MARCH 8, 2022

2021 ANNUAL MONITORING REPORT
(SAMPLING DATE: NOVEMBER 9, 2021)

R360 Artesia LLC Landfarm
Township 17 South, Range 32 East, Unit A of Section 7
Maljamar, Lea County, New Mexico
Permit No. NM-1-30

Prepared for:

R360 ENVIRONMENTAL SOLUTIONS

4507. HWY 62/180
HOBBS, NEW MEXICO 88240

Prepared by:

TRIDENT ENVIRONMENTAL

PO BOX 12177
ODESSA, TEXAS 79768

Gilbert J. Van Deventer, PG

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1.0 INTRODUCTION

As agent for R360 Environmental Solutions (R360), Trident Environmental submits this *2021 Annual Monitoring Report* for the R360 Artesia, LLC Landfarm (landfarm). Pursuant to 19.15.9.711 NMAC, the New Mexico Oil Conservation Division (OCD) issued permit number NM-1-30 to Artesia Aeration Landfarm on November 29, 1999, as a commercial surface waste management facility for treating exempt oil field waste which consists predominantly of petroleum hydrocarbon-impacted soil and drill cuttings. R360 acquired the landfarm in April 2011 and has not accepted new material since that time. The landfarm occupies approximately 48.4 acres in Unit A (NE/4, NE/4) of Section 7, Township 17 South, Range 32 East, Lea County, New Mexico, as depicted on the Site Location Map (Figure 1). The landfarm is divided into 6 cells (cell 1 through cell 6) ranging in size from about 2.74 acres (cell 1) to 13.28 acres (cell 6). Figure 2 is a site map depicting locations of the vadose zone samples collected during the annual monitoring event on November 9, 2021.

2.0 MONITORING PROGRAM

Samples are no longer collected from cell 6 since the treatment zone soil overlying the perched water zone was removed from cell 6 and the southwest corner of cell 5 and placed as an additional lift on cells 1, 3 and 4 in 2015. OCD granted approval for adding additional lifts of contaminated soil in cell 2 on March 23, 2015, and in cells 1, 3, and 4 on November 21, 2016. No contaminated soil has since been added to those cells, therefore treatment zone samples are not necessary in cells 1, 2, 3, and 4, as they have met closure performance standards and do not require remediation. Treatment zone samples continue to be collected in cell 5 which is still progressing with remediation to meet closure performance standards.

On May 3, 2017, R360 requested approval from OCD for a minor modification to reduce the quarterly vadose zone monitoring frequency for total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) to semi-annual. In accordance with OCD's written approval of the minor modification on May 9, 2017, the vadose zone is monitored for total TPH, BTEX, and chloride semi-annually; and major cations/anions and Water Quality Control Commission (WQCC) metals annually.

3.0 SOIL SAMPLING PROCEDURES

Vadose zone samples are collected from cells 1 through 5 approximately 3 feet below native ground surface or to the naturally indurated caliche layer, whichever is encountered first. The samples are collected with a hand trowel after a backhoe temporarily excavates the overlying treatment zone soil from each location. The samples are then placed in 4-ounce glass containers, properly labeled, and placed in a cooler with ice, while the removed treatment zone soils are returned back in to the temporary excavation with the backhoe.

A treatment zone sample is collected from an approximate depth of 1 foot into the treatment (tilled) zone at cell 5 using a stainless steel trowel. Treatment zone sample aliquots from four discrete locations are composited as a single sample and immediately placed in pre-cleaned 4-ounce containers, properly labeled, and placed in a cooler with ice.

The locations of all samples are accurately recorded with a Garmin® eTrex Summit handheld GPS receiver. All soil samples were delivered with a chain of custody to Pace Analytical Laboratory (Mount Juliet TN), which is accredited under the National Environmental Laboratory Accreditation Program (NELAP). Laboratory analysis was determined for each constituent using the following methods:

- TPH (C6- C36) using EPA Method 8015 ;
- BTEX using EPA Method 8021B;
- WQCC metals (Subsections A and B of 20.6.2.3103 NMAC- Arsenic, Barium, Cadmium, Chromium, Lead, Total Mercury, Selenium, Silver, Copper, Iron, Manganese, Zinc) using EPA Method 6020;
- Major cations (Calcium, Magnesium, Sodium, and Potassium) using EPA Method 6010B, and major anions (Chloride, Sulfate, and Bicarbonate) using EPA Methods 300, 375, and 310.

4.0 SOIL SAMPLE ANALYTICAL RESULTS

The annual monitoring event was conducted on November 9, 2021. Treatment and vadose zone sample analytical results for the 2021 Annual monitoring event are summarized in Table 1 (BTEX, TPH, and Chloride). Additional vadose zone sample analytical results for the annual monitoring event are summarized in Table 2 (WQCC metals), and Table 3 (Cations/Anions). Laboratory analytical reports and chains of custody are included as Attachment A.

5.0 CONCLUSIONS

During this annual monitoring event, benzene, BTEX, and TPH concentrations in the treatment zone of Cell 5, and all vadose zone samples did not exceed levels specified in Table 1 (Closure Criteria for Soils Impacted by a Release) in accordance with NMAC 19.15.29.12.E (2) for groundwater deeper than 100 ft below ground surface. It has been established that there is no groundwater beneath the treatment cells.

WQCC metals and major cations/anions were consistent with background concentrations.

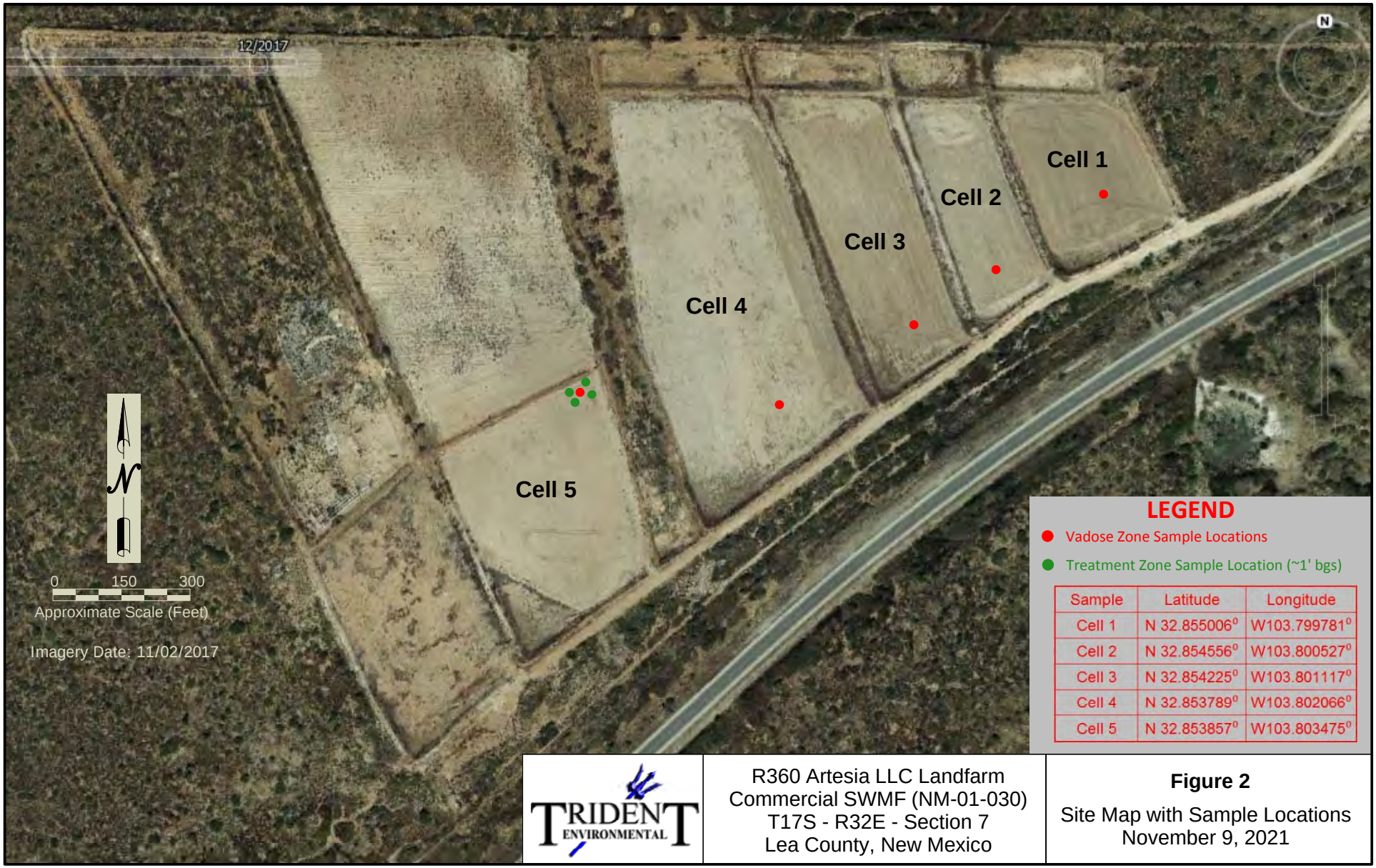
FIGURES

Google Earth

miles 3

km 5

TRIDENT ENVIRONMENTAL	**R360 Artesia LLC Landfarm** Unit A, Sec 7, T17S, R32E, Lea County, NM N 32° 51' 17" W 103° 47' 57"	**Figure 1** **Site Location Map**



TRIDENT ENVIRONMENTAL

R360 Artesia LLC Landfarm
Commercial SWMF (NM-01-030)
T17S - R32E - Section 7
Lea County, New Mexico

Figure 2

Site Map with Sample Locations
November 9, 2021

TABLES

Table 1

Summary of Benzene, BTEX, TPH, and Chloride Results

Cell	Date	Zone	Depth (ft btz)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	BTEX	GRO C6-C10	DRO >C10-C28	MRO >C28-C36	TPH C6-C36	Chloride
1	05/18/21	Vadose	2	<0.001	<0.001	<0.001	<0.003	<0.006	<0.0223	1.84[J]	5.27	7.11	18.4
	11/09/21		3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0224	1.79[J]	8.10	9.89	49.2
2	05/18/21	Vadose	3	<0.001	<0.001	<0.001	<0.003	<0.006	<0.0242	<1.79	0.851[J]	<8.90	202
	11/09/21		3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0233	<1.73	4.24	4.24	145
3	05/18/21	Vadose	3	<0.001	<0.001	<0.001	<0.003	<0.006	<0.0235	<1.74	<0.297	<8.00	37.4
	11/09/21		3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0229	<1.70	6.34	6.34	139
4	05/18/21	Vadose	3	<0.001	<0.001	<0.001	<0.003	<0.006	<0.0234	<1.74	0.849[J]	<8.64	38.1
	11/09/21		3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0220	<1.63	3.37	3.37	76.1
5	05/18/21	Treatment	1	--	--	--	--	--	0.0273	2.33[J]	9.88	12.2	341
	11/09/21		1	--	--	--	--	--	<0.0243	286	587	873	1,670
	05/18/21	Vadose	4	<0.001	<0.001	<0.001	<0.003	<0.006	<0.0226	19.8	46.6	66.4	430
	11/09/21		4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0221	<1.64	9.16	9.16	<9.38
Background (μ+σ):				<0.001	<0.001	<0.001	<0.001	<0.006	<10.4	<10.4	<10.4	<31.2	<5.04
Reporting Limit (RL and PQL):				0.00548	0.0074	0.00284	0.00500	0.0150	26.9	26.9	26.9	26.9	<9.27
19.15.36.15.(F) Closure Standards:				0.2	NA	NA	NA	50	500		--	2,500	1,000
19.15.29.12 Closure Standards:				10	NA	NA	NA	50	1,000		--	2,500	20,000

Table 2

Summary of WQCC Metals in Vadose Zone (mg/kg)

(Samples Collected on November 9, 2021)

Cell	Depth (ft btz)	Ag	As	Ba	Cd	Cr	Cu	Fe	Hg	Mn	Pb	Se	Zn
1	3'	<0.131	.849[J]	82.1	0.0841[J]	6.81	2.56	6,410	<0.0186	54.5	1.98	<0.789	14.4
2	3'	<0.136	1.25	463	<0.0506	10.9	4.24	10,300	<0.0196	112	3.74	<0.820	23.5
3	3'	<0.134	1.64	42.7	0.0910[J]	8.67	3.01	8,940	<0.0190	79.0	3.31	<0.806	19.3
4	3'	<0.129	<0.525	31.6	<0.0478	1.76	0.933	1,190	<0.0183	11.3	0.377	<0.775	3.0
5	4'	<0.130	0.540[J]	33.0	0.0562[J]	6.21	2.47	6,440	<0.0184	65.1	2.33	<0.779	13.8
PQL (RL)		1.71	1.71	1.71	1.71	1.71	1.71	39.4	0.0037	1.71	1.71	1.71	1.71
Background =		1.71	3.13	55.6	1.71	9.67	1.02	13,798	0.0101	73.3	2.53	6.46	25.6

Table 3

Summary of Major Cations/Anions in Vadose Zone (mg/kg)

Cell	Depth (ft btz)	Cations				Anions		
		Ca	Mg	K	Na	Cl	SO_4	T-Alk
1	3'	55,600	2,420	1,880	270	49.2	740	*
2	3'	17,100	4,000	2,830	144	145	96.5	*
3	3'	1,380	1,860	2,330	473	139	119	*
4	3'	14,600	1,510	369	95.7	76.1	188	*
5	4'	1,150	1,210	1,640	<42.0	<9.38	<13.2	*

All concentrations reported in units of milligrams per kilogram (mg/kg).

Treatment Zone depth listed in feet below native ground surface (ft bgs).

Vadose Zone depth listed in feet below bottom of Treatment Zone (ft btz).

-- BTEX analysis not required for treatment zone samples

J: Analyte detected at a concentration between the method detection limit and reporting limit; therefore, result is an estimated cor

Background and PQL data based on 12 background samples collected on February 21, 2017.

19.15.36.15.(F) refers to *Treatment Zone* Closure Performance Standards (February 2007)

19.15.29.12 refers to Remediation and Closure Criteria for Soils Impacted by a *Release* (August 2018) where depth to groundwater is g

* EPA eliminated alkalinity (bicarbonate as CaCO3-) soil method in the latest MUR (Method Update Revision) so laboratories canno

ATTACHMENT A

Laboratory Analytical Reports and Chains of Custody

ANALYTICAL REPORT

December 21, 2021

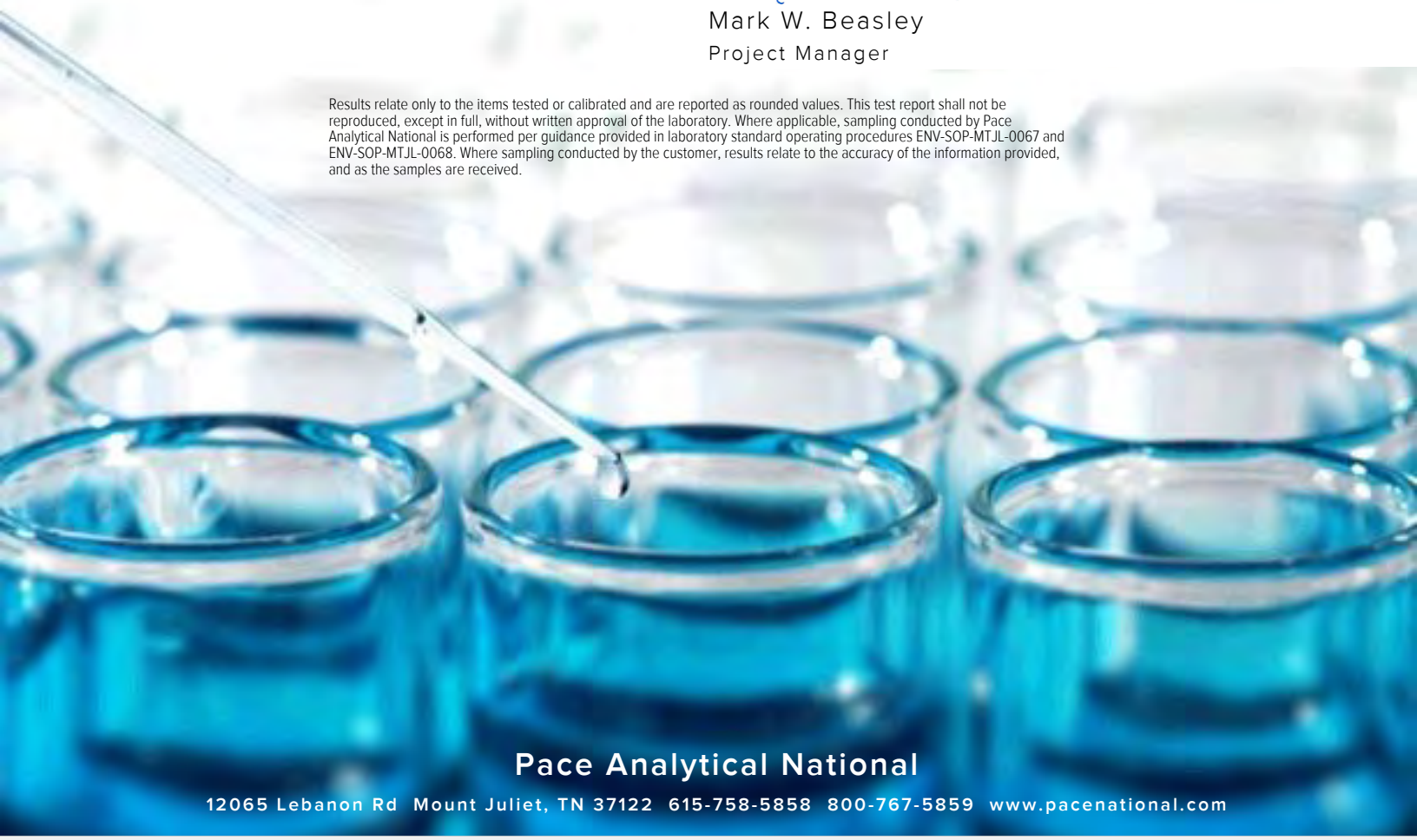
Trident Environmental

Sample Delivery Group:	L1430778
Samples Received:	11/12/2021
Project Number:	V-259-1121
Description:	R360 Artesia LLC Landfarm
Site:	NM-1-30
Report To:	Gil Van Deventer
	P.O. Box 7624
	Midland, TX 79708

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

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



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

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VZ-1 L1430778-01 Solid

Collected by: Gil Van Deventer | Collected date/time: 11/09/21 12:00 | Received date/time: 11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1792715	1	12/04/21 17:12	12/04/21 23:27	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1783440	1	12/04/21 17:12	12/04/21 23:27	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776380	1	11/18/21 12:42	11/19/21 09:51	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1776871	1	11/29/21 09:10	12/16/21 19:20	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1775555	1	11/16/21 23:21	11/17/21 14:51	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1777516	1	11/20/21 05:24	11/20/21 13:41	DMG	Mt. Juliet, TN

VZ-2 L1430778-02 Solid

Collected by: Gil Van Deventer | Collected date/time: 11/09/21 11:30 | Received date/time: 11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1792715	1	12/04/21 17:12	12/04/21 23:43	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1783440	1	12/04/21 17:12	12/04/21 23:43	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776380	1	11/18/21 12:42	11/19/21 10:30	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1776871	1	11/29/21 09:10	12/16/21 19:23	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1775555	1	11/16/21 23:21	11/17/21 15:15	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1777516	1	11/20/21 05:24	11/20/21 13:53	DMG	Mt. Juliet, TN

VZ-3 L1430778-03 Solid

Collected by: Gil Van Deventer | Collected date/time: 11/09/21 11:15 | Received date/time: 11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1792715	1	12/04/21 17:12	12/05/21 00:31	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1783440	1	12/04/21 17:12	12/05/21 00:31	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776380	1	11/18/21 12:42	11/19/21 10:37	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1776871	1	11/29/21 09:10	12/16/21 19:31	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1775555	1	11/16/21 23:21	11/17/21 15:39	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1777516	1	11/20/21 05:24	11/20/21 14:30	DMG	Mt. Juliet, TN

VZ-4 L1430778-04 Solid

Collected by: Gil Van Deventer | Collected date/time: 11/09/21 11:00 | Received date/time: 11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1792715	1	12/04/21 17:12	12/05/21 00:47	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1783440	1	12/04/21 17:12	12/05/21 00:47	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776380	1	11/18/21 12:42	11/19/21 10:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1776871	1	11/29/21 09:10	12/16/21 19:34	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1776649	1	11/16/21 23:21	11/18/21 16:50	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1777516	1	11/20/21 05:24	11/20/21 14:42	DMG	Mt. Juliet, TN

VZ-5 L1430778-05 Solid

Collected by: Gil Van Deventer | Collected date/time: 11/09/21 10:00 | Received date/time: 11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1792715	1	12/04/21 17:12	12/05/21 01:03	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1783440	1	12/04/21 17:12	12/05/21 01:03	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1776380	1	11/18/21 12:42	11/19/21 10:42	ABL	Mt. Juliet, TN

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

VZ-5 L1430778-05 Solid

Collected by	Collected date/time	Received date/time
Gil Van Deventer	11/09/21 10:00	11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1776871	1	11/29/21 09:10	12/16/21 19:36	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1776649	1	11/16/21 23:21	11/18/21 17:13	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1777516	1	11/20/21 05:24	11/20/21 14:55	DMG	Mt. Juliet, TN

TZ-5 L1430778-06 Solid

Collected by	Collected date/time	Received date/time
Gil Van Deventer	11/09/21 10:50	11/12/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1774717	1	11/16/21 19:48	11/16/21 20:11	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1783690	10	12/05/21 15:55	12/06/21 00:12	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1776649	1	11/16/21 23:21	11/18/21 17:37	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1778207	1	11/22/21 16:57	11/23/21 10:05	TJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1778207	5	11/22/21 16:57	11/23/21 16:17	TJD	Mt. Juliet, TN

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.

Mark W. Beasley
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.8		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	49.2		9.50	20.0	20.7	1	12/04/2021 23:27	WG1792715

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Sulfate	740		13.3	50.0	51.6	1	12/04/2021 23:27	WG1783440

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Mercury	U		0.0186	0.0400	0.0413	1	11/19/2021 09:51	WG1776380

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Arsenic	0.849	J	0.535	2.00	2.07	1	12/16/2021 19:20	WG1776871
Barium	82.1		0.0880	0.500	0.516	1	12/16/2021 19:20	WG1776871
Cadmium	0.0841	J	0.0487	0.500	0.516	1	12/16/2021 19:20	WG1776871
Calcium	55600		10.9	100	103	1	12/16/2021 19:20	WG1776871
Chromium	6.81		0.137	1.00	1.03	1	12/16/2021 19:20	WG1776871
Copper	2.56		0.413	2.00	2.07	1	12/16/2021 19:20	WG1776871
Iron	6410		2.31	10.0	10.3	1	12/16/2021 19:20	WG1776871
Lead	1.98		0.215	0.500	0.516	1	12/16/2021 19:20	WG1776871
Magnesium	2420		7.62	100	103	1	12/16/2021 19:20	WG1776871
Manganese	54.5		0.137	1.00	1.03	1	12/16/2021 19:20	WG1776871
Potassium	1880		21.6	50.0	51.6	1	12/16/2021 19:20	WG1776871
Selenium	U		0.789	2.00	2.07	1	12/16/2021 19:20	WG1776871
Silver	U		0.131	1.00	1.03	1	12/16/2021 19:20	WG1776871
Sodium	270		42.6	100	103	1	12/16/2021 19:20	WG1776871
Zinc	14.4		0.859	5.00	5.16	1	12/16/2021 19:20	WG1776871

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000124	0.000500	0.000516	1	11/17/2021 14:51	WG1775555
Toluene	U		0.000155	0.00500	0.00516	1	11/17/2021 14:51	WG1775555
Ethylbenzene	0.000208	B J	0.000114	0.000500	0.000516	1	11/17/2021 14:51	WG1775555
Total Xylene	0.00144	B J	0.000475	0.00150	0.00155	1	11/17/2021 14:51	WG1775555
TPH (GC/FID) Low Fraction	U		0.0224	0.100	0.103	1	11/17/2021 14:51	WG1775555
(S) a,a,a-Trifluorotoluene(FID)	*95.4*				*77.0-120*		*11/17/2021 14:51*	WG1775555
(S) a,a,a-Trifluorotoluene(PID)	*99.6*				*72.0-128*		*11/17/2021 14:51*	WG1775555

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	1.79	J	1.66	4.00	4.13	1	11/20/2021 13:41	WG1777516
C28-C36 Motor Oil Range	8.10		0.283	4.00	4.13	1	11/20/2021 13:41	WG1777516
(S) o-Terphenyl	*95.9*				*18.0-148*		*11/20/2021 13:41*	WG1777516

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.1		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	145		9.88	20.0	21.5	1	12/04/2021 23:43	WG1792715

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Sulfate	96.5		13.8	50.0	53.7	1	12/04/2021 23:43	WG1783440

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Mercury	U		0.0193	0.0400	0.0429	1	11/19/2021 10:30	WG1776380

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Arsenic	1.25	J	0.556	2.00	2.15	1	12/16/2021 19:23	WG1776871
Barium	463		0.0915	0.500	0.537	1	12/16/2021 19:23	WG1776871
Cadmium	U		0.0506	0.500	0.537	1	12/16/2021 19:23	WG1776871
Calcium	17100		11.4	100	107	1	12/16/2021 19:23	WG1776871
Chromium	10.9		0.143	1.00	1.07	1	12/16/2021 19:23	WG1776871
Copper	4.24		0.429	2.00	2.15	1	12/16/2021 19:23	WG1776871
Iron	10300		2.40	10.0	10.7	1	12/16/2021 19:23	WG1776871
Lead	3.74		0.223	0.500	0.537	1	12/16/2021 19:23	WG1776871
Magnesium	4000		7.92	100	107	1	12/16/2021 19:23	WG1776871
Manganese	112		0.143	1.00	1.07	1	12/16/2021 19:23	WG1776871
Potassium	2830		22.4	50.0	53.7	1	12/16/2021 19:23	WG1776871
Selenium	U		0.820	2.00	2.15	1	12/16/2021 19:23	WG1776871
Silver	U		0.136	1.00	1.07	1	12/16/2021 19:23	WG1776871
Sodium	144		44.2	100	107	1	12/16/2021 19:23	WG1776871
Zinc	23.5		0.893	5.00	5.37	1	12/16/2021 19:23	WG1776871

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000129	0.000500	0.000537	1	11/17/2021 15:15	WG1775555
Toluene	U		0.000161	0.00500	0.00537	1	11/17/2021 15:15	WG1775555
Ethylbenzene	0.000183	B J	0.000118	0.000500	0.000537	1	11/17/2021 15:15	WG1775555
Total Xylene	0.00117	B J	0.000494	0.00150	0.00161	1	11/17/2021 15:15	WG1775555
TPH (GC/FID) Low Fraction	U		0.0233	0.100	0.107	1	11/17/2021 15:15	WG1775555
(S) a,a,a-Trifluorotoluene(FID)	*95.9*				*77.0-120*		*11/17/2021 15:15*	WG1775555
(S) a,a,a-Trifluorotoluene(PID)	*99.4*				*72.0-128*		*11/17/2021 15:15*	WG1775555

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.73	4.00	4.29	1	11/20/2021 13:53	WG1777516
C28-C36 Motor Oil Range	4.24	B J	0.294	4.00	4.29	1	11/20/2021 13:53	WG1777516
(S) o-Terphenyl	*53.8*				*18.0-148*		*11/20/2021 13:53*	WG1777516

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.8		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	139		9.70	20.0	21.1	1	12/05/2021 00:31	WG1792715

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Sulfate	119		13.6	50.0	52.7	1	12/05/2021 00:31	WG1783440

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Mercury	U		0.0190	0.0400	0.0422	1	11/19/2021 10:37	WG1776380

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Arsenic	1.64	J	0.546	2.00	2.11	1	12/16/2021 19:31	WG1776871
Barium	42.7		0.0899	0.500	0.527	1	12/16/2021 19:31	WG1776871
Cadmium	0.0910	J	0.0497	0.500	0.527	1	12/16/2021 19:31	WG1776871
Calcium	1380		11.2	100	105	1	12/16/2021 19:31	WG1776871
Chromium	8.67		0.140	1.00	1.05	1	12/16/2021 19:31	WG1776871
Copper	3.01		0.422	2.00	2.11	1	12/16/2021 19:31	WG1776871
Iron	8940		2.36	10.0	10.5	1	12/16/2021 19:31	WG1776871
Lead	3.31		0.219	0.500	0.527	1	12/16/2021 19:31	WG1776871
Magnesium	1860		7.78	100	105	1	12/16/2021 19:31	WG1776871
Manganese	79.0		0.140	1.00	1.05	1	12/16/2021 19:31	WG1776871
Potassium	2330		22.0	50.0	52.7	1	12/16/2021 19:31	WG1776871
Selenium	U		0.806	2.00	2.11	1	12/16/2021 19:31	WG1776871
Silver	U		0.134	1.00	1.05	1	12/16/2021 19:31	WG1776871
Sodium	473		43.5	100	105	1	12/16/2021 19:31	WG1776871
Zinc	19.3		0.878	5.00	5.27	1	12/16/2021 19:31	WG1776871

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	0.000138	J	0.000127	0.000500	0.000527	1	11/17/2021 15:39	WG1775555
Toluene	U		0.000158	0.00500	0.00527	1	11/17/2021 15:39	WG1775555
Ethylbenzene	0.000386	B J	0.000116	0.000500	0.000527	1	11/17/2021 15:39	WG1775555
Total Xylene	0.00146	B J	0.000485	0.00150	0.00158	1	11/17/2021 15:39	WG1775555
TPH (GC/FID) Low Fraction	U		0.0229	0.100	0.105	1	11/17/2021 15:39	WG1775555
(S) a,a,a-Trifluorotoluene(FID)	*95.4*				*77.0-120*		*11/17/2021 15:39*	WG1775555
(S) a,a,a-Trifluorotoluene(PID)	*101*				*72.0-128*		*11/17/2021 15:39*	WG1775555

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.70	4.00	4.22	1	11/20/2021 14:30	WG1777516
C28-C36 Motor Oil Range	6.34	B	0.289	4.00	4.22	1	11/20/2021 14:30	WG1777516
(S) o-Terphenyl	*79.6*				*18.0-148*		*11/20/2021 14:30*	WG1777516

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	98.6		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	76.1		9.33	20.0	20.3	1	12/05/2021 00:47	WG1792715

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Sulfate	188		13.1	50.0	50.7	1	12/05/2021 00:47	WG1783440

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Mercury	U		0.0183	0.0400	0.0406	1	11/19/2021 10:40	WG1776380

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Arsenic	U		0.525	2.00	2.03	1	12/16/2021 19:34	WG1776871
Barium	31.6		0.0864	0.500	0.507	1	12/16/2021 19:34	WG1776871
Cadmium	U		0.0478	0.500	0.507	1	12/16/2021 19:34	WG1776871
Calcium	14600		10.7	100	101	1	12/16/2021 19:34	WG1776871
Chromium	1.76		0.135	1.00	1.01	1	12/16/2021 19:34	WG1776871
Copper	0.933	J	0.406	2.00	2.03	1	12/16/2021 19:34	WG1776871
Iron	1190		2.27	10.0	10.1	1	12/16/2021 19:34	WG1776871
Lead	0.377	J	0.211	0.500	0.507	1	12/16/2021 19:34	WG1776871
Magnesium	1510		7.48	100	101	1	12/16/2021 19:34	WG1776871
Manganese	11.3		0.135	1.00	1.01	1	12/16/2021 19:34	WG1776871
Potassium	369		21.2	50.0	50.7	1	12/16/2021 19:34	WG1776871
Selenium	U		0.775	2.00	2.03	1	12/16/2021 19:34	WG1776871
Silver	U		0.129	1.00	1.01	1	12/16/2021 19:34	WG1776871
Sodium	95.7	J	41.8	100	101	1	12/16/2021 19:34	WG1776871
Zinc	2.96	J	0.844	5.00	5.07	1	12/16/2021 19:34	WG1776871

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000122	0.000500	0.000507	1	11/18/2021 16:50	WG1776649
Toluene	0.000490	B J	0.000152	0.00500	0.00507	1	11/18/2021 16:50	WG1776649
Ethylbenzene	0.000379	J	0.000112	0.000500	0.000507	1	11/18/2021 16:50	WG1776649
Total Xylene	0.00172		0.000466	0.00150	0.00152	1	11/18/2021 16:50	WG1776649
TPH (GC/FID) Low Fraction	U		0.0220	0.100	0.101	1	11/18/2021 16:50	WG1776649
(S) a,a,a-Trifluorotoluene(FID)	*96.5*				*77.0-120*		*11/18/2021 16:50*	WG1776649
(S) a,a,a-Trifluorotoluene(PID)	*100*				*72.0-128*		*11/18/2021 16:50*	WG1776649

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.63	4.00	4.06	1	11/20/2021 14:42	WG1777516
C28-C36 Motor Oil Range	3.37	B J	0.278	4.00	4.06	1	11/20/2021 14:42	WG1777516
(S) o-Terphenyl	*88.2*				*18.0-148*		*11/20/2021 14:42*	WG1777516

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	98.0		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	U		9.38	20.0	20.4	1	12/05/2021 01:03	WG1792715

Wet Chemistry by Method 9056A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Sulfate	U		13.2	50.0	51.0	1	12/05/2021 01:03	WG1783440

Mercury by Method 7471A

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Mercury	U		0.0184	0.0400	0.0408	1	11/19/2021 10:42	WG1776380

Metals (ICP) by Method 6010B

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Arsenic	0.545	J	0.528	2.00	2.04	1	12/16/2021 19:36	WG1776871
Barium	33.0		0.0869	0.500	0.510	1	12/16/2021 19:36	WG1776871
Cadmium	0.0562	J	0.0480	0.500	0.510	1	12/16/2021 19:36	WG1776871
Calcium	1150		10.8	100	102	1	12/16/2021 19:36	WG1776871
Chromium	6.21		0.136	1.00	1.02	1	12/16/2021 19:36	WG1776871
Copper	2.47		0.408	2.00	2.04	1	12/16/2021 19:36	WG1776871
Iron	6440		2.28	10.0	10.2	1	12/16/2021 19:36	WG1776871
Lead	2.33		0.212	0.500	0.510	1	12/16/2021 19:36	WG1776871
Magnesium	1210		7.53	100	102	1	12/16/2021 19:36	WG1776871
Manganese	65.1		0.136	1.00	1.02	1	12/16/2021 19:36	WG1776871
Potassium	1640		21.3	50.0	51.0	1	12/16/2021 19:36	WG1776871
Selenium	U		0.779	2.00	2.04	1	12/16/2021 19:36	WG1776871
Silver	U		0.130	1.00	1.02	1	12/16/2021 19:36	WG1776871
Sodium	U		42.0	100	102	1	12/16/2021 19:36	WG1776871
Zinc	13.8		0.849	5.00	5.10	1	12/16/2021 19:36	WG1776871

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Benzene	U		0.000122	0.000500	0.000510	1	11/18/2021 17:13	WG1776649
Toluene	0.000409	B J	0.000153	0.00500	0.00510	1	11/18/2021 17:13	WG1776649
Ethylbenzene	0.000232	J	0.000112	0.000500	0.000510	1	11/18/2021 17:13	WG1776649
Total Xylene	0.00116	J	0.000469	0.00150	0.00153	1	11/18/2021 17:13	WG1776649
TPH (GC/FID) Low Fraction	U		0.0221	0.100	0.102	1	11/18/2021 17:13	WG1776649
(S) a,a,a-Trifluorotoluene(FID)	*96.7*				*77.0-120*		*11/18/2021 17:13*	WG1776649
(S) a,a,a-Trifluorotoluene(PID)	*100*				*72.0-128*		*11/18/2021 17:13*	WG1776649

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.64	4.00	4.08	1	11/20/2021 14:55	WG1777516
C28-C36 Motor Oil Range	9.16		0.279	4.00	4.08	1	11/20/2021 14:55	WG1777516
(S) o-Terphenyl	*95.4*				*18.0-148*		*11/20/2021 14:55*	WG1777516

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.4		1	11/16/2021 20:11	WG1774717

Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
Chloride	1760		103	20.0	224	10	12/06/2021 00:12	WG1783690

Volatile Organic Compounds (GC) by Method 8015/8015D/GRO/8021

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0243	0.100	0.112	1	11/18/2021 17:37	WG1776649
(S) a,a,a-Trifluorotoluene(FID)	*95.6*				*77.0-120*		*11/18/2021 17:37*	WG1776649

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

Analyte	Result (dry)	Qualifier	SDL (dry)	Unadj. MQL	MQL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	286		1.80	4.00	4.47	1	11/23/2021 10:05	WG1778207
C28-C36 Motor Oil Range	587		1.53	4.00	22.4	5	11/23/2021 16:17	WG1778207
(S) o-Terphenyl	*67.1*				*18.0-148*		*11/23/2021 16:17*	WG1778207
(S) o-Terphenyl	*57.4*				*18.0-148*		*11/23/2021 10:05*	WG1778207

Method Blank (MB)

(MB) R3730537-1 11/16/21 20:11

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1430778-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1430778-03 11/16/21 20:11 • (DUP) R3730537-3 11/16/21 20:11

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.8	94.8	1	0.0294		10

Laboratory Control Sample (LCS)

(LCS) R3730537-2 11/16/21 20:11

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

Method Blank (MB)

(MB) R3737359-1 12/05/21 17:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1430623-63 Original Sample (OS) • Duplicate (DUP)

(OS) L1430623-63 12/05/21 20:02 • (DUP) R3737359-3 12/05/21 20:12

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	278	270	1.03	3.03		20

L1430770-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1430770-06 12/05/21 23:15 • (DUP) R3737359-6 12/05/21 23:24

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2850	3390	20	17.3		20

Laboratory Control Sample (LCS)

(LCS) R3737359-2 12/05/21 18:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	201	100	90.0-110	

L1430623-63 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430623-63 12/05/21 20:02 • (MS) R3737359-4 12/05/21 20:21 • (MSD) R3737359-5 12/05/21 20:31

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	552	278	829	851	100	104	1	80.0-120			2.54	20

Method Blank (MB)

(MB) R3743031-1 12/04/21 20:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

Laboratory Control Sample (LCS)

(LCS) R3743031-2 12/04/21 20:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	196	98.2	90.0-110	

Method Blank (MB)

(MB) R3737401-1 12/04/21 20:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Sulfate	U		12.9	50.0

L1429538-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1429538-01 12/04/21 21:52 • (DUP) R3737401-3 12/04/21 22:08

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	U	U	100	0.000		15

L1430789-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1430789-12 12/05/21 04:30 • (DUP) R3737401-6 12/05/21 04:46

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	186	218	1	15.7	P1	15

Laboratory Control Sample (LCS)

(LCS) R3737401-2 12/04/21 20:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	200	188	94.1	80.0-120	

L1429538-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1429538-01 12/04/21 21:52 • (MS) R3737401-4 12/04/21 22:24 • (MSD) R3737401-5 12/04/21 22:40

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	1050	U	U	U	0.000	0.000	100	80.0-120	J6	J6	0.000	15

Method Blank (MB)

(MB) R3731678-1 11/19/21 09:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3731678-2 11/19/21 09:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.476	95.2	80.0-120	

L1430778-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430778-01 11/19/21 09:51 • (MS) R3731678-3 11/19/21 09:54 • (MSD) R3731678-4 11/19/21 09:56

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.516	U	0.440	0.411	85.2	79.5	1	75.0-125			6.94	20

Method Blank (MB)

(MB) R3741824-1 12/16/21 18:26

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Calcium	U		10.6	100
Chromium	U		0.133	1.00
Copper	U		0.400	2.00
Iron	U		2.24	10.0
Lead	U		0.208	0.500
Magnesium	U		7.38	100
Manganese	U		0.133	1.00
Potassium	U		20.9	50.0
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Sodium	U		41.2	100
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3741824-2 12/16/21 18:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.6	92.6	80.0-120	
Barium	100	100	100	80.0-120	
Cadmium	100	92.7	92.7	80.0-120	
Calcium	1000	979	97.9	80.0-120	
Chromium	100	95.9	95.9	80.0-120	
Copper	100	98.0	98.0	80.0-120	
Iron	1000	972	97.2	80.0-120	
Lead	100	97.0	97.0	80.0-120	
Magnesium	1000	958	95.8	80.0-120	
Manganese	100	95.5	95.5	80.0-120	
Potassium	1000	947	94.7	80.0-120	
Selenium	100	93.8	93.8	80.0-120	
Silver	20.0	18.4	92.0	80.0-120	
Sodium	1000	993	99.3	80.0-120	
Zinc	100	92.9	92.9	80.0-120	

L1430704-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430704-02 12/16/21 18:32 • (MS) R3741824-5 12/16/21 18:40 • (MSD) R3741824-6 12/16/21 18:43

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	109	U	102	101	93.9	93.0	1	75.0-125			1.00	20
Barium	109	537	493	585	0.000	43.9	1	75.0-125	V	V	17.1	20
Cadmium	109	0.242	104	99.4	95.3	91.0	1	75.0-125			4.61	20
Calcium	1090	16400	15000	20500	0.000	382	1	75.0-125	V	J3 V	31.0	20
Chromium	109	34.9	133	133	90.5	89.7	1	75.0-125			0.676	20
Copper	109	90.3	207	224	107	123	1	75.0-125			8.09	20
Iron	1090	18400	18900	24300	44.0	540	1	75.0-125	V	J3 V	25.0	20
Lead	109	362	418	607	51.4	225	1	75.0-125	J6	J3 J5	36.9	20
Magnesium	1090	3900	4990	5260	99.6	124	1	75.0-125			5.23	20
Manganese	109	675	738	808	57.9	122	1	75.0-125	V		9.06	20
Potassium	1090	1290	2720	2440	131	105	1	75.0-125	J5		10.9	20
Selenium	109	U	102	95.5	93.9	87.7	1	75.0-125			6.82	20
Silver	21.8	0.249	21.0	20.1	95.0	91.0	1	75.0-125			4.27	20
Sodium	1090	538	1670	2030	104	137	1	75.0-125		J5	19.2	20
Zinc	109	230	317	356	80.0	116	1	75.0-125			11.6	20

Method Blank (MB)

(MB) R3731656-3 11/18/21 15:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000130	J	0.000120	0.000500
Toluene	0.000190	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.1*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*100*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3731656-1 11/18/21 12:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.05	91.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*105*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3731656-2 11/18/21 14:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0558	112	76.0-121	
Toluene	0.0500	0.0539	108	80.0-120	
Ethylbenzene	0.0500	0.0563	113	80.0-124	
Total Xylene	0.150	0.169	113	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*96.8*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*100*	*72.0-128*	

Method Blank (MB)

(MB) R3731061-3 11/17/21 05:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	0.000121	J	0.000110	0.000500
Total Xylene	0.000517	J	0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.5*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*102*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3731061-1 11/17/21 04:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0487	97.4	76.0-121	
Toluene	0.0500	0.0517	103	80.0-120	
Ethylbenzene	0.0500	0.0483	96.6	80.0-124	
Total Xylene	0.150	0.152	101	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*98.0*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*101*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3731061-2 11/17/21 04:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.38	97.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*109*	*72.0-128*	

Method Blank (MB)

(MB) R3732371-1 11/20/21 10:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.638	J	0.274	4.00
(S) o-Terphenyl	*114*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3732371-2 11/20/21 11:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	53.9	108	50.0-150	
(S) o-Terphenyl			*133*	*18.0-148*	

L1430778-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430778-02 11/20/21 13:53 • (MS) R3732371-3 11/20/21 14:05 • (MSD) R3732371-4 11/20/21 14:18

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	52.6	U	37.8	38.5	71.8	73.0	1	50.0-150			1.97	20
(S) o-Terphenyl					*86.9*	*83.4*		*18.0-148*				

Method Blank (MB)

(MB) R3732870-1 11/23/21 02:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.407	J	0.274	4.00
(S) o-Terphenyl	*81.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3732870-2 11/23/21 02:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	42.0	84.0	50.0-150	
(S) o-Terphenyl			*98.9*	*18.0-148*	

L1430708-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1430708-12 11/23/21 03:42 • (MS) R3732870-3 11/23/21 03:56 • (MSD) R3732870-4 11/23/21 04:09

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	68.5	U	52.5	49.5	76.7	72.2	1	50.0-150			5.95	20
(S) o-Terphenyl					*79.3*	*77.8*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

GLOSSARY OF TERMS

Qualifier	Description
V	The sample concentration is too high to evaluate accurate spike recoveries.

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	LA000356
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.

Billing Information:
Trident Environmental
P. O. Box 12177
Odessa TX 79768-2177

Pres Chk

Report to: **Gil Van Deventer**

Email To: **gil@trident-environmental.com**

Project Description: R360 ARTESIA LLC, LANDFARM

City/State Collected: **NM**

Please Circle: PT MT CT ET

Phone: **432-638-8740**

Client Project # **V-259-1121**

Lab Project #

Collected by (print): **Gil Van Deventer**

Site/Facility ID # **NM-1-30**

P.O. # **5241-20-00007**

Collected by (signature):

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 # **Erica McNeese 10-19-20**

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
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Fax: 615-758-5859

SDG # L1430778
F123

Acctnum:
Template:
Prelogin:
PM:
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	TPH - 8015M (Extended C6 - C36)	BTEX - 8021B	"A" Metals (Ag, As, Ba, Cd, Cr, Hg, Pb, Se)	"B" Metals (Cu, Fe, Mn, Zn)	Cations (Ca, Mg, Na, K)	Anions (Chloride, Sulfate, & Bicarbonate)	Chloride - 300.0	Remarks	Sample # (lab only)
VZ - 1	Grab	SS	3'	11-9-21	1200	1	X	X	X	X	X	X	X		-01
VZ - 2	Grab	SS	3'	11-9-21	1130	1	X	X	X	X	X	X	X		-02
VZ - 3	Grab	SS	3'	11-9-21	1115	1	X	X	X	X	X	X	X		-03
VZ - 4	Grab	SS	3'	11-9-21	1100	1	X	X	X	X	X	X	X		-04
VZ - 5	Grab	SS	4'	11-9-21	1000	1	X	X	X	X	X	X	X		-05
TZ - 5	Comp	SS	1'	11-9-21	1050	1	X						X		-06

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

Remarks:
~~Please refer to attached page for minimum reporting limits.~~

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

	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	11/11/21	3:24	
Relinquished by : (Signature)	11-12-21	6:33	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 0.1 °C Bottles Received: 6

Date: 11/12/21 Time: 11:45

If preservation required by Login: Date/Time

Hold:

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Jones, Brad A., EMNRD

From: Jones, Brad A., EMNRD
Sent: Friday, May 13, 2022 3:46 PM
To: Robert Peropat; Jacob Delos Santos
Cc: gil@trident-environmental.com
Subject: R360 Artesia LLC Landfarm - 2021 Annual Monitoring Report OCD review
Attachments: 2022 0513 NM1-30 R360 Artesia LLC 2021 Annual Monitoring Report Review.pdf

Jacob, Bobby, and Gil,

Please see the attached. OCD has completed the review of the 2021 Annual Monitoring Report. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Brad Jones

Brad A. Jones ● Environmental Scientist Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
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State of New Mexico
Energy, Minerals and Natural Resources Department

May 13, 2022

Mr. Jacob De Los Santos
R360 Artesia, LLC
4507 Carlsbad Highway
Hobbs, New Mexico 88240
jacobde@r360es.com

RE: 2021 Annual Monitoring Report Review
R360 Artesia, LLC
Permit NM1-30
Unit A (NE/4, NE/4) of Section 7, Township 17 South, Range 32 East NMPM
Lea County, New Mexico

Mr. De Los Santos:

The Oil Conservation Division (OCD) has completed its review of R360 Artesia, LLC's (R360) 2021 Annual Monitoring Report**,** dated March 8, 2022, for the landfarm, under permit NM1-30. OCD's review of the annual report has resulted in the discovery of the misinterpretation of past OCD approvals and non-compliance to the requirements of 19.15.36 NMAC when a release has been detected in the vadose zone from the required routine semi-annual monitoring. Also, R360 has not complied with the Closure conditions of existing permit NM1-30 and the closure and post-closure requirements of 19.15.36.18 NMAC to pursue closure and post-closure of the landfarm.

Section 2.0, Monitoring Program:
OCD wishes to clarify that the additional lift approvals granted by OCD for Cells 1, 2, 3, and 4 were based upon Condition 6, under the heading Landfarm Operations, of existing permit NM1-30. In accordance with the transitional provision of 19.15.36.20.A NMAC, "Existing surface waste management facilities shall comply with the financial assurance, operational, monitoring, waste acceptance and closure and post closure requirements provided in 19.15.36 NMAC, *except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception, or agreement that the division has granted in writing to the particular surface waste management facility*." Due to the existing permit condition R360 did not perform the additional lift sampling required of 19.15.36.15.D NMAC, therefore R360 did not perform analysis for all the constituents required of 19.15.36.15.F(1-5) NMAC semi-annually and did not demonstrate compliance to the treatment zone closure performance standards of 19.15.36.15.F(1-5) NMAC for Cell 1, 2, 3, and 4, as proposed in the report.

Section 3.0 Soil Sampling Procedures:
Based upon the existing permit conditions of NM1-30 and the transitional provision of 19.15.36.20.A NMAC, vadose zone "sample must be taken at two (2) to three (3) feet beneath the native ground

surface." Please ensure future vadose zone samples are obtained from 2-3 feet beneath the native ground surface.

Section 5.0 Conclusions:
In accordance with 19.15.36.15.E(2) NMAC, "The operator shall compare each (vadose zone sample) result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred." OCD wishes the clarify that the *background soil concentrations* are based upon background samples with detected concentrations and the *PQL* is based upon the detection limit utilized to determine the non-detect from background samples with mostly non-detects. The PQLs and the background soil concentrations are derived only from the facility background laboratory analytical results. R360/Trident compared the "BTEX, and TPH concentrations in the treatment zone of Cell 5, and all vadose zone samples" to "Table 1 (Closure Criteria for Soils Impacted by a Release) in accordance with NMAC 19.15.29.12.E(2) for groundwater deeper than 100 ft below ground surface." Due to providing the inappropriate comparison, R360/Trident did not document and recognize the exceedances and/or detected releases of TPH and Chlorides above the facility background and PQLs identified on Table 1 from the May and November 2021 vadose zone sampling events.

R360 must submit a major permit modification request for OCD's review and obtain OCD's approval, to apply the Part 29 Table 1 limits of 1000 mg/kg for GRO and DRO combined fractions, and 20,000 mg/kg for Chlorides to the treatment zone soils in lieu of the treatment zone closure performance standards specified in 19.15.36.15.F(3 and 4) NMAC of 500 mg/kg for GRO and DRO combined fractions, and 1,000 mg/kg for Chlorides. Pursuant to 19.15.36.7.B(9) NMAC, "Major modification means a modification of a surface waste management facility that involves an increase in the land area that the permitted surface waste management facility occupies; a change in the design capacity or nature of the permitted oil field waste stream; addition of a new treatment process; an exception to, waiver of or *change to a numerical standard provided in 19.15.36 NMAC*; or other modification that the division determines is sufficiently substantial that public notice and public participation in the application process are appropriate." This would be considered a "change to a numerical standard provided in 19.15.36 NMAC," specifically the numerical standards specified in 19.15.36.15.F(3 and 4) NMAC. A major permit modification/exception request must demonstrate the proposed alternative will provide equivalent protection of fresh water, public health, and the environment.

Compliance to the requirements of 19.15.36.15.E(5) NMAC is not recognized or demonstrated in the 2021 Annual Monitoring Report. Pursuant to 19.15.36.15.E(5) NMAC, "If vadose zone sampling results show that the concentrations of TPH, BTEX or chlorides exceed the higher of the PQL or the background soil concentrations, then the operator shall notify the division's environmental bureau of the exceedance and shall immediately collect and analyze a minimum of four randomly selected, independent samples for TPH, BTEX, chlorides and the constituents listed in Subsections A and B of 20.6.2.3103 NMAC. The operator shall submit the results of the re-sampling event and a response action plan for the division's approval within 45 days of the initial notification. The response action plan shall address changes in the landfarm's operation to prevent further contamination and, if necessary, a plan for remediating existing contamination." OCD wishes to clarify that the *additional 4 samples should be taken randomly around the location of each detected vadose zone release and demonstrated exceedance* to investigate and determine if additional constituents are associated with the detected release locations of TPH, BTEX and/or chloride from the routine semi-annual vadose zone routine monitoring. On Table 1 of the annual report, R360 documented exceedances of Chloride for Cells 1-5 from the May and November 2021 vadose zone sampling events and an exceedance of TPH for Cell 5 from the May 2021 sampling event. Instead of providing OCD the required notice, performing the required additional vadose zone monitoring, comparing the additional sampling results to the background, and submitting a

response action plan as required of 19.15.36.15.E(5) NMAC, R360 compared the routine semi-annual vadose zone results with the Table 1 of 19.15.29 NMAC. If a release is detected in the vadose zone during a routine sampling event, R360 must provide notice and implement the release response requirements of 19.15.36.15.E(5) NMAC and submit a release response action plan to OCD for review and consideration of approval.

In the future, if compliance with the additional sampling required of 19.15.36.15.E(5) NMAC coincides with a routine vadose zone sampling event, please perform each sampling event separately. The next routine vadose zone sampling event should not be performed in the same vicinity in which releases were detected from the previous routine sampling event, areas in which the additional investigation of 19.15.36.15.E(5) NMAC is required or is being performed, and/or areas that are being assessed pursuant to 19.15.29 NMAC after the additional investigation of 19.15.36.15.E(5) NMAC. The next routine vadose zone samples should be obtained from the remaining portion of the landfarm cells not subject to the investigations identified above.

No background values were provided for any of the constituents listed on Table 3, therefore OCD is unable to accept R360/Trident's conclusion "WQCC metals and major cations/anions were consistent with background concentrations."

OCD was unable to locate any written assessment regarding the detection of Chloride in the treatment zone of Cell 5 at 1760 mg/kg, as identified in the laboratory analytical results from Pace Analytical. Table 1 of the annual report mis-identifies the detected value as 1670 mg/kg. OCD is bringing this to R360's attention since the Chloride concentration exceeds the treatment zone closure performance standard of 1,000 mg/kg as required of 19.15.36.15.F(4) NMAC. This will impact the closure of Cell 5 if not addressed and resolved.

Table 1:
R360/Trident did not report the BTEX constituents results as identified in the Pace Analytical report. In the Glossary of Terms at the end of the Pace Analytical report, "U" is defined as "Not detected at the Sample Detection Limit." Table 1 identifies all the vadose zone monitoring results for Benzene, Toluene, Ethylbenzene, and Total Xylene as non-detects at <0.001 mg/kg. The Pace Analytical report identifies that Benzene was assessed with a Sample Detection Limit ranging from 0.000122 to 0.000129 mg/kg, Toluene was assessed with a Sample Detection Limit ranging from 0.000152 to 0.000161 mg/kg, Ethylbenzene was assessed with a Sample Detection Limit ranging from 0.000112 to 0.000118 mg/kg, and Total Xylene was assessed with a Sample Detection Limit ranging from 0.000466 to 0.00094 mg/kg. The J-flag concentration for Benzene is not recognized for Cell 3. The J-flag concentrations for Toluene are not recognized for Cells 4 and 5. The J-flag concentrations for Ethylbenzene are not recognized for Cells 1-5. The J-flag concentrations for Total Xylene are not recognized for Cells 1, 2, 3, and 5.

A note at the bottom of the page states "Background and PQL data based on 12 background samples collected on February 21, 2017." As clarified at the beginning of this review letter regarding the transitional provision of 19.15.36.20.A NMAC, "Existing surface waste management facilities shall comply with the financial assurance, operational, monitoring, waste acceptance and closure and post closure requirements provided in 19.15.36 NMAC, *except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility*." OCD has been unable to locate an approval granted in writing for the use of the " Background and PQL data based on 12 background samples collected on February 21, 2017." Please provide a copy of OCD's written approval of the use of the background and PQL values and the R360 request that OCD's decision was based upon so that OCD

can update the administrative record and document the written approval. If OCD did not approve the background and PQL values, then submit a facility background demonstration for OCD's review and consideration of approval for use.

Table 3:
No background values were provided for any of the constituents listed on Table 3, therefore OCD is unable to accept R360/Trident's conclusion "WQCC metals and major cations/anions were consistent with background concentrations."

Closure:
In accordance with Condition 2, under the heading of Closure of existing permit NM1-030, *A closure plan to include the following procedures must be submitted to the OCD Santa Fe office for approval:* a) When the facility is to be closed no new material will be accepted; b) Existing landfarm soils will be remediated until they meet the OCD standards in effect at the time of closure; c) The soils beneath the landfarm will be characterized as to total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) content to determine potential migration of contamination; d) Contaminated soils exceeding OCD closure standards for the site will be removed or remediated; e) The area will be contoured, seeded with native grasses, and allowed to return to its natural state. If the landowner desires to keep existing structures, berms, and fences for future alternative uses the structures may be left in place; and f) Closure will be pursuant to all OCD requirements in effect at the time of closure, and any other applicable local, state and/or federal regulations."

Pursuant to 19.15.36.18.A(5) NMAC, "Closure shall proceed in accordance *with the approved closure and post closure plan and schedule* and modifications or additional requirements the division imposes." OCD has no record of R360 submitting a closure and post-closure care plan and/or schedule for review. To be approved to pursue closure and post-closure, R360 must comply with the existing closure permit conditions of permit NM1-30 and the closure and post-closure requirements of 19.15.36.18 NMAC by providing notice and submitting a closure and post closure plan and a proposed schedule for closure for OCD's review and consideration of approval. This will ensure that the correct constituents required of 19.15.36.15.F(5) NMAC are analyzed and assessed for closure. Submit the closure and post closure plan and proposed schedule as a stand-alone separate request through OCD Permitting as a "Non-Fee SWMF Submittal."

If there are any questions, please do not hesitate to contact me at (505) 469-7486 or brad.a.jones@state.nm.us.

Respectfully,

Brad A. Jones
Environmental Specialist

Cc: Gilbert J. Van Deventer, Trident Environmental, gil@trident-environmental.com

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
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CONDITIONS

Action 88857

CONDITIONS

Operator:	OGRID:
R360 PERMIAN BASIN, LLC 4507 Carlsbad Highway Hobbs, NM 88240	289936
	Action Number: 88857
	Action Type: [C-137] Non-Fee SWMF Submittal (SWMF NON-FEE SUBMITTAL)

CONDITIONS

Created By	Condition	Condition Date
bjones	OCD emailed the review to Robert Peropat and Jacob De Los Santos (R360) and Gil Van Deventer (Trident) on May 13, 2022. Please see the OCD's Response attached to the bottom of the report..	5/13/2022