitrobenzene-d5	*72.6*			*14.0-149*	*08/06/2024 18:55*	WG2336839
(S) 2-Fluorobiphenyl	*71.4*			*34.0-125*	*08/06/2024 18:55*	WG2336839

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 23:22	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 19:38	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*87.2*			*77.0-120*	*08/05/2024 19:38*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 16:21	WG2336135
Toluene	ND		0.00500	1	08/04/2024 16:21	WG2336135
Ethylbenzene	ND		0.00500	1	08/04/2024 16:21	WG2336135
Xylenes, Total	ND		0.0100	1	08/04/2024 16:21	WG2336135
1,2,4-Trimethylbenzene	0.00924		0.00500	1	08/04/2024 16:21	WG2336135
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 16:21	WG2336135
(S) Toluene-d8	*103*			*75.0-131*	*08/04/2024 16:21*	WG2336135
(S) 4-Bromofluorobenzene	*103*			*67.0-138*	*08/04/2024 16:21*	WG2336135
(S) 1,2-Dichloroethane-d4	*93.6*			*70.0-130*	*08/04/2024 16:21*	WG2336135

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 09:22	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 09:22	WG2336843
(S) o-Terphenyl	*40.2*			*18.0-148*	*08/07/2024 09:22*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Anthracene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Chrysene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Fluoranthene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Fluorene	ND		0.00500	1	08/06/2024 19:13	WG2336839
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 19:13	WG2336839
1-Methylnaphthalene	0.0273		0.00500	1	08/06/2024 19:13	WG2336839
2-Methylnaphthalene	0.0431		0.00500	1	08/06/2024 19:13	WG2336839
Naphthalene	0.123		0.00408	1	08/06/2024 19:13	WG2336839
Pyrene	ND		0.00500	1	08/06/2024 19:13	WG2336839
(S) p-Terphenyl-d14	*55.2*			*23.0-120*	*08/06/2024 19:13*	WG2336839
(S) Nitrobenzene-d5	*58.2*			*14.0-149*	*08/06/2024 19:13*	WG2336839
(S) 2-Fluorobiphenyl	*57.3*			*34.0-125*	*08/06/2024 19:13*	WG2336839

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 23:28	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 19:57	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*83.3*			*77.0-120*	*08/05/2024 19:57*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 16:41	WG2336135
Toluene	ND		0.00500	1	08/04/2024 16:41	WG2336135
Ethylbenzene	ND		0.00500	1	08/04/2024 16:41	WG2336135
Xylenes, Total	ND		0.0100	1	08/04/2024 16:41	WG2336135
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 16:41	WG2336135
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 16:41	WG2336135
(S) Toluene-d8	*106*			*75.0-131*	*08/04/2024 16:41*	WG2336135
(S) 4-Bromofluorobenzene	*106*			*67.0-138*	*08/04/2024 16:41*	WG2336135
(S) 1,2-Dichloroethane-d4	*91.5*			*70.0-130*	*08/04/2024 16:41*	WG2336135

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 12:15	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 12:15	WG2336843
(S) o-Terphenyl	*38.0*			*18.0-148*	*08/07/2024 12:15*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Anthracene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Chrysene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Fluoranthene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Fluorene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 19:31	WG2336839
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:31	WG2336839
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:31	WG2336839
Naphthalene	ND		0.00408	1	08/06/2024 19:31	WG2336839
Pyrene	ND		0.00500	1	08/06/2024 19:31	WG2336839
(S) p-Terphenyl-d14	*60.4*			*23.0-120*	*08/06/2024 19:31*	WG2336839
(S) Nitrobenzene-d5	*73.9*			*14.0-149*	*08/06/2024 19:31*	WG2336839
(S) 2-Fluorobiphenyl	*64.0*			*34.0-125*	*08/06/2024 19:31*	WG2336839

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.300	1	08/12/2024 23:34	WG2335486

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.500	1	08/05/2024 20:16	WG2336217
(S) a,a,a-Trifluorotoluene(FID)	*82.5*			*77.0-120*	*08/05/2024 20:16*	WG2336217

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	1	08/04/2024 17:00	WG2336135
Toluene	ND		0.00500	1	08/04/2024 17:00	WG2336135
Ethylbenzene	ND		0.00500	1	08/04/2024 17:00	WG2336135
Xylenes, Total	ND		0.0100	1	08/04/2024 17:00	WG2336135
1,2,4-Trimethylbenzene	ND		0.00500	1	08/04/2024 17:00	WG2336135
1,3,5-Trimethylbenzene	ND		0.00500	1	08/04/2024 17:00	WG2336135
(S) Toluene-d8	*103*			*75.0-131*	*08/04/2024 17:00*	WG2336135
(S) 4-Bromofluorobenzene	*103*			*67.0-138*	*08/04/2024 17:00*	WG2336135
(S) 1,2-Dichloroethane-d4	*88.6*			*70.0-130*	*08/04/2024 17:00*	WG2336135

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		50.0	1	08/07/2024 07:57	WG2336843
C28-C36 Motor Oil Range	ND		50.0	1	08/07/2024 07:57	WG2336843
(S) o-Terphenyl	*35.5*			*18.0-148*	*08/07/2024 07:57*	WG2336843

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

Analyte	Result mg/kg	Qualifier	RL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Anthracene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Benzo(a)anthracene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Benzo(b)fluoranthene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Benzo(k)fluoranthene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Benzo(a)pyrene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Chrysene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Dibenz(a,h)anthracene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Fluoranthene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Fluorene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Indeno(1,2,3-cd)pyrene	ND		0.00181	1	08/06/2024 19:48	WG2336839
1-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:48	WG2336839
2-Methylnaphthalene	ND		0.00500	1	08/06/2024 19:48	WG2336839
Naphthalene	ND		0.00408	1	08/06/2024 19:48	WG2336839
Pyrene	ND		0.00500	1	08/06/2024 19:48	WG2336839
(S) p-Terphenyl-d14	*59.4*			*23.0-120*	*08/06/2024 19:48*	WG2336839
(S) Nitrobenzene-d5	*65.0*			*14.0-149*	*08/06/2024 19:48*	WG2336839
(S) 2-Fluorobiphenyl	*63.6*			*34.0-125*	*08/06/2024 19:48*	WG2336839

Method Blank (MB)

(MB) R4105863-1 08/12/24 22:36

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

L1762157-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1762157-02 08/12/24 22:57 • (DUP) R4105863-3 08/12/24 23:03

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

L1762672-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1762672-02 08/13/24 03:03 • (DUP) R4105863-8 08/13/24 03:09

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

Laboratory Control Sample (LCS)

(LCS) R4105863-2 08/12/24 22:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.1	101	80.0-120	

L1762630-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762630-06 08/13/24 00:11 • (MS) R4105863-4 08/13/24 00:17 • (MSD) R4105863-5 08/13/24 00:24

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	ND	20.6	20.3	103	101	1	75.0-125			1.53	20

L1762630-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1762630-06 08/13/24 00:11 • (MS) R4105863-6 08/13/24 01:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	641	ND	568	88.6	50	75.0-125	

Method Blank (MB)

(MB) R4102944-3 08/05/24 12:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	ND		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*86.1*			*77.0-120*

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

(LCS) R4102944-1 08/05/24 11:43 • (LCSD) R4102944-2 08/05/24 12:02

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 %
TPH (GC/FID) Low Fraction	5.00	4.35	4.47	87.0	89.4	72.0-127			2.72	20
(S) a,a,a-Trifluorotoluene(FID)				*95.0*	*95.0*	*77.0-120*				

Method Blank (MB)

(MB) R4103018-3 08/04/24 00:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	ND		0.000467	0.00100
Toluene	ND		0.00130	0.00500
Ethylbenzene	ND		0.000737	0.00250
Xylenes, Total	ND		0.000880	0.00650
1,2,4-Trimethylbenzene	ND		0.00158	0.00500
1,3,5-Trimethylbenzene	ND		0.00200	0.00500
(S) Toluene-d8	*106*			*75.0-131*
(S) 4-Bromofluorobenzene	*106*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*

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

(LCS) R4103018-1 08/03/24 23:03 • (LCSD) R4103018-2 08/03/24 23:22

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	0.100	0.103	80.0	82.4	70.0-123			2.96	20
Toluene	0.125	0.102	0.103	81.6	82.4	75.0-121			0.976	20
Ethylbenzene	0.125	0.104	0.111	83.2	88.8	74.0-126			6.51	20
Xylenes, Total	0.375	0.313	0.331	83.5	88.3	72.0-127			5.59	20
1,2,4-Trimethylbenzene	0.125	0.0972	0.102	77.8	81.6	70.0-126			4.82	20
1,3,5-Trimethylbenzene	0.125	0.0989	0.102	79.1	81.6	73.0-127			3.09	20
(S) Toluene-d8				*103*	*101*	*75.0-131*				
(S) 4-Bromofluorobenzene				*106*	*109*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*103*	*109*	*70.0-130*				

Method Blank (MB)

(MB) R4103295-3 08/04/24 14:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	ND		0.000467	0.00100
Toluene	ND		0.00130	0.00500
Ethylbenzene	ND		0.000737	0.00250
Xylenes, Total	ND		0.000880	0.00650
1,2,4-Trimethylbenzene	ND		0.00158	0.00500
1,3,5-Trimethylbenzene	ND		0.00200	0.00500
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*100*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*88.8*			*70.0-130*

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

(LCS) R4103295-1 08/04/24 13:00 • (LCSD) R4103295-2 08/04/24 13:19

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	0.128	0.129	102	103	70.0-123			0.778	20
Toluene	0.125	0.120	0.128	96.0	102	75.0-121			6.45	20
Ethylbenzene	0.125	0.121	0.129	96.8	103	74.0-126			6.40	20
Xylenes, Total	0.375	0.404	0.436	108	116	72.0-127			7.62	20
1,2,4-Trimethylbenzene	0.125	0.126	0.138	101	110	70.0-126			9.09	20
1,3,5-Trimethylbenzene	0.125	0.120	0.128	96.0	102	73.0-127			6.45	20
(S) Toluene-d8				*101*	*104*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*101*	*97.0*	*70.0-130*				

Method Blank (MB)

(MB) R4103720-1 08/07/24 06:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	ND		1.61	4.00
C28-C36 Motor Oil Range	ND		0.274	4.00
(S) o-Terphenyl	*43.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4103720-2 08/07/24 07:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	30.7	61.4	50.0-150	
(S) o-Terphenyl			*38.9*	*18.0-148*	

L1762672-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762672-01 08/07/24 11:17 • (MS) R4103720-3 08/07/24 11:32 • (MSD) R4103720-4 08/07/24 11:46

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	50.0	ND	73.0	73.4	80.2	81.0	1	50.0-150			0.546	20
(S) o-Terphenyl					*44.0*	*44.7*		*18.0-148*				

Method Blank (MB)

(MB) R4103548-2 08/06/24 12:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	ND		0.00209	0.00600
Anthracene	ND		0.00230	0.00600
Benzo(a)anthracene	ND		0.00173	0.00600
Benzo(b)fluoranthene	ND		0.00153	0.00600
Benzo(k)fluoranthene	ND		0.00215	0.00600
Benzo(a)pyrene	ND		0.00179	0.00600
Chrysene	ND		0.00232	0.00600
Dibenz(a,h)anthracene	ND		0.00172	0.00600
Fluoranthene	ND		0.00227	0.00600
Fluorene	ND		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	ND		0.00181	0.00600
1-Methylnaphthalene	ND		0.00449	0.0200
2-Methylnaphthalene	ND		0.00427	0.0200
Naphthalene	ND		0.00408	0.0200
Pyrene	ND		0.00200	0.00600
(S) p-Terphenyl-d14	*78.4*			*23.0-120*
(S) Nitrobenzene-d5	*73.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*86.5*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4103548-1 08/06/24 12:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0611	76.4	50.0-120	
Anthracene	0.0800	0.0618	77.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0597	74.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0604	75.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0597	74.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0560	70.0	42.0-120	
Chrysene	0.0800	0.0674	84.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0604	75.5	47.0-125	
Fluoranthene	0.0800	0.0667	83.4	49.0-129	
Fluorene	0.0800	0.0650	81.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0559	69.9	46.0-125	
1-Methylnaphthalene	0.0800	0.0644	80.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0610	76.3	50.0-120	
Naphthalene	0.0800	0.0637	79.6	50.0-120	
Pyrene	0.0800	0.0657	82.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4103548-1 08/06/24 12:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*77.7*	*23.0-120*	
(S) Nitrobenzene-d5			*74.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*84.9*	*34.0-125*	

L1762147-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762147-08 08/06/24 15:17 • (MS) R4103548-3 08/06/24 15:34 • (MSD) R4103548-4 08/06/24 15:52

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	0.0784	ND	0.0595	0.0549	75.9	70.0	1	14.0-127			8.04	27
Anthracene	0.0784	ND	0.0596	0.0532	76.0	67.9	1	10.0-145			11.3	30
Benzo(a)anthracene	0.0784	ND	0.0585	0.0534	74.6	68.1	1	10.0-139			9.12	30
Benzo(b)fluoranthene	0.0784	ND	0.0600	0.0529	76.5	67.5	1	10.0-140			12.6	36
Benzo(k)fluoranthene	0.0784	ND	0.0601	0.0544	76.7	69.4	1	10.0-137			9.96	31
Benzo(a)pyrene	0.0784	ND	0.0579	0.0522	73.9	66.6	1	10.0-141			10.4	31
Chrysene	0.0784	ND	0.0682	0.0607	87.0	77.4	1	10.0-145			11.6	30
Dibenz(a,h)anthracene	0.0784	ND	0.0601	0.0552	76.7	70.4	1	10.0-132			8.50	31
Fluoranthene	0.0784	ND	0.0663	0.0610	84.6	77.8	1	10.0-153			8.33	33
Fluorene	0.0784	ND	0.0639	0.0585	81.5	74.6	1	11.0-130			8.82	29
Indeno(1,2,3-cd)pyrene	0.0784	ND	0.0564	0.0506	71.9	64.5	1	10.0-137			10.8	32
1-Methylnaphthalene	0.0784	ND	0.0634	0.0577	80.9	73.6	1	10.0-142			9.41	28
2-Methylnaphthalene	0.0784	ND	0.0599	0.0555	76.4	70.8	1	10.0-137			7.63	28
Naphthalene	0.0784	ND	0.0623	0.0574	79.5	73.2	1	10.0-135			8.19	27
Pyrene	0.0784	ND	0.0656	0.0590	83.7	75.3	1	10.0-148			10.6	35
(S) p-Terphenyl-d14					*76.1*	*67.3*		*23.0-120*				
(S) Nitrobenzene-d5					*74.2*	*68.9*		*14.0-149*				
(S) 2-Fluorobiphenyl					*85.1*	*78.0*		*34.0-125*				

Method Blank (MB)

(MB) R4103553-2 08/06/24 17:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	ND		0.00209	0.00600
Anthracene	ND		0.00230	0.00600
Benzo(a)anthracene	ND		0.00173	0.00600
Benzo(b)fluoranthene	ND		0.00153	0.00600
Benzo(k)fluoranthene	ND		0.00215	0.00600
Benzo(a)pyrene	ND		0.00179	0.00600
Chrysene	ND		0.00232	0.00600
Dibenz(a,h)anthracene	ND		0.00172	0.00600
Fluoranthene	ND		0.00227	0.00600
Fluorene	ND		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	ND		0.00181	0.00600
1-Methylnaphthalene	ND		0.00449	0.0200
2-Methylnaphthalene	ND		0.00427	0.0200
Naphthalene	ND		0.00408	0.0200
Pyrene	ND		0.00200	0.00600
(S) p-Terphenyl-d14	*77.6*			*23.0-120*
(S) Nitrobenzene-d5	*80.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*79.7*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4103553-1 08/06/24 17:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0599	74.9	50.0-120	
Anthracene	0.0800	0.0622	77.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0637	79.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0629	78.6	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0613	76.6	49.0-125	
Benzo(a)pyrene	0.0800	0.0576	72.0	42.0-120	
Chrysene	0.0800	0.0633	79.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0688	86.0	47.0-125	
Fluoranthene	0.0800	0.0661	82.6	49.0-129	
Fluorene	0.0800	0.0660	82.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0661	82.6	46.0-125	
1-Methylnaphthalene	0.0800	0.0658	82.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0636	79.5	50.0-120	
Naphthalene	0.0800	0.0613	76.6	50.0-120	
Pyrene	0.0800	0.0599	74.9	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4103553-1 08/06/24 17:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*74.6*	*23.0-120*	
(S) Nitrobenzene-d5			*78.8*	*14.0-149*	
(S) 2-Fluorobiphenyl			*76.1*	*34.0-125*	

L1762672-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1762672-01 08/06/24 23:38 • (MS) R4103553-3 08/06/24 23:56 • (MSD) R4103553-4 08/07/24 00:14

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	0.0780	ND	0.0563	0.0542	72.2	69.5	1	14.0-127			3.80	27
Anthracene	0.0780	ND	0.0574	0.0558	73.6	71.5	1	10.0-145			2.83	30
Benzo(a)anthracene	0.0780	ND	0.0610	0.0591	78.2	75.8	1	10.0-139			3.16	30
Benzo(b)fluoranthene	0.0780	ND	0.0591	0.0582	75.8	74.6	1	10.0-140			1.53	36
Benzo(k)fluoranthene	0.0780	ND	0.0566	0.0548	72.6	70.3	1	10.0-137			3.23	31
Benzo(a)pyrene	0.0780	ND	0.0588	0.0575	75.4	73.7	1	10.0-141			2.24	31
Chrysene	0.0780	ND	0.0641	0.0612	82.2	78.5	1	10.0-145			4.63	30
Dibenz(a,h)anthracene	0.0780	ND	0.0647	0.0627	82.9	80.4	1	10.0-132			3.14	31
Fluoranthene	0.0780	ND	0.0629	0.0610	80.6	78.2	1	10.0-153			3.07	33
Fluorene	0.0780	ND	0.0636	0.0622	81.5	79.7	1	11.0-130			2.23	29
Indeno(1,2,3-cd)pyrene	0.0780	ND	0.0630	0.0614	80.8	78.7	1	10.0-137			2.57	32
1-Methylnaphthalene	0.0780	ND	0.0637	0.0604	81.7	77.4	1	10.0-142			5.32	28
2-Methylnaphthalene	0.0780	ND	0.0633	0.0602	75.6	71.7	1	10.0-137			5.02	28
Naphthalene	0.0780	ND	0.0585	0.0564	75.0	72.3	1	10.0-135			3.66	27
Pyrene	0.0780	ND	0.0578	0.0557	74.1	71.4	1	10.0-148			3.70	35
(S) p-Terphenyl-d14					*73.3*	*69.0*		*23.0-120*				
(S) Nitrobenzene-d5					*76.0*	*73.8*		*14.0-149*				
(S) 2-Fluorobiphenyl					*75.5*	*71.8*		*34.0-125*				

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.
ND	Not detected at the Reporting Limit (or MDL where applicable).
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.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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 [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	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	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	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 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] 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.

Company Name/Address:
Civitas/Tasman - CO
6855 W. 118th Ave
Broomfield, CO 80020

Billing Information:
Accounts Payable
650 Southgate Dr.
Windsor, CO 80550

Pres Chk

Project Manager:
Sam Vogt / Jacob Evans

Email: **svogt@tasman-geo.com; jevans@civitasresources.com**

Project Name: Shaffer Newman 24-13

Please Circle: PT (MT) CT ET

Phone: **610-405-9078**

Lab Project #:

AFE# or C/C: 24009

Collected by (print): Angela Kirylo

Site/Facility ID #:

Billing Code #: 8523.198

Collected by (signature): Angela Kirylo

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___Same Day ___Five Day
___Next Day ___5 Day (Rad Only)
___Two Day ___10 Day (Rad Only)
___Three Day

Quote #

Date Results Needed: STD

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	# of Containers	Full TABLE915 8ozClr-NoPres	Background TABLE915 8ozClr-NoPres	V8260 (GW TABLE915) 40mL Amb-HCl	Chloride, Sulfate 125mL HDPE-NoPres	TDS 1L-HDPE-NoPres	Remarks	Sample # (lab only)
WH-B01@5'	Grab	SS	5'	07/29/24	0930	2	X						-01
FL-B01@3'	↓	↓	3'	↓	0948	↓	↓						-02
FL-B02@4'	↓	↓	4'	↓	0942	↓	↓						-03
SP-CS01	comp	↓	—	↓	0944	↓	↓						-04
FL-B03@4'	Grab	↓	4'	↓	1100	↓	↓						-05
FL-B04@4'	↓	↓	4'	↓	1102	↓	↓						-06
SP-CS02	comp	↓	—	↓	1102	↓	↓						-07

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard- terms.pdf

E182
L7162157

Acctnum: CIVTASBCO
Template: T250702
Prelogin: P1068185
PM: 824 - Chris Ward
PB:
Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
pH, EC, SAR by saturated paste preparation method
Boron by hot water soluble preparation method
Table 915-1 Metals - As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn, Cr VI

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Angela Kirylo	07/29/24	1545	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	7/30/24	1000	FedEx
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 14

Date: 7/31/24 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

LI762157

Tracking Numbers	Temperature
7315319413[illegible]0	0.2+0.3=1.0
7315 3194 1359	3.6+0.3=3.9

Name

Date

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

August 12, 2024

Client Services
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1762157 WG2334055
Pace Project No.: 10702617

Dear Client Services:

Enclosed are the analytical results for sample(s) received by the laboratory on August 02, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Yeng Ozawa
yeng.ozawa@pacelabs.com
(612)607-1700
Project Manager

Enclosures

cc: Jimmy Huckaba, Pace Analytical National Center for Testing & Innovation

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: L1762157 WG2334055
Pace Project No.: 10702617

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10702617001	**WH-B01 @ 5**	Solid	07/29/24 09:30	08/02/24 08:50
10702617002	**FL-B01 @ 3**	Solid	07/29/24 09:40	08/02/24 08:50
10702617003	**FL-B02 @ 4**	Solid	07/29/24 09:42	08/02/24 08:50
10702617004	**SP-CS01**	Solid	07/29/24 09:44	08/02/24 08:50
10702617005	**FL-B03 @ 4**	Solid	07/29/24 11:00	08/02/24 08:50
10702617006	**FL-B04 @ 4**	Solid	07/29/24 11:02	08/02/24 08:50
10702617007	**SP-CS02**	Solid	07/29/24 11:02	08/02/24 08:50

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: L1762157 WG2334055
Pace Project No.: 10702617

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10702617001	**WH-B01 @ 5**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617002	**FL-B01 @ 3**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617003	**FL-B02 @ 4**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617004	**SP-CS01**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617005	**FL-B03 @ 4**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617006	**FL-B04 @ 4**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M
10702617007	**SP-CS02**	WREP 125, S-7.10	DM	1	PASI-M
		WREP 125 S-1.6	DM	4	PASI-M
		EPA 6020B	DJM	9	PASI-M
		WREP 125 S-1.20	SMB	1	PASI-M
		WREP 125 S-1.10	MER	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: WH-B01 @ 5 **Lab ID: 10702617001** Collected: 07/29/24 09:30 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:13	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**3.2**	meq/L	0.25	10		08/08/24 14:36	7440-70-2	N2
Magnesium saturated paste	**1.5**	meq/L	0.41	10		08/08/24 14:36	7439-95-4	N2
Sodium Adsorption Ratio	**2.5**			10		08/08/24 14:36		N2
Sodium saturated paste	**3.9**	meq/L	0.44	10		08/08/24 14:36	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.6**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:00	7440-38-2	
Barium	**102**	mg/kg	0.28	20	08/06/24 09:01	08/06/24 15:00	7440-39-3	
Cadmium	**0.12**	mg/kg	0.075	20	08/06/24 09:01	08/06/24 15:00	7440-43-9	
Copper	**11.1**	mg/kg	0.93	20	08/06/24 09:01	08/06/24 15:00	7440-50-8	
Lead	**10.3**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:00	7439-92-1	
Nickel	**10.2**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:00	7440-02-0	
Selenium	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:00	7782-49-2	
Silver	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:00	7440-22-4	
Zinc	**33.3**	mg/kg	4.7	20	08/06/24 09:01	08/06/24 15:00	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**842**	umhos/cm	5.0	1		08/08/24 14:58		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.13**	Std. Units	0.100	1		08/08/24 17:12		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: FL-B01 @ 3 **Lab ID: 10702617002** Collected: 07/29/24 09:40 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:14	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**2.8**	meq/L	0.25	10		08/08/24 14:37	7440-70-2	N2
Magnesium saturated paste	**1.3**	meq/L	0.41	10		08/08/24 14:37	7439-95-4	N2
Sodium Adsorption Ratio	**0.85**			10		08/08/24 14:37		N2
Sodium saturated paste	**1.2**	meq/L	0.44	10		08/08/24 14:37	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.0**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:10	7440-38-2	
Barium	**116**	mg/kg	0.30	20	08/06/24 09:01	08/06/24 15:10	7440-39-3	
Cadmium	**0.21**	mg/kg	0.079	20	08/06/24 09:01	08/06/24 15:10	7440-43-9	
Copper	**12.3**	mg/kg	0.99	20	08/06/24 09:01	08/06/24 15:10	7440-50-8	
Lead	**13.0**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:10	7439-92-1	
Nickel	**10.2**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:10	7440-02-0	
Selenium	ND	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:10	7782-49-2	
Silver	ND	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:10	7440-22-4	
Zinc	**34.1**	mg/kg	5.0	20	08/06/24 09:01	08/06/24 15:10	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**520**	umhos/cm	5.0	1		08/08/24 14:59		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.04**	Std. Units	0.100	1		08/08/24 17:13		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: FL-B02 @ 4 **Lab ID: 10702617003** Collected: 07/29/24 09:42 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:16	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**3.5**	meq/L	0.25	10		08/08/24 14:39	7440-70-2	N2
Magnesium saturated paste	**1.4**	meq/L	0.41	10		08/08/24 14:39	7439-95-4	N2
Sodium Adsorption Ratio	**0.30**			10		08/08/24 14:39		N2
Sodium saturated paste	**0.47**	meq/L	0.44	10		08/08/24 14:39	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.6**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:13	7440-38-2	
Barium	**110**	mg/kg	0.28	20	08/06/24 09:01	08/06/24 15:13	7440-39-3	
Cadmium	**0.11**	mg/kg	0.075	20	08/06/24 09:01	08/06/24 15:13	7440-43-9	
Copper	**12.7**	mg/kg	0.94	20	08/06/24 09:01	08/06/24 15:13	7440-50-8	
Lead	**35.5**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:13	7439-92-1	
Nickel	**9.8**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:13	7440-02-0	
Selenium	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:13	7782-49-2	
Silver	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:13	7440-22-4	
Zinc	**32.9**	mg/kg	4.7	20	08/06/24 09:01	08/06/24 15:13	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**425**	umhos/cm	5.0	1		08/08/24 15:00		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.36**	Std. Units	0.100	1		08/08/24 17:14		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: SP-CS01 **Lab ID: 10702617004** Collected: 07/29/24 09:44 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:18	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**2.2**	meq/L	0.25	10		08/08/24 14:41	7440-70-2	N2
Magnesium saturated paste	**1.1**	meq/L	0.41	10		08/08/24 14:41	7439-95-4	N2
Sodium Adsorption Ratio	**0.61**			10		08/08/24 14:41		N2
Sodium saturated paste	**0.78**	meq/L	0.44	10		08/08/24 14:41	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.5**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:16	7440-38-2	
Barium	**77.0**	mg/kg	0.28	20	08/06/24 09:01	08/06/24 15:16	7440-39-3	
Cadmium	ND	mg/kg	0.074	20	08/06/24 09:01	08/06/24 15:16	7440-43-9	
Copper	**9.4**	mg/kg	0.93	20	08/06/24 09:01	08/06/24 15:16	7440-50-8	
Lead	**9.1**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:16	7439-92-1	
Nickel	**10.1**	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:16	7440-02-0	
Selenium	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:16	7782-49-2	
Silver	ND	mg/kg	0.47	20	08/06/24 09:01	08/06/24 15:16	7440-22-4	
Zinc	**29.9**	mg/kg	4.7	20	08/06/24 09:01	08/06/24 15:16	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**450**	umhos/cm	5.0	1		08/08/24 15:01		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**8.15**	Std. Units	0.100	1		08/08/24 17:15		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: FL-B03 @ 4 **Lab ID: 10702617005** Collected: 07/29/24 11:00 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	**0.41**	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:19	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**3.8**	meq/L	0.25	10		08/08/24 14:42	7440-70-2	N2
Magnesium saturated paste	**1.8**	meq/L	0.41	10		08/08/24 14:42	7439-95-4	N2
Sodium Adsorption Ratio	**0.56**			10		08/08/24 14:42		N2
Sodium saturated paste	**0.94**	meq/L	0.44	10		08/08/24 14:42	7440-23-5	N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.9**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:19	7440-38-2	
Barium	**75.0**	mg/kg	0.30	20	08/06/24 09:01	08/06/24 15:19	7440-39-3	
Cadmium	**0.12**	mg/kg	0.079	20	08/06/24 09:01	08/06/24 15:19	7440-43-9	
Copper	**9.9**	mg/kg	0.99	20	08/06/24 09:01	08/06/24 15:19	7440-50-8	
Lead	**7.9**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:19	7439-92-1	
Nickel	**10.8**	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:19	7440-02-0	
Selenium	ND	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:19	7782-49-2	
Silver	ND	mg/kg	0.50	20	08/06/24 09:01	08/06/24 15:19	7440-22-4	
Zinc	**32.2**	mg/kg	5.0	20	08/06/24 09:01	08/06/24 15:19	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**681**	umhos/cm	5.0	1		08/08/24 15:02		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.65**	Std. Units	0.100	1		08/08/24 17:16		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: FL-B04 @ 4 **Lab ID: 10702617006** Collected: 07/29/24 11:02 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:21	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**2.3**	meq/L	0.25	10		08/08/24 14:44	7440-70-2	N2
Magnesium saturated paste	**1.0**	meq/L	0.41	10		08/08/24 14:44	7439-95-4	N2
Sodium Adsorption Ratio	**0.27**			10		08/08/24 14:44		N2
Sodium saturated paste	ND	meq/L	0.44	10		08/08/24 14:44	7440-23-5	1M,N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.3**	mg/kg	0.49	20	08/06/24 09:01	08/06/24 15:22	7440-38-2	
Barium	**81.3**	mg/kg	0.29	20	08/06/24 09:01	08/06/24 15:22	7440-39-3	
Cadmium	**0.25**	mg/kg	0.079	20	08/06/24 09:01	08/06/24 15:22	7440-43-9	
Copper	**10.7**	mg/kg	0.98	20	08/06/24 09:01	08/06/24 15:22	7440-50-8	
Lead	**8.4**	mg/kg	0.49	20	08/06/24 09:01	08/06/24 15:22	7439-92-1	
Nickel	**10.1**	mg/kg	0.49	20	08/06/24 09:01	08/06/24 15:22	7440-02-0	
Selenium	ND	mg/kg	0.49	20	08/06/24 09:01	08/06/24 15:22	7782-49-2	
Silver	ND	mg/kg	0.49	20	08/06/24 09:01	08/06/24 15:22	7440-22-4	
Zinc	**33.7**	mg/kg	4.9	20	08/06/24 09:01	08/06/24 15:22	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**392**	umhos/cm	5.0	1		08/08/24 15:03		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.43**	Std. Units	0.100	1		08/08/24 17:17		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1762157 WG2334055
Pace Project No.: 10702617

Sample: SP-CS02 **Lab ID: 10702617007** Collected: 07/29/24 11:02 Received: 08/02/24 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Hot Water Soluble Boron	Analytical Method: WREP 125, S-7.10 Preparation Method: N/A Pace Analytical Services - Minneapolis							
Boron	ND	mg/kg	0.30	1	08/08/24 09:55	08/12/24 11:23	7440-42-8	N2
Sodium Adsorption Ratio, SAR	Analytical Method: WREP 125 S-1.6 Pace Analytical Services - Minneapolis							
Calcium saturated paste	**2.1**	meq/L	0.25	10		08/08/24 14:49	7440-70-2	N2
Magnesium saturated paste	**1.4**	meq/L	0.41	10		08/08/24 14:49	7439-95-4	N2
Sodium Adsorption Ratio	**0.29**			10		08/08/24 14:49		N2
Sodium saturated paste	ND	meq/L	0.44	10		08/08/24 14:49	7440-23-5	1M,N2
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**2.3**	mg/kg	0.48	20	08/06/24 09:01	08/06/24 15:26	7440-38-2	
Barium	**60.2**	mg/kg	0.29	20	08/06/24 09:01	08/06/24 15:26	7440-39-3	
Cadmium	**0.25**	mg/kg	0.077	20	08/06/24 09:01	08/06/24 15:26	7440-43-9	
Copper	**8.6**	mg/kg	0.96	20	08/06/24 09:01	08/06/24 15:26	7440-50-8	
Lead	**7.0**	mg/kg	0.48	20	08/06/24 09:01	08/06/24 15:26	7439-92-1	
Nickel	**8.4**	mg/kg	0.48	20	08/06/24 09:01	08/06/24 15:26	7440-02-0	
Selenium	ND	mg/kg	0.48	20	08/06/24 09:01	08/06/24 15:26	7782-49-2	
Silver	ND	mg/kg	0.48	20	08/06/24 09:01	08/06/24 15:26	7440-22-4	
Zinc	**29.1**	mg/kg	4.8	20	08/06/24 09:01	08/06/24 15:26	7440-66-6	
Saturated Paste Elect. Cond.	Analytical Method: WREP 125 S-1.20 Pace Analytical Services - Minneapolis							
Specific Conductance	**342**	umhos/cm	5.0	1		08/08/24 15:03		N2
Saturated Paste pH	Analytical Method: WREP 125 S-1.10 Pace Analytical Services - Minneapolis							
pH at 25 Degrees C	**7.12**	Std. Units	0.100	1		08/08/24 17:18		N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: L1762157 WG2334055
Pace Project No.: 10702617

QC Batch: 961567
QC Batch Method: WREP 125 S-1.6
Analysis Method: WREP 125 S-1.6
Analysis Description: Saturated Paste SAR
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

METHOD BLANK: 5025895 Matrix: Solid
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium saturated paste	meq/L	ND	0.025	08/08/24 14:29	N2
Magnesium saturated paste	meq/L	ND	0.041	08/08/24 14:29	N2
Sodium Adsorption Ratio		0.013		08/08/24 14:29	N2
Sodium saturated paste	meq/L	ND	0.044	08/08/24 14:29	N2

LABORATORY CONTROL SAMPLE & LCSD: 5025896 5025897

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Calcium saturated paste	meq/L	1	0.93	0.94	93	94	80-120	1	20	N2
Magnesium saturated paste	meq/L	1.6	1.6	1.6	95	96	80-120	1	20	N2
Sodium Adsorption Ratio			0.74	0.74				0	20	N2
Sodium saturated paste	meq/L	0.87	0.82	0.83	95	95	80-120	1	20	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: L1762157 WG2334055
Pace Project No.: 10702617

QC Batch: 960441
QC Batch Method: EPA 3050B
Analysis Method: EPA 6020B
Analysis Description: 6020B Solids UPD5
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

METHOD BLANK: 5021319 Matrix: Solid
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.50	08/06/24 14:32	
Barium	mg/kg	ND	0.30	08/06/24 14:32	
Cadmium	mg/kg	ND	0.079	08/06/24 14:32	
Copper	mg/kg	ND	0.99	08/06/24 14:32	
Lead	mg/kg	ND	0.50	08/06/24 14:32	
Nickel	mg/kg	ND	0.50	08/06/24 14:32	
Selenium	mg/kg	ND	0.50	08/06/24 14:32	
Silver	mg/kg	ND	0.50	08/06/24 14:32	
Zinc	mg/kg	ND	5.0	08/06/24 14:32	

LABORATORY CONTROL SAMPLE: 5021320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48.3	52.7	109	80-120	
Barium	mg/kg	48.3	51.4	106	80-120	
Cadmium	mg/kg	48.3	52.6	109	80-120	
Copper	mg/kg	48.3	56.1	116	80-120	
Lead	mg/kg	48.3	53.5	111	80-120	
Nickel	mg/kg	48.3	55.8	115	80-120	
Selenium	mg/kg	48.3	52.3	108	80-120	
Silver	mg/kg	24.2	26.2	108	80-120	
Zinc	mg/kg	48.3	54.3	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5021321 5021322

Parameter	Units	10702508001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	4.2	47.5	49.2	52.9	53.9	103	101	75-125	2	20	
Barium	mg/kg	236	47.5	49.2	280	269	92	66	75-125	4	20	P6
Cadmium	mg/kg	0.22	47.5	49.2	48.8	50.8	102	103	75-125	4	20	
Copper	mg/kg	14.5	47.5	49.2	65.1	65.8	107	104	75-125	1	20	
Lead	mg/kg	15.8	47.5	49.2	63.2	65.6	100	101	75-125	4	20	
Nickel	mg/kg	13.0	47.5	49.2	65.2	65.8	110	107	75-125	1	20	
Selenium	mg/kg	ND	47.5	49.2	47.6	50.6	100	102	75-125	6	20	
Silver	mg/kg	ND	23.7	24.6	24.6	25.4	104	103	75-125	3	20	
Zinc	mg/kg	55.6	47.5	49.2	106	105	106	101	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: L1762157 WG2334055
Pace Project No.: 10702617

QC Batch: 960825
QC Batch Method: N/A
Analysis Method: WREP 125, S-7.10
Analysis Description: Hot Water Soluble Boron
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

METHOD BLANK: 5022627 Matrix: Solid
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/kg	ND	0.30	08/12/24 11:00	N2

LABORATORY CONTROL SAMPLE: 5022628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/kg	2	2.0	101	80-120	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5022629 5022630

Parameter	Units	10702615001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/kg	ND	2	2	1.8	1.8	76	73	75-125	3	20	M1,N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: L1762157 WG2334055
Pace Project No.: 10702617

QC Batch: 961535 | Analysis Method: WREP 125 S-1.20
QC Batch Method: WREP 125 S-1.20 | Analysis Description: Electrical Conductivity Paste
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

METHOD BLANK: 5025737 Matrix: Solid
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	5.0	08/08/24 14:55	N2

LABORATORY CONTROL SAMPLE: 5025738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	946	95	90-110	N2

SAMPLE DUPLICATE: 5025739

Parameter	Units	10702615001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	2040	2030	1	20	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: L1762157 WG2334055
Pace Project No.: 10702617

QC Batch: 961531
QC Batch Method: WREP 125 S-1.10
Analysis Method: WREP 125 S-1.10
Analysis Description: Saturated Paste pH
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10702617001, 10702617002, 10702617003, 10702617004, 10702617005, 10702617006, 10702617007

SAMPLE DUPLICATE: 5025722

Parameter	Units	10702615001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.42	7.48	0.805	3	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: L1762157 WG2334055
Pace Project No.: 10702617

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 961567

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1M	Sample was diluted due to limited sample volume.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1762157 WG2334055
Pace Project No.: 10702617

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10702617001	**WH-B01 @ 5**	N/A	960825	WREP 125, S-7.10	961991
10702617002	**FL-B01 @ 3**	N/A	960825	WREP 125, S-7.10	961991
10702617003	**FL-B02 @ 4**	N/A	960825	WREP 125, S-7.10	961991
10702617004	**SP-CS01**	N/A	960825	WREP 125, S-7.10	961991
10702617005	**FL-B03 @ 4**	N/A	960825	WREP 125, S-7.10	961991
10702617006	**FL-B04 @ 4**	N/A	960825	WREP 125, S-7.10	961991
10702617007	**SP-CS02**	N/A	960825	WREP 125, S-7.10	961991
10702617001	**WH-B01 @ 5**	WREP 125 S-1.6	961567		
10702617002	**FL-B01 @ 3**	WREP 125 S-1.6	961567		
10702617003	**FL-B02 @ 4**	WREP 125 S-1.6	961567		
10702617004	**SP-CS01**	WREP 125 S-1.6	961567		
10702617005	**FL-B03 @ 4**	WREP 125 S-1.6	961567		
10702617006	**FL-B04 @ 4**	WREP 125 S-1.6	961567		
10702617007	**SP-CS02**	WREP 125 S-1.6	961567		
10702617001	**WH-B01 @ 5**	EPA 3050B	960441	EPA 6020B	960928
10702617002	**FL-B01 @ 3**	EPA 3050B	960441	EPA 6020B	960928
10702617003	**FL-B02 @ 4**	EPA 3050B	960441	EPA 6020B	960928
10702617004	**SP-CS01**	EPA 3050B	960441	EPA 6020B	960928
10702617005	**FL-B03 @ 4**	EPA 3050B	960441	EPA 6020B	960928
10702617006	**FL-B04 @ 4**	EPA 3050B	960441	EPA 6020B	960928
10702617007	**SP-CS02**	EPA 3050B	960441	EPA 6020B	960928
10702617001	**WH-B01 @ 5**	WREP 125 S-1.20	961535		
10702617002	**FL-B01 @ 3**	WREP 125 S-1.20	961535		
10702617003	**FL-B02 @ 4**	WREP 125 S-1.20	961535		
10702617004	**SP-CS01**	WREP 125 S-1.20	961535		
10702617005	**FL-B03 @ 4**	WREP 125 S-1.20	961535		
10702617006	**FL-B04 @ 4**	WREP 125 S-1.20	961535		
10702617007	**SP-CS02**	WREP 125 S-1.20	961535		
10702617001	**WH-B01 @ 5**	WREP 125 S-1.10	961531		
10702617002	**FL-B01 @ 3**	WREP 125 S-1.10	961531		
10702617003	**FL-B02 @ 4**	WREP 125 S-1.10	961531		
10702617004	**SP-CS01**	WREP 125 S-1.10	961531		
10702617005	**FL-B03 @ 4**	WREP 125 S-1.10	961531		
10702617006	**FL-B04 @ 4**	WREP 125 S-1.10	961531		
10702617007	**SP-CS02**	WREP 125 S-1.10	961531		

Sub-Contract Chain of Custody

Batch Date/Time: 08/01/24 08:21
Sub-Contract Lab: PACEMN
Address: 1700 Elm Street Suite 200 SE
City/State: Minneapolis, MN 55414
Contact: Kirsten.Hogberg@pacelabs.com
Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2334055
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 08/07/24
ESC Purchase Order #: L1762157
Send Reports to: James C Huckaba

Pace Analytical®

12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone:(615) 773-9756
Fax:(615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
WH-B01 @ 5	SS	CO	07/29/24 09:30	SUB TABLE 915 INORGANICS	1. L1762157-01	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
FL-B01 @ 3	SS	CO	07/29/24 09:40	SUB TABLE 915 INORGANICS	2. L1762157-02	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
FL-B02 @ 4	SS	CO	07/29/24 09:42	SUB TABLE 915 INORGANICS	3. L1762157-03	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
SP-CS01	SS	CO	07/29/24 09:44	SUB TABLE 915 INORGANICS	4. L1762157-04	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
FL-B03 @ 4	SS	CO	07/29/24 11:00	SUB TABLE 915 INORGANICS	5. L1762157-05	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
FL-B04 @ 4	SS	CO	07/29/24 11:02	SUB TABLE 915 INORGANICS	6. L1762157-06	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn
SP-CS02	SS	CO	07/29/24 11:02	SUB TABLE 915 INORGANICS	7. L1762157-07	Hot Water Soluble Boron, SAR including pH and EC, 6020 Ag, As, Ba, Cd, Cu, Ni, Pb, Se, Zn

*= Container used for multiple Samples and/or Analyses

Relinquished by: _____ Date 8-1-24

Recieved by: [signature] Date 8/2/24 8:50 4.1°C

Relinquished by: _____ Date _____

Recieved by: _____ Date _____

WO#: 10702617

10702617

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt

CLIENT NAME: Pace mtdl **PROJECT #:**

WO#: 10702617

PM: YO1 **Due Date: 08/16/24**

CLIENT: PASI-TN

COURIER: ☐ Client ☐ Commercial ☑ FedEx ☐ Pace ☐ SpeeDee ☐ UPS ☐ USPS

TRACKING NUMBER: 4041 0473 2400 ☐ See Exceptions form ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present: ☑ YES ☐ NO **Seals Intact:** ☑ YES ☐ NO **Biological Tissue Frozen:** ☐ YES ☐ NO ☑ N/A

Packing Material: ☑ Bubble Bags ☐ Bubble Wrap ☐ None ☐ Other **Temp Blank:** ☑ YES ☐ NO **Type of Ice:** ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Thermometer: ☑ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710)

Did Samples Originate in West Virginia: ☐ YES ☑ NO	**Were All Container Temps taken:** ☐ YES ☐ NO ☑ N/A
Correction Factor: +.2 **Cooler Temp Read w/Temp Blank:** 3.9 °C **Cooler Temp Corrected w/Temp Blank:** 4.1 °C	**Average Corrected Temp (no Temp Blank Only):** _____ °C
***NOTE:** Temp should be above freezing to 6°C.*	☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container
USDA Regulated Soil: ☐ N/A – Water Sample/Other (describe): Soil	**Initials & Date of Person Examining Contents:** SMC 8/2/24
Did Samples originate from one of the following states (check maps) – AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: ☐ YES ☑ NO	Did samples originate from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☑ NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.	

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA

	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☐	☑	☐	3.
Samples Arrived within Hold Time?	☑	☐		4. If Fecal: ☐ <8 hrs ☐ >8 hr, <24 hr ☐ No
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Other: _____
Rush Turn Around Time Requested?	☑	☐		6. 8/7/24
Sufficient Sample Volume?	☑	☐		7. 1 VOA per sample
Correct Containers Used?	☑	☐	☐	8.
– Pace Containers Used?	☐	☑		
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☐	☑	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC? **NOTE:** If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☑ Soil ☐ Water ☐ Other	☑	☐		11. **If NO, write ID/Date/Time of container below:** ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐	☐	☑	12. Sample #:
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☐	☐	☑	☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS	☐	☐	☑	Positive for Residual Chlorine: ☐ YES ☐ NO
NOTE: If adding preservation to the container, **verify with the PM first.** Clients may require adding preservative to the field and equipment blanks when this occurs.				**pH Paper Lot #**

Residual Chlorine	0-6 Roll	0-6 Strip	0-14 Strip

☐ See Exceptions form ENV-FRM-MIN4-0142

Headspace in Methyl Mercury Container?	☐	☐	☑	13.
Extra labels present on soil VOA or WIDRO containers?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION **FIELD DATA REQUIRED:** ☐ YES ☐ NO

Person Contacted: _____ Date & Time: _____

Comments / Resolution: _____

Project Manager Review: Anchea Richardson **Date:** 8/2/24

***NOTE:** When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Labeled By: SMC **Line:** 3

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Pace Analytical	Report To: Pace Analytical Subout Team	Attention: Sam Vogt / Jacob Evans
Address: 12065 Lebanon Rd.	Copy To:	Company Name:
Mt. Juliet, TN 37122		Address:
Email: MTJLSuboutTeam@pacelabs.com	Purchase Order #: L1762157	Pace Quote:
Phone: (615) 773-9756 Fax: (615) 758-5859	Project Name: Shaffer Newman 24-13	Pace Project Manager: Kirsten Hogberg
Requested Due Date: 7-Aug	Project #: 24009	Pace Profile #: 38076

Regulatory Agency
State / Location
CO

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SUB TABLE 915 INORGAN	Residual Chlorine (Y/N)	
1	WH-B01 @ 5	SL				29-Jul	9:30		1								1		X		Hot Water Soluble Boron, SAR
2	FL-B01 @ 3	SL				29-Jul	9:40		1								1		X		Hot Water Soluble Boron, SAR
3	FL-B02 @ 4	SL				29-Jul	9:42		1								1		X		Hot Water Soluble Boron, SAR
4	SP-CS01	SL				29-Jul	9:44		1								1		X		Hot Water Soluble Boron, SAR
5	FL-B03 @ 4	SL				29-Jul	11:00		1								1		X		Hot Water Soluble Boron, SAR
6	FL-B04 @ 4	SL				29-Jul	11:02		1								1		X		Hot Water Soluble Boron, SAR
7	SP-CS02	SL				29-Jul	11:02		1								1		X		Hot Water Soluble Boron, SAR
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	James C Huckaba	1-Aug	8:33				
Pace Analytical Batch: WG2334055							
Pace Analytical SDGs: L1762157							
Location: Minneapolis, MN 55414							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed:**

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)