➤ Interim Site Characterization Report / 34328 SPLP Twin Oaks-Newark 14-inch Diameter Pipeline Release September 2, 2025

### Appendix N

Downhole Packer Test Report and Packer and Pump Test Report



➤ Interim Site Characterization Report / 34328 SPLP Twin Oaks-Newark 14-inch Diameter Pipeline Release September 2, 2025

### Appendix N.1

Downhole Packer Test Report 108 Spencer Road May 7, 2025 Version 1



Sunoco Pipeline LP

## Downhole Packer Test Report

108 Spencer Road
Upper Makefield Township, Bucks County, PA

May 7, 2025

Version 1





#### **Downhole Packer Test Report**

108 Spencer Rd. Upper Makefield Township, Bucks County, PA

Prepared for: Sunoco Pipeline LP 100 Green Street Marcus Hook, PA 19061

Prepared by: Groundwater & Environmental Services, Inc. 410 Eagleview Blvd., Suite 110 Exton, PA 19341 TEL: 800-426-9871 www.gesonline.com

Date:

May 7, 2025

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### **Acronyms**

**EDC** Ethylene dichloride EDB Ethylene dibromide ft bgs feet below grade surface ft below TOC feet below top of casing

ft H<sub>2</sub>O feet of water

**GES** Groundwater & Environmental Services, Inc.

gallons per minute gpm

gpm/ft galllons per minute per foot gallons per day per foot gpd/ft **MTBE** Methyl tert-butyl ether

MSC Medium Specific Concentration

P-W Parratt-Wolff

Τ

Pennsylvania Department of Environmental Protection PADEP

SPLP Sunoco Pipeline L.P.

Transmissivity tVOC Total Volatile Organic Compounds

VOC Volatile Organic Compound

μg/L micrograms per liter



#### 1 Introduction

Groundwater & Environmental Services, Inc., (GES), on behalf of Sunoco Pipeline LP (SPLP), has conducted packer testing in one 6-inch diameter, inactive residential supply well located at 108 Spencer Road, Washington Crossing, Pennsylvania. The supply well became inactive when the pump was removed from the well on February 17, 2025. The packer testing was performed from March 11 to 17, 2025. A **Local Area Map** is attached as **Figure 1**.

The objectives of packer testing at the 108 Spencer Road inactive supply well were to:

- Isolate nine (9) targeted fracture zones within the open borehole portion of the well which
  were identified during a downhole geophysical investigation conducted by Rettew on
  February 17 and 18, 2025. A copy of the Rettew Borehole Logging Survey report for 108
  Spencer Road is included as Appendix A.
- Conduct pumping (and recovery) stages within each target zone to purge the interval and to derive aquifer parameters such as specific capacity and transmissivity.
- Collect discrete water quality measurements and groundwater samples for laboratory analysis from each of the targeted zones.

By isolating and testing predetermined zones within the open borehole well, GES sought to identify hydraulically active fracture and preferential flow features which would aid in the development of a conceptual site model (CSM) and assist with the selection and performance of remedial options.

### 2 Field Event and Procedural Summary

Beginning on March 11, 2025, Parratt-Wolff, Inc. (P-W) a PA-licensed drilling firm, was subcontracted and supervised by GES to configure and install a packer assembly at predetermined targeted test zones, provide and maintain an electric submersible pump for operation within each isolated test zone, configure three downhole pressure transducers within the packer assembly to monitor pressure heads above; below and within each test zone; and to lower, inflate and maintain the packer assembly at each subsequent test zone.

The targeted zones for the packer test, as determined from the February 2025 Rettew downhole geophysical survey, were as follows:

- Zone 1 = Bottom of casing (24.8 ft below ground surface [bgs]) to 68 ft bgs<sup>A</sup>
- Zone 2 = 100 110 ft bgs, effective: 99 to 111 ft bgs<sup>B</sup>
- Zone 3 = 120 130 ft bgs, effective: 119 131 ft bgs<sup>B</sup>
- Zone 4 = 155 165 ft bgs, effective: 154 166 ft bgs<sup>B</sup>
- Zone 5 = 175 185 ft bgs, effective: 174 186 ft bgs<sup>B</sup>
- Zone 6 = 237 -247 ft bgs, effective 236 248 ft bgs<sup>B</sup>
- Zone 7 = 255 265 ft bgs, effective 254 266 ft bgs<sup>B</sup>



- Zone 8 = 300 310 ft bgs, effective 299 311 ft bgs<sup>B</sup>
- Zone 9 =  $424 \text{ ft} 460 \text{ ft bgs (bottom of well)}^A$ 
  - <sup>A</sup> = Single packer configuration test interval as noted.
  - <sup>B</sup> = Double packer configuration effective test interval reflects a fixed 12.17 ft distance between bottom of top packer and top of bottom packer.

During the packer test event, GES was responsible to program, monitor and download the pressure transducers, conduct interval purging, record water quality measurements and pumping flow rates, and collect representative groundwater samples from each discrete test zone. GES also operated a high-pressure bladder pump to extract fluids from Zones 8 and 9, which were at depths beyond the operating capacity of the electric submersible pump.

A schematic drawing of the double packer assembly similar to what was utilized for the packer test event is included in **Appendix B**.

The top and central (pumping zone) transducers utilized for the tests were vented to the atmosphere and therefore no atmospheric correction was required. The bottom transducer, which remained active through the entirety of the multi-day packer test event, was unvented. The function of the bottom transducer was to evaluate leakage and/or hydraulic change (communication with the pumped interval) below the bottom packer; therefore, the bottom transducer data was not atmospherically corrected but provides relative data adequate to evaluate lower packer leakage or communication.

At the beginning of the packer test event (March 11, 2025), a static depth-to-water was measured in the test well at 47.83 feet below top-of-casing (ft below TOC), with a depth to product measured at 47.82 ft below TOC, indicating a 0.01 inch thickness of product. Upon initial packer setup and inflation within the Zone 1 interval (24.8 to 68 ft bgs), it was determined that the (single) packer was not inflating properly. Subsequently, the packer was removed and the nitrogen inflation line was replaced with testing resuming on the following day, March 12, 2025. There were no additional packer inflation or mechanical issues noted during the remainder of the tests conducted at the well through March 17, 2025.

A summary of pump test data for each test zone is summarized in **Table 1** which includes pumping duration, total gallons pumped, average pump rate, calculated specific capacity, transmissivity, and observed pressure head changes recorded by the transducers positioned above ("top"), within ("central"), and below ("bottom") the isolated test intervals. Graphical plots of pressure head changes recorded from the top, central and bottom transducers, logged during each of the packer zone tests, are provided in **Appendix C**.

All groundwater generated during the packer test event was temporarily stored on-site in non-hazardous labeled 55-gaalllon drums and was removed offsite for proper disposal, via vacuum tanker extraction, by Lewis Environmental. Bill of Lading documentation related to water disposal is provided as **Appendix D**.



### 3 Groundwater Sample Collection and Laboratory Analysis

The groundwater samples from each target zone were collected utilizing a Grundfos Redi-Flow electric submersible pump for Zones 1 through 7 and a GeoTech Portable Bladder pump for Zones 8 and 9. A calibrated Horiba U-22 multi parameter meter with in-line flow cell assembly was used for water quality measurement collection during purging and sampling procedures.

During zone interval sample collection, each groundwater sample was placed into lab-provided bottleware, and immediately stored on ice. The samples were shipped, under chain-of-custody documentation to Pace Analytical with a requested analysis for volatile organic compounds (VOCs) (PA leaded gasoline / jet fuel parameter list) via USEPA Method 524.2, 1,2-Dibromomethane (EDB) via USEPA Method 504.1, and dissolved lead (field filtered) via USEPA Method 200.8. A trip blank and a duplicate sample were collected during the event. Water quality data sheets recorded during purge and sampling activities at each of the nine test zones are provided as **Appendix E**.

A summary of groundwater analytical results for each tested zone is provided as **Table 2**. The corresponding laboratory analytical report, with chain-custody documentation, is provided as **Appendix F**.

#### 4 Observations and Conclusions

Review of recorded field data (**Table 1**) and transducer plots (**Appendix C**) from the packer test indicate the following:

- Total pumping time, for each of the nine tests zones, ranged from **17 minutes** (Zone 2) to **74 minutes** (Zone 9), with an average pumping time of **39 minutes** per zone.
- Overall drawdown (change in pressure head) recorded from the central transducer in each zone ranged from **8.6 ft of water (ft. H<sub>2</sub>O)** (Zone 9) to **49.5 ft. H<sub>2</sub>O** (Zone 7).
  - In general, drawdown during each test increased with progressively deeper zones, except for the last interval (Zone 9).
- Pumping rates were calculated as an overall average rate, with the total volume of water pumped divided by the total pumping duration, noting that total water volumes for Zones 2, 4 and 9 were estimated.
  - Average pumping rates varied from 0.15 to 0.50 gpm with an average rate of 0.27 gpm.
  - Several tests required periodic increase to the pumping rate to compensate for diminishing flow (likely a function of decreasing head).
- Specific capacity values were calculated for each zone by dividing the average pumping rate with the pressure change ("draw down") observed in the central transducer (Table 1).
   Specific capacity values ranged from 0.003 gpm/ft (Zone 6) to 0.032 gpm/ft (Zone 1) which are very low but not uncommon for a bedrock aquifer with poor primary porosity.



- Estimated transmissivity (T) values for each zone, whereby the "T" = 2000 x specific capacity (gpm/ft), for a confined aquifer (Driscoll 1986), ranged from 6.7 gpd/ft (Zone 6) to 65 gpd/ft (Zone 1).
- Because the average pumping rate was estimated for many zone tests, the calculated specific capacity and transmissivity values should also be considered estimated.
- Total drawdown for top transducers ranged from -0.89 ft H<sub>2</sub>O (Zone 6) to 7.9 ft H<sub>2</sub>O (Zone 9), with the average drawdown in the top transducers at 0.95 ft H<sub>2</sub>O. With exception to Zone 9, the minimal drawdown exhibited in the top transducer, for tests in Zones 2 through 8, indicate a good top packer seal.
- Total drawdown for bottom transducers ranged from 0.16 ft H₂O (Zone 2) to 49.1 ft H₂O (Zone 7), with the average drawdown in the bottom transducers at 13.1 ft H₂O. Consistent drawdown observed in the bottom packer indicates poor bottom packer seal performance particularly for Zones 6, 7 and 8. However, this drawdown may also be attributed to flow around the bottom packer via steeply dipping fracture planes that intersect the borehole above and below the bottom packer.
  - As an unvented type of transducer, data from the bottom transducer was not able to be viewed in real time nor downloaded and reviewed at the end of each test. Due to time constraints, the packer assembly for each zone, with exception to Zones 1 and 9 (configured as single packers) was not completely removed from and reinserted into the borehole between tests, which would have allowed for the bottom transducer to be accessed and downloaded.
  - Total drawdown in the bottom transducer generally increased with each successively deeper test interval, suggesting a decrease in lower packer seal integrity with increasing head.
  - Seal performance for the bottom packer may be attributable to a mechanical compromise of the bottom packer, exacerbated through the course of testing however:
    - no loss of pressure from the bottom packer during testing was identified by the drilling crew responsible for maintaining bladder inflation.
    - poor seals may also relate to highly inclined structural features observed during downhole geophysics (Appendix A.)

Review of analytical data (Table 2) from the packer test indicates the following;

- 10 of the 12 total analyzed constituents were detected among the nine zone samples.
  - EDB and dissolved Lead were non-detect in all samples.
- Benzene, exceeded the applicable PADEP Residential Medium Specific Concentration (MSC) screening level of 5 micrograms per liter (μg/L) in all nine zone samples.



- Benzene concentrations ranged from 7.4 μg/L (Zone 2) to 17 μg/L (Zone 1) and showed minimal fluctuation in concentration overall.
- The remaining nine detected constituents, including toluene, ethylbenzene, total xylenes, methyl tert-butyl ether (MTBE), isopropyl benzene, naphthalene, 1,2,4 trimethylbenzene, 1,3,5 trimethylbenzene, and 1,2-dichloroethane (ethylene dichloride or EDC) were below applicable PADEP Residential MSC screening levels for groundwater.
- Summation and ranking of total volatile organic compounds (tVOCs) detected in each zone sample, from highest to lowest concentration, are as follows:
  - Zone 1, tVOCs = 469.3 μg/L
  - Zone 4, tVOCs= 290.6 μg/L
  - Zone 3, tVOCs= 283.5 μg/L
  - Zone 5, tVOCs= 269.3.6 μg/L
  - Zone 6, tVOCs= 256.5 μg/L
  - Zone 2, tVOCs= 212.3 μg/L
  - Zone 7, tVOCs= 192.1 μg/L
  - Zone 8, tVOCs= 86.3 μg/L
  - Zone 9, tVOCs= 40.8 μg/L

The tVOC concentrations are highest in the shallowest Zone 1 interval (28.4-68 ft bgs) and gradually reduce with depth. This down-borehole reduction in tVOC concentration generally corresponds with the increased maximum drawdown observed in the central transducers for each zone test. While it is acknowledged that the bottom packer drawdown also increased with depth, historical supply well pumping from a depth of approximately 230 feet and a strong static downward vertical gradient (**Table 3**) indicate that vertical mixing of water from a shallow contamination source, would result in VOC concentrations at depth.

### **Figure**



### **Tables**

### Table 1 Packer Test Data Summary

| Zone   | Test Interval<br>(ft. bgs) | Effective Test<br>Zone Interval<br>(ft. bgs) | Test Date | Sample Time | Pumping<br>Duration<br>(mins.) | Gallons<br>Pumped  | Drawdown<br>Central (Pumping)<br>Transducer<br>(ft. H <sub>2</sub> O) <sup>(4)</sup> | Average<br>Pump Rate<br>(gpm) | Specific<br>Capacity<br>(gpm/ft) | Trans-<br>missivity<br>(gpd/ft) | Drawdown<br>Top<br>Transducer<br>(ft. H <sub>2</sub> O) <sup>(4)</sup> | Drawdown<br>Bottom Transducer<br>(ft. H <sup>2</sup> O) <sup>(4)</sup> | Comments  |  |
|--------|----------------------------|--|-----------|-------------|--------------------------------|--------------------|--|-------------------------------|----------------------------------|---------------------------------|--|--|---|--|
| Zone 1 | 28.4-68                    | 28.4 - 68 <sup>(1)</sup>                     | 3/12/2025 | 11:35 AM    | 45                             | 15.5               | 10.6   | 0.34                          | 0.032                            | 65.0                            | -  |  | Single Packer configuration, no top transducer. Slight oily sheen on discharge.   |  |
| Zone 2 | 100-110                    | 99 - 111 <sup>(2)</sup>                      | 3/12/2025 | 2:35 PM     | 17                             | 4.0 <sup>(3)</sup> | 14.8   | 0.24                          | 0.016                            | 31.8                            | 0.31   | 0.16   | No flow at elapsed time ~ 9 mins. Pump removed and tubing reconected/tightended. Clear discharge.                           |  |
| Zone 3 | 120-130                    | 119 - 131 <sup>(2)</sup>                     | 3/12/2025 | 4:05 PM     | 18                             | 5.0                | 16.8   | 0.28                          | 0.017                            | 33.2                            | -0.07 (recharge)   | 0.29   | Pump rate was increased prior to end of test to stress zone.  |  |
| Zone 4 | 155-165                    | 154 - 166 <sup>(2)</sup>                     | 3/13/2025 | 10:40 AM    | 24                             | 7.0 <sup>(3)</sup> | 38.3   | 0.29                          | 0.008                            | 15.2                            | 0.17   | 2.4  | Pump rate was increased after sampling to stress zone.  |  |
| Zone 5 | 175-185                    | 174 - 186 <sup>(2)</sup>                     | 3/13/2025 | 12:45 PM    | 41                             | 10                 | 41.1   | 0.24                          | 0.006                            | 11.9                            | -0.38 (recharge)   | 1.4  | Rate was increased twice before sample collection   |  |
| Zone 6 | 237-247                    | 236 - 248 <sup>(2)</sup>                     | 3/13/2025 | 3:30 PM     | 41                             | 6.0                | 43.9   | 0.15                          | 0.003                            | 6.7                             | -0.89 (recharge)   |  | Pump was shut off mid-test, allowed to recover for 4 mins, then resumed for addn. purge and sampled                         |  |
| Zone 7 | 255-265                    | 254 - 266 <sup>(2)</sup>                     | 3/14/2025 | 10:56 AM    | 29                             | 14.5               | 49.5   | 0.50                          | 0.010                            | 20.2                            | 0.63   |  | Pump was shut off mid-test, allowed to recover for 7 mins, then resumed for addn. purge and sampled                         |  |
| Zone 8 | 300-310                    | 299 -311 <sup>(2)</sup>                      | 3/14/2025 | 1:40 PM     | 64                             | 11                 | 37.9   | 0.17                          | 0.005                            | 9.1                             | -0.11 (recharge)   |  | Several rate changes related to adjustment of high presurre bladder pump that was used for this test interval (and Zone 9). |  |
| Zone 9 | 424-460                    | 424-460 <sup>(5)</sup>                       | 3/17/2025 | 12:43 PM    | 74                             | 16 <sup>(3)</sup>  | 8.6  | 0.22                          | 0.025                            | 50.1                            | 7.9  | -  | Single Packer configuration, no bottom transducer   |  |

#### Notes:

Drawdown = Change in Pressure Head (ft of H<sub>2</sub>O)

ft bgs = Feet below grade surface

ft of H<sub>2</sub>O = feet of water

gpm = Gallons per minute

gpm/ft = Gallons per minute per foot

gpd/ft = Gallons per day per foot

- (1) Zone 1 interval top (28.4') is base of steel casing
- (2) Fixed packer spread is 12 ft, 2 inches
- (3) Est. total pump vol. for Zone 2 , Zone 4, Zone 9
- (4) Pressure change in "Top", "Central" and "Bottom" transducers measured during pumping period
- (5) Zone 9 bottom (460') is base of well borehole



Table 2
Packer Test Analytical Summary

| Location   | Sample<br>Interval<br>(ft bgs) | Date           | Benzene<br>(μg/L) | Toluene<br>(μg/L) | Ethyl-<br>benzene<br>(µg/L) | Total Xylenes<br>(μg/L) | MTBE<br>(μg/L) | Isopropyl<br>Benzene<br>(µg/L) |
|------------|--------------------------------|----------------|-------------------|-------------------|-----------------------------|-------------------------|----------------|--------------------------------|
| DEP MSCs f | for a Residential              | , Used Aquifer | 5                 | 1,000             | 700                         | 10,000                  | 20             | 840                            |
|            | 24.8-68                        | 03/12/2025     | 17                | 29                | 2.9                         | 150                     | 0.17 J         | 1.8                            |
|            | (Zone 1)                       |                |                   |                   |                             |                         |                |                                |
|            | 100-110                        | 03/12/2025     | 7.4               | 14                | 0.97                        | 58                      | 0.17 J         | 0.62                           |
|            | (Zone 2)                       |                |                   |                   |                             |                         |                |                                |
|            | 120-130                        | 03/12/2025     | 11                | 24                | 1.3                         | 65                      | 0.15 J         | 0.78                           |
|            | (Zone 3)                       |                |                   |                   |                             |                         |                |                                |
|            | 155-165                        | 03/13/2025     | 14                | 25                | 1.8                         | 55                      | 0.18 J         | 1.2                            |
| 108        | (Zone 4)                       |                |                   |                   |                             |                         |                |                                |
| SPENCER    | 175-185                        | 03/13/2025     | 14                | 23                | 1.8                         | 47                      | 0.17 J         | 1.0                            |
| ROAD       | (Zone 5)                       |                |                   |                   |                             |                         |                |                                |
| NOAD       | 237-247                        | 03/13/2025     | 13                | 21                | 1.9                         | 35                      | 0.13 J         | 1.1                            |
|            | (Zone 6)                       |                |                   |                   |                             |                         |                |                                |
|            | 255-265                        | 03/14/2025     | 10                | 33                | 1.1                         | 26                      | ND<0.13        | 0.67                           |
|            | (Zone 7)                       |                |                   |                   |                             |                         |                |                                |
|            | 300-310                        | 03/14/2025     | 12                | 15                | 0.54                        | 12                      | ND<0.13        | 0.50                           |
|            | (Zone 8)                       |                |                   |                   |                             |                         |                |                                |
|            | 424-460                        | 03/17/2025     | 14                | 1.5               | 0.14 J                      | 6.3                     | ND<0.13        | 0.49 J                         |
| İ          | (Zone 9)                       |                |                   |                   |                             |                         |                |                                |



Table 2
Packer Test Analytical Summary

| Location        | Sample<br>Interval<br>(ft bgs) | Date           | Naphthalene<br>(μg/L) | 1,2,4-<br>Trimethyl-<br>benzene<br>(µg/L) | 1,3,5-<br>Trimethyl-<br>benzene<br>(µg/L) | 1,2-Dichloro-<br>ethane<br>(EDC)<br>(µg/L) | 1,2 Dibromo-<br>ethane<br>(EDB)<br>(µg/L) | Lead<br>(µg/L) | Total VOCs |
|-----------------|--------------------------------|----------------|-----------------------|---|---|--|---|----------------|------------|
| DEP MSCs f      | or a Residential               | , Used Aquifer | 100                   | 130                                       | 130                                       | 5  | 0.05                                      | 5              |            |
|                 | 24.8-68                        | 03/12/2025     | 48                    | 100                                       | 120                                       | 0.46 J                                     | ND<0.005                                  | ND<0.3         | 469.3      |
|                 | (Zone 1)                       |                |                       |   |   |  |   |                |            |
|                 | 100-110                        | 03/12/2025     | 27                    | 46  | 58  | 0.18 J                                     | ND<0.005                                  | ND<0.3         | 212.3      |
|                 | (Zone 2)                       |                |                       |   |   |  |   |                |            |
|                 | 120-130                        | 03/12/2025     | 34                    | 67  | 80  | 0.28 J                                     | ND<0.005                                  | ND<0.3         | 283.5      |
|                 | (Zone 3)                       |                |                       |   |   |  |   |                |            |
|                 | 155-165                        | 03/13/2025     | 44                    | 73  | 76  | 0.43 J                                     | ND<0.005                                  | ND<0.3         | 290.6      |
| 400             | (Zone 4)                       |                |                       |   |   |  |   |                |            |
| 108             | 175-185                        | 03/13/2025     | 42                    | 69  | 71  | 0.35 J                                     | ND<0.005                                  | ND<0.3         | 269.3      |
| SPENCER<br>ROAD | (Zone 5)                       |                |                       |   |   |  |   |                |            |
| ROAD            | 237-247                        | 03/13/2025     | 39                    | 67  | 78  | 0.35 J                                     | ND<0.005                                  | ND<0.3         | 256.5      |
|                 | (Zone 6)                       |                |                       |   |   |  |   |                |            |
|                 | 255-265                        | 03/14/2025     | 25                    | 46  | 50  | ND<0.15                                    | ND<0.005                                  | ND<0.3         | 192.1      |
|                 | (Zone 7)                       |                |                       |   |   |  |   |                |            |
|                 | 300-310                        | 03/14/2025     | 15                    | 15  | 16  | ND<0.15                                    | ND<0.005                                  | ND<0.3         | 86.3       |
|                 | (Zone 8)                       |                |                       |   |   |  |   |                |            |
|                 | 424-460                        | 03/17/2025     | 12                    | 3.0                                       | 3.1                                       | ND<0.15                                    | ND<0.005                                  | ND<0.3         | 40.8       |
|                 | (Zone 9)                       |                |                       |   |   |  |   |                |            |

#### Notes:

ft bgs = Feet Below Grade Surface

J = Approximate value; result is < Reporting Limit (RL) and ≥ Method Detection Limit (MDL)

DEP = Pennsylvania Department of Environmental Protection

MSCs = Medium-Specific Concentrations per 25 Pa. Code Chapter 250

μg/L = Micrograms/Liter

ND<# = Not Detected (# is MDL)

Volatiles Analyzed via EPA Method 524.2

Bold = Exceeds the DEP MSC for a Used, Residential Aquifer < 2,500 mg/L total dissolved solids



# Table 3 Vertical Gradient Analysis Packer Testing - Mar. 11 -17, 2025

| Test<br>Interval | Depth Range<br>(ft bgs) | Pre-pumping<br>Static Head<br>(ft) | Vertical<br>Gradient |  |  |
|------------------|-------------------------|------------------------------------|----------------------|--|--|
| 1                | 28.4 - 68               | 24.10                              | NA                   |  |  |
| 2                | 99 - 111                | 61.71                              | 0.662 down           |  |  |
| 3                | 119-131                 | 77.01                              | 0.765 down           |  |  |
| 4                | 154 - 166               | 101.78                             | 0.708 down           |  |  |
| 5                | 174 - 186               | 127.85                             | 1.303 down           |  |  |
| 6                | 236 - 248               | 194.14                             | 1.069 down           |  |  |
| 7                | 254 - 266               | 208.71                             | 0.809 down           |  |  |
| 8                | 299 - 311               | 255.12                             | 1.031 down           |  |  |
| 9                | 424 - 460               | 366.49                             | 0.813 down           |  |  |

#### Notes:

Vertical gradients calculated using the mid-point to mid-point method following the USEPA on line calculator tool: https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/vgradient02.html

"Static" heads may not be 100% accurate as the packer testing work scope did not include waiting for conditions to return to static before initiaiting pumping in follow-on test intervals.

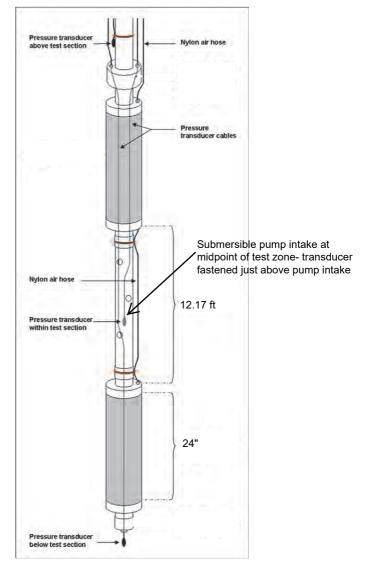
ft bgs = feet below grade surface



### Appendix A – Rettew Borehole Logging Survey

Note: included in Appendix B

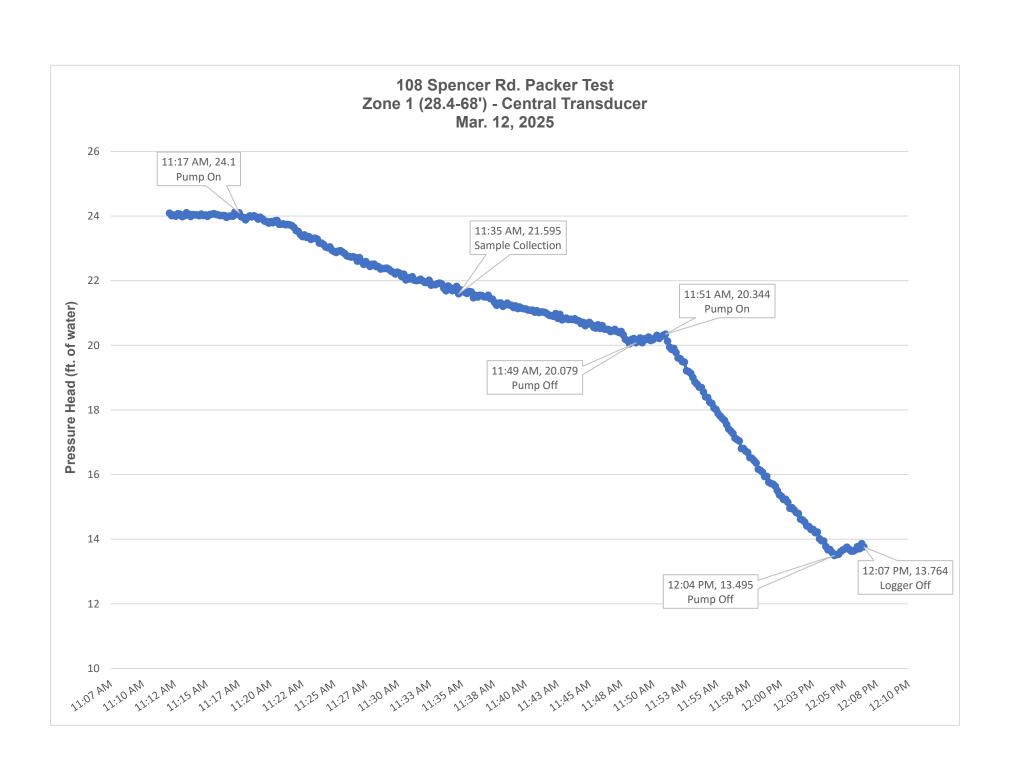
### Appendix B – Schematic Drawing – Packer Assembly

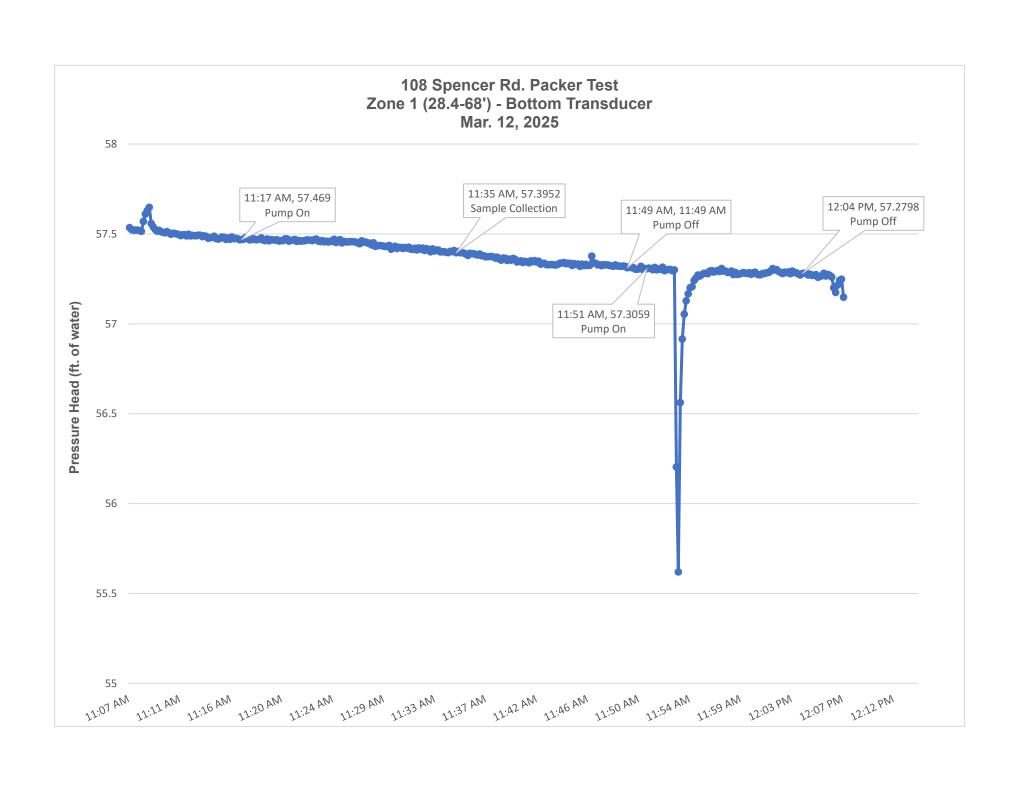


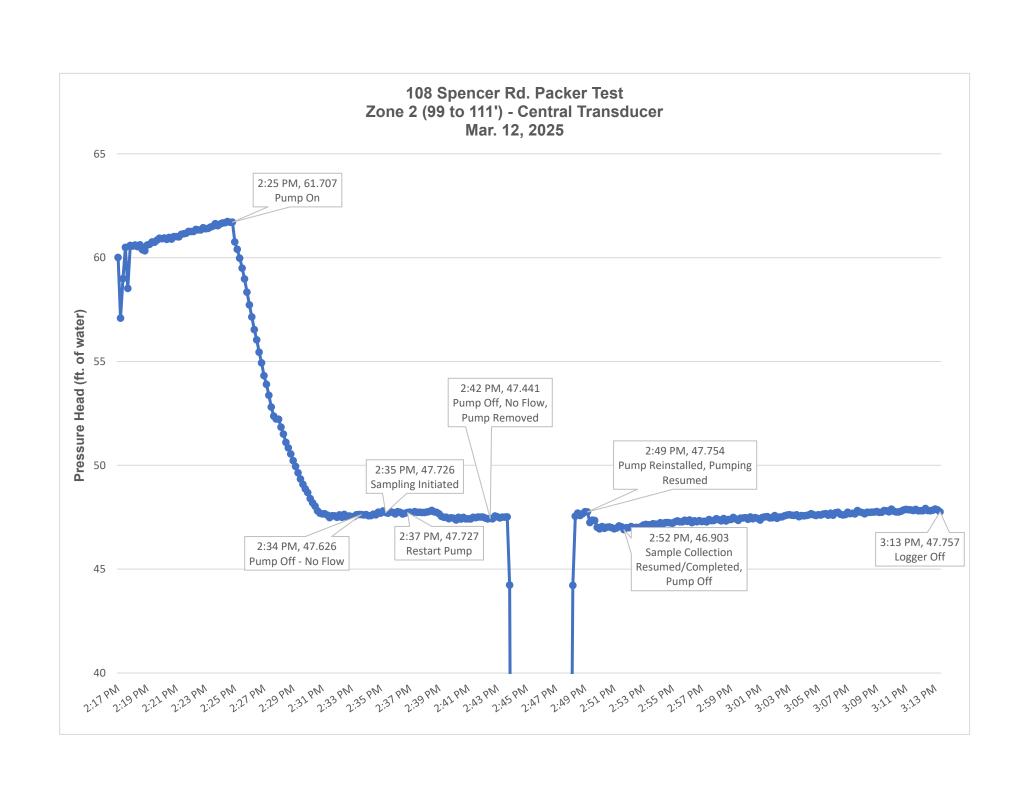
### Schematic of Double Packer Assembly

Adapted from: https://www.soils.co.uk/images/downloads/SSL-Packer-Testing-service.pdf

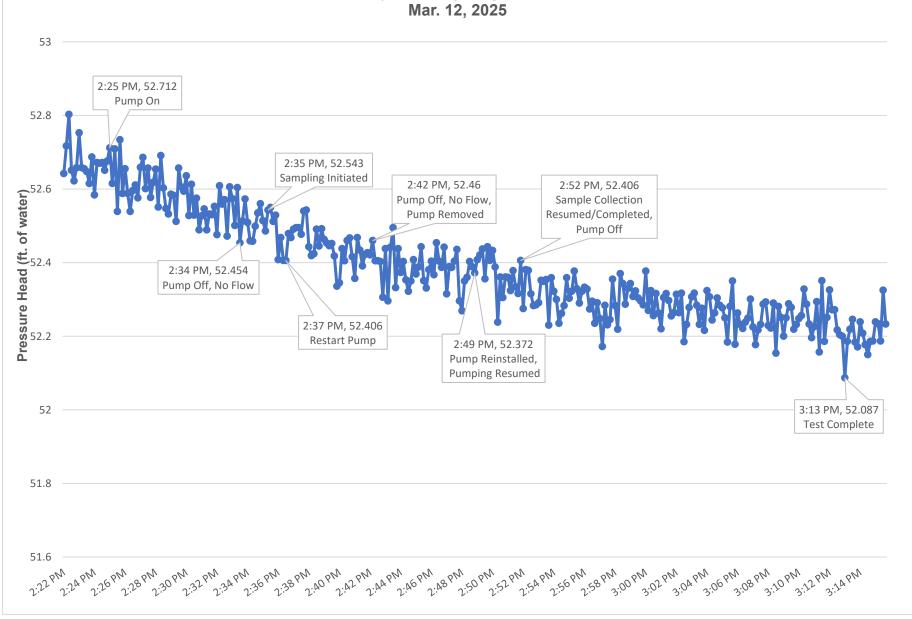
### **Appendix C – Transducer Drawdown Plots**

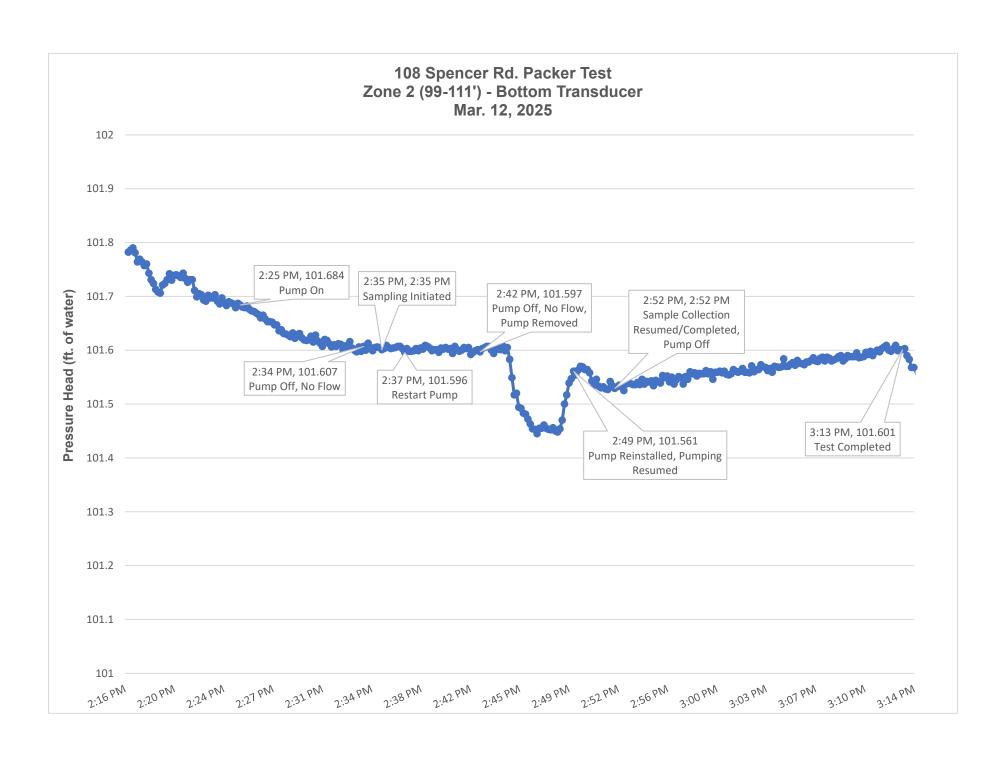


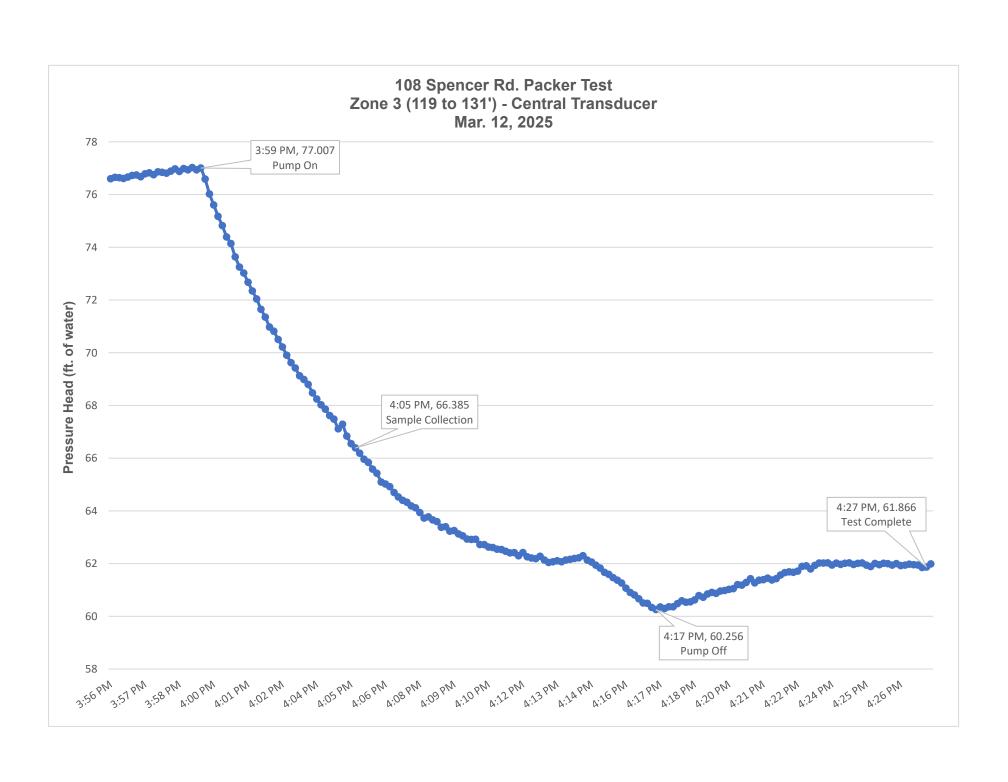


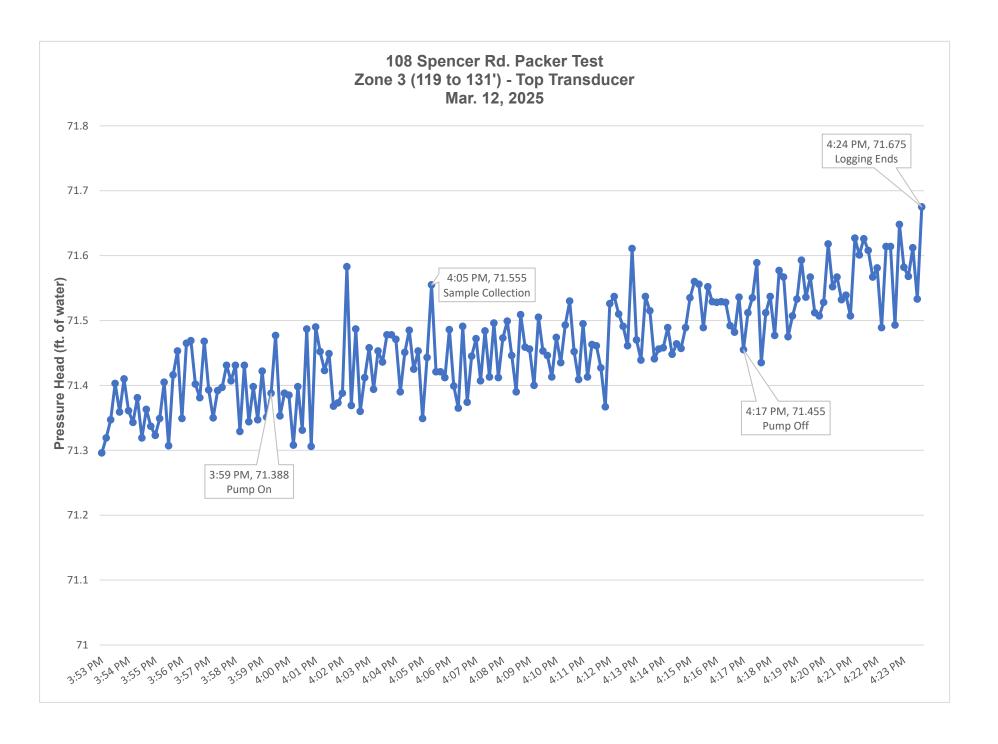


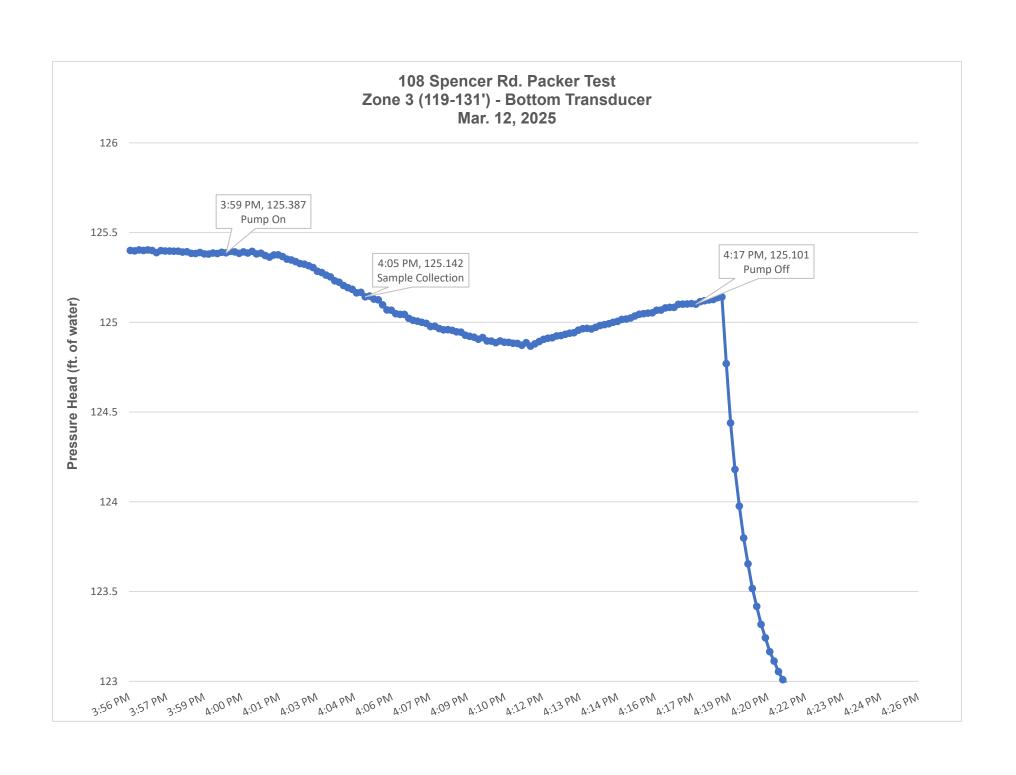


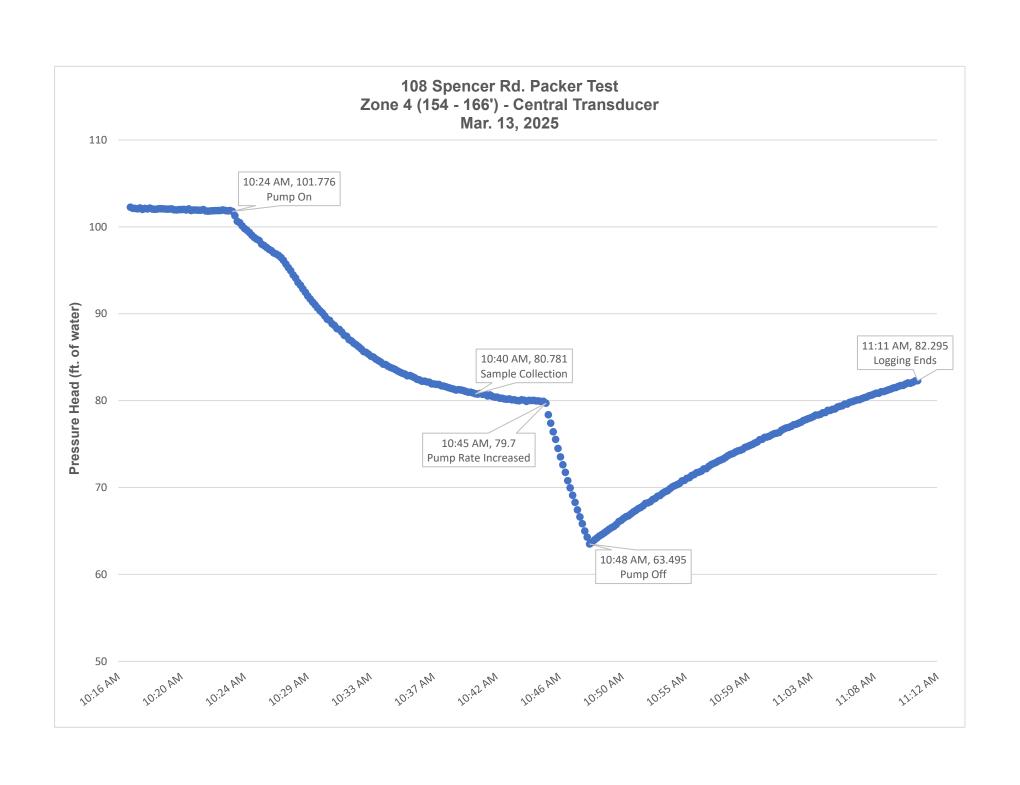


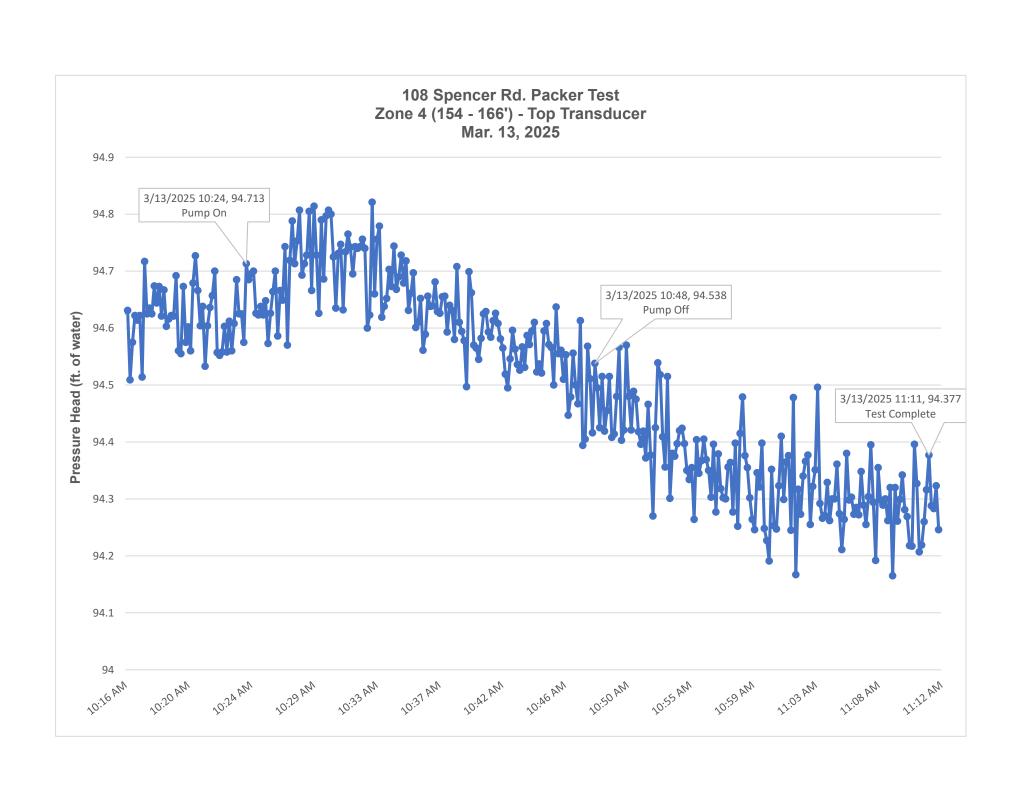


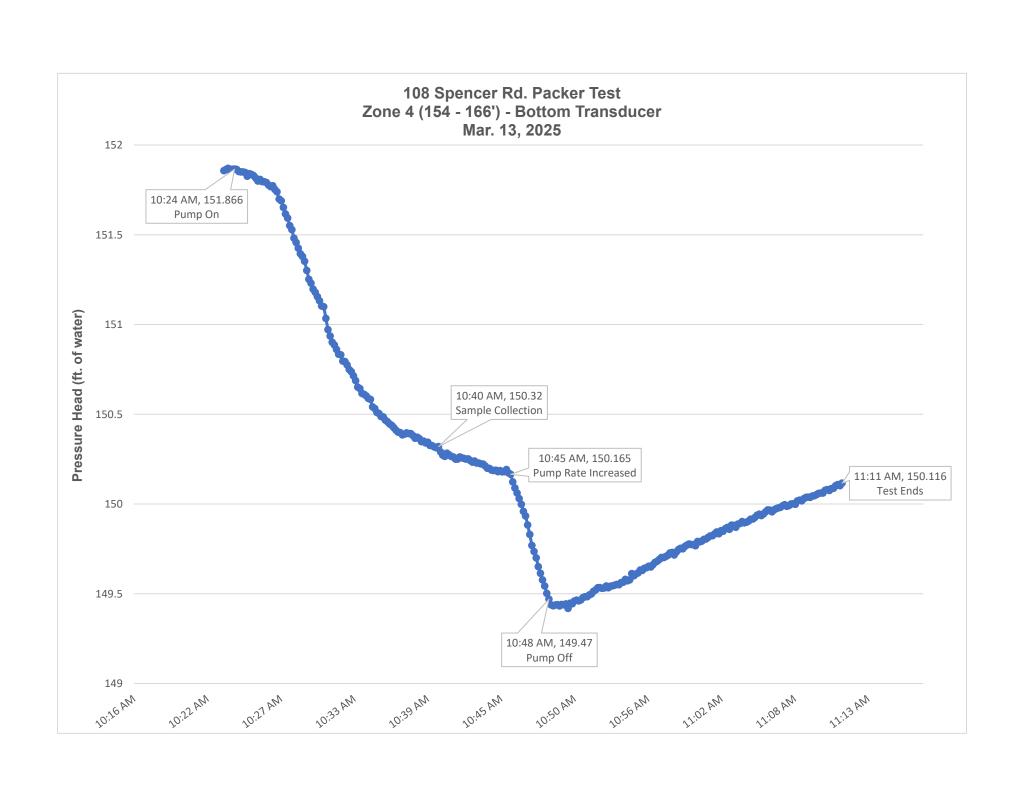


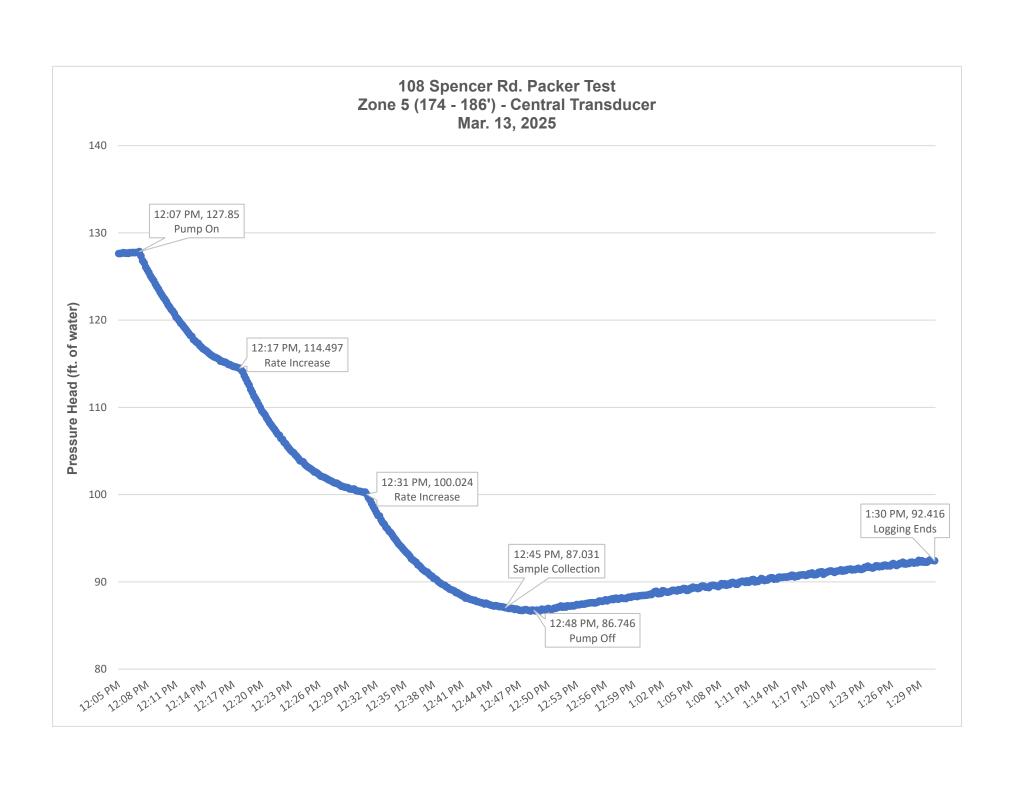


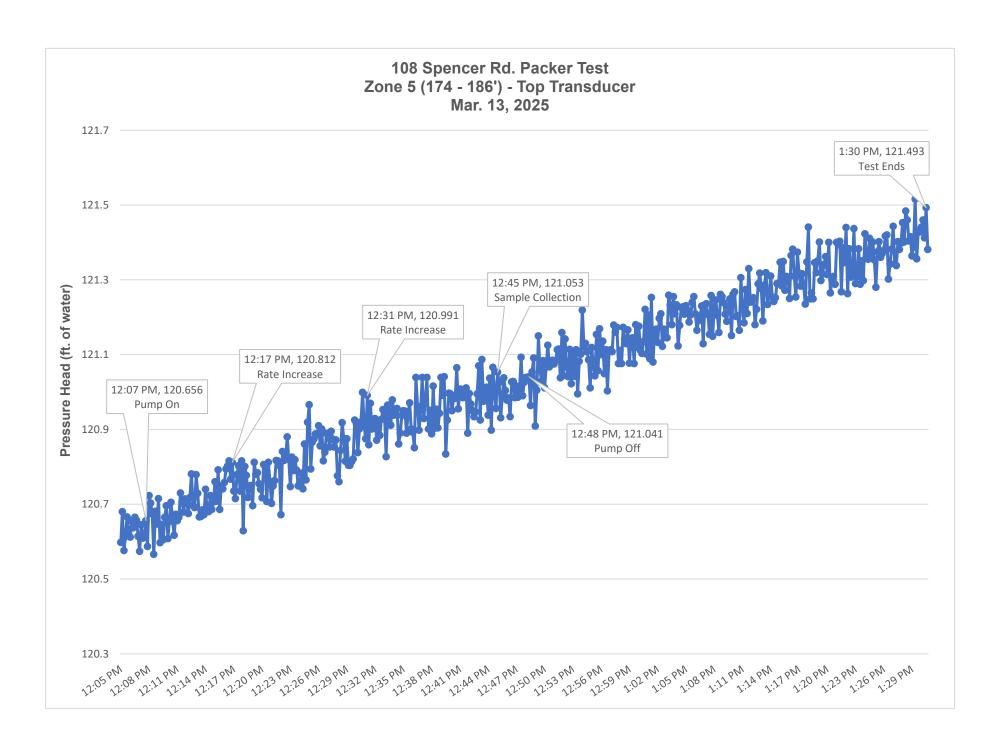


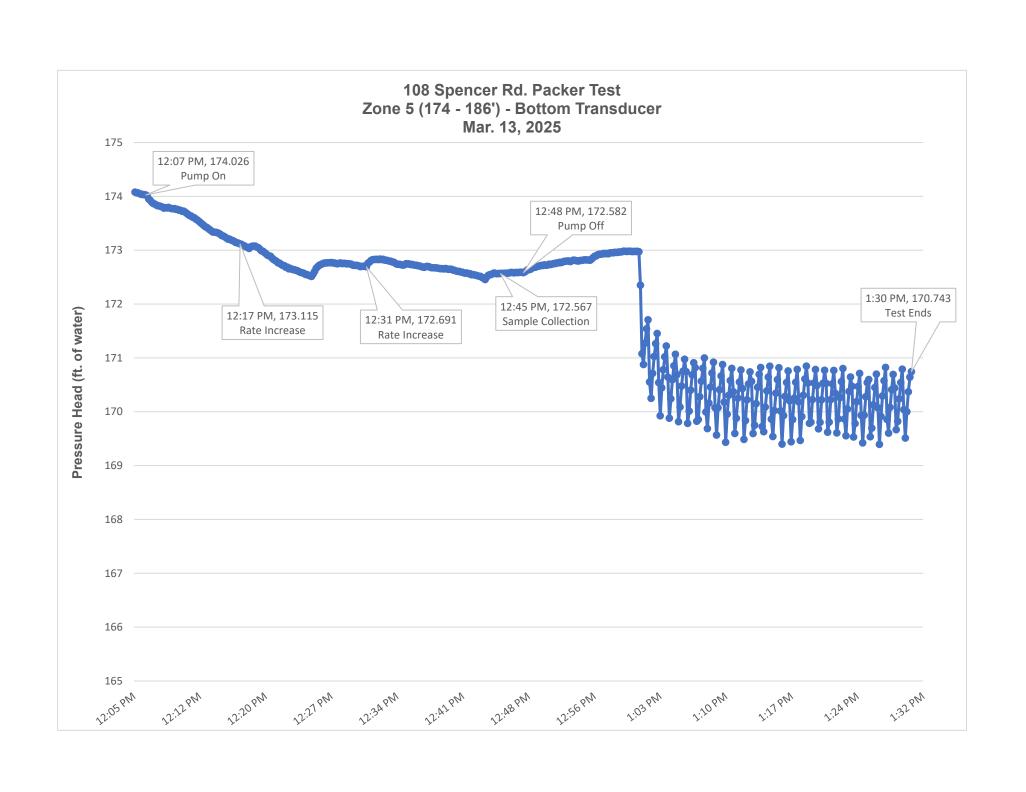


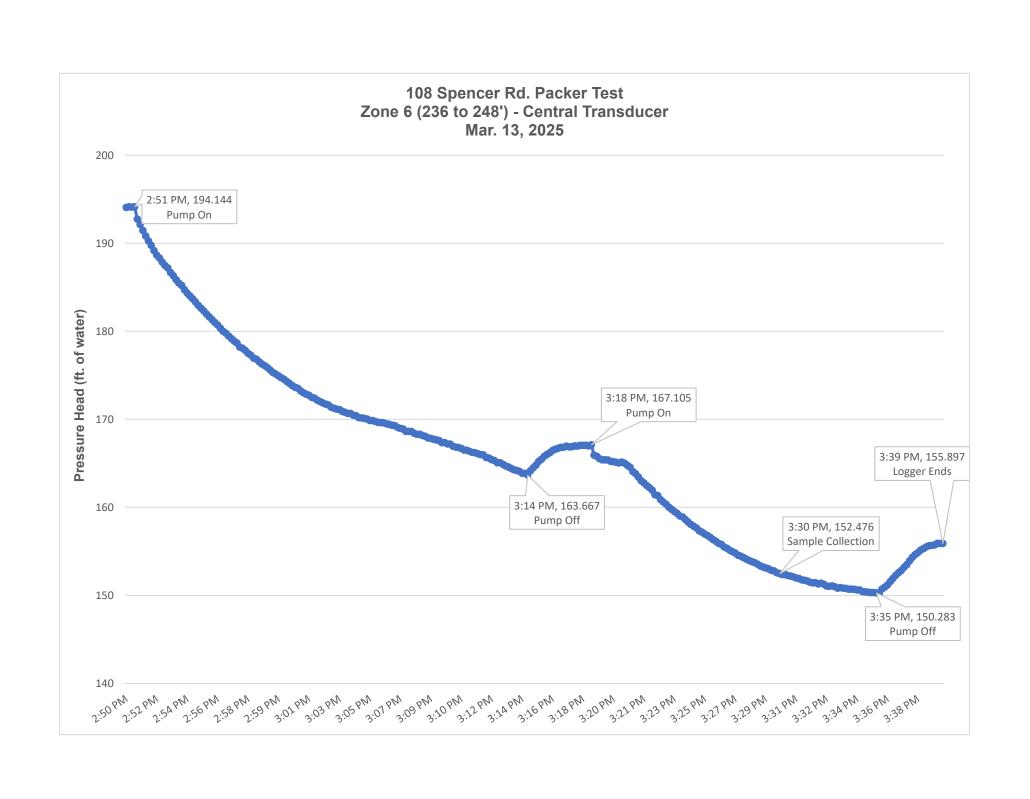


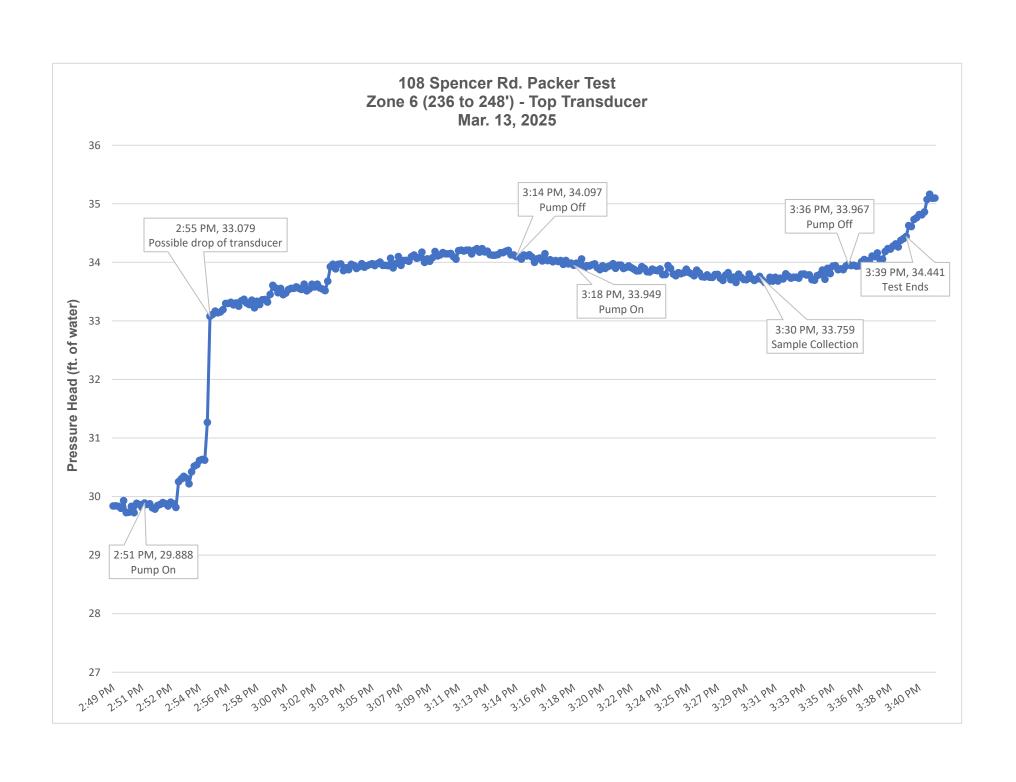


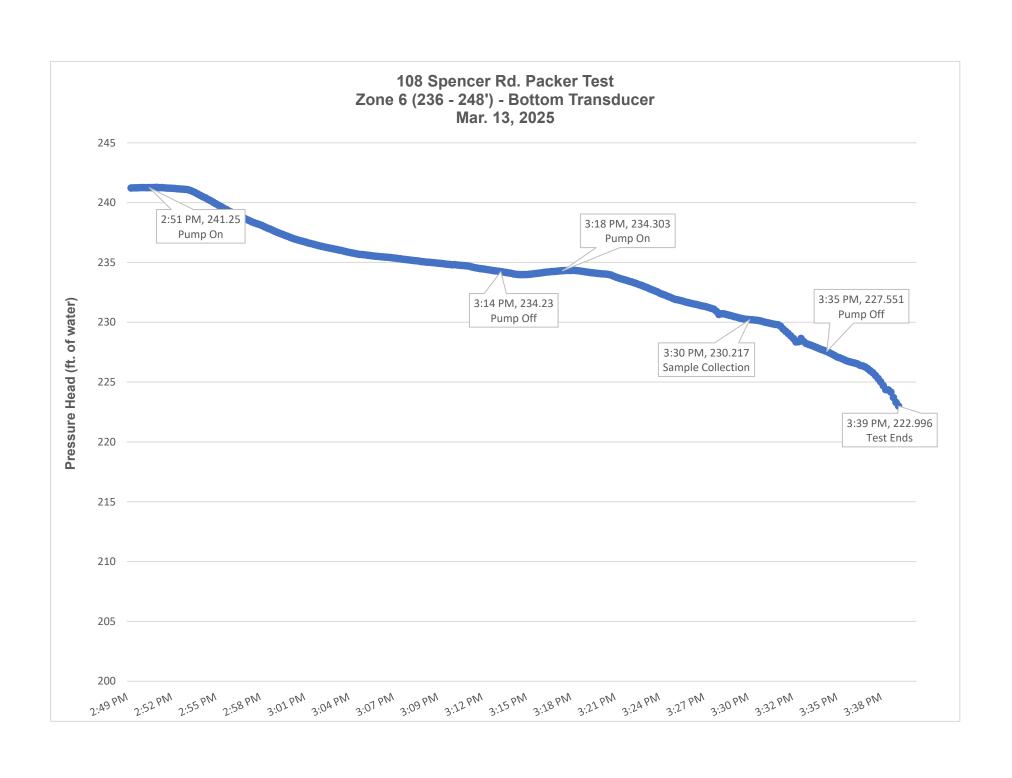


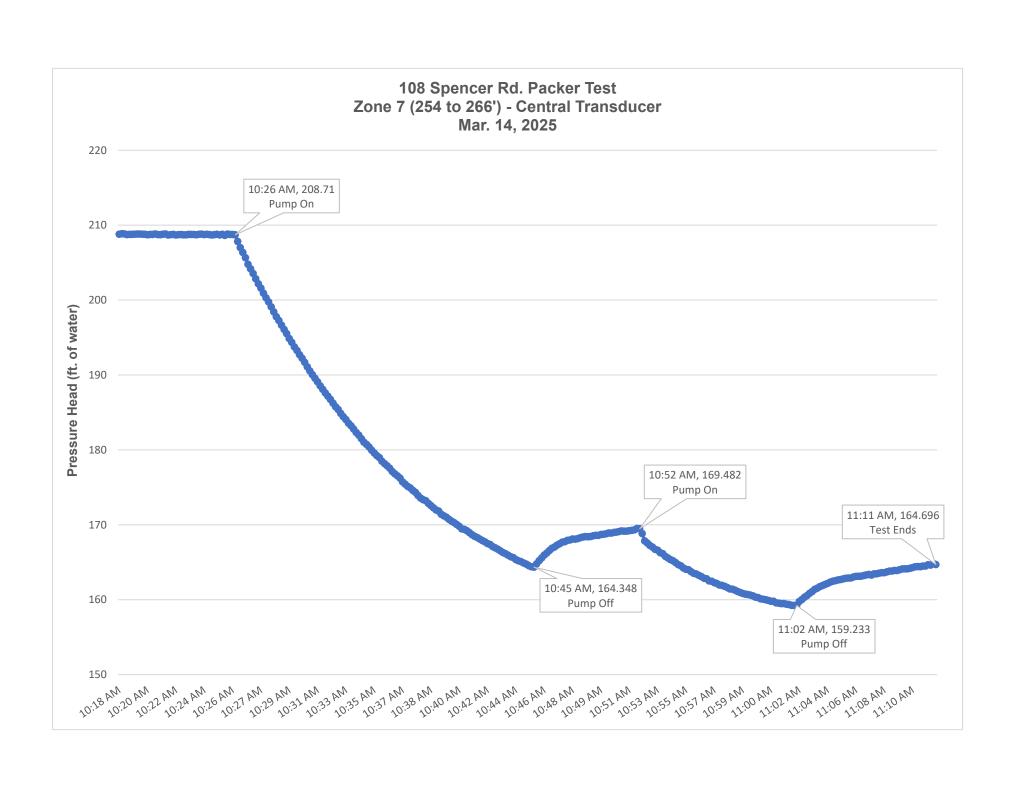


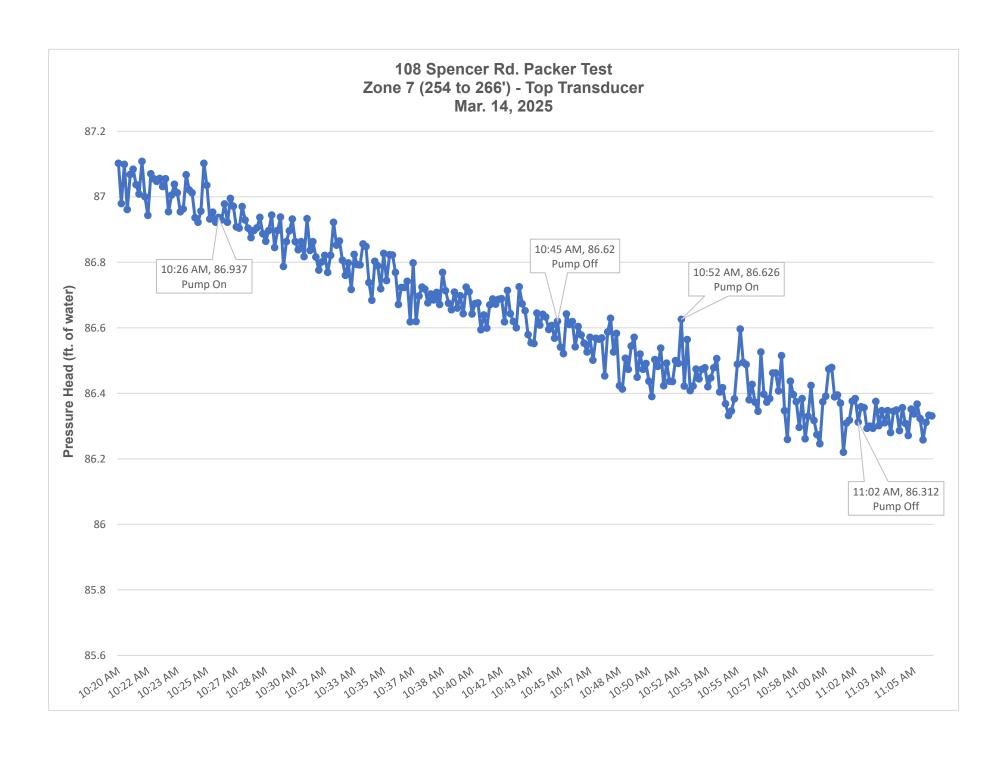


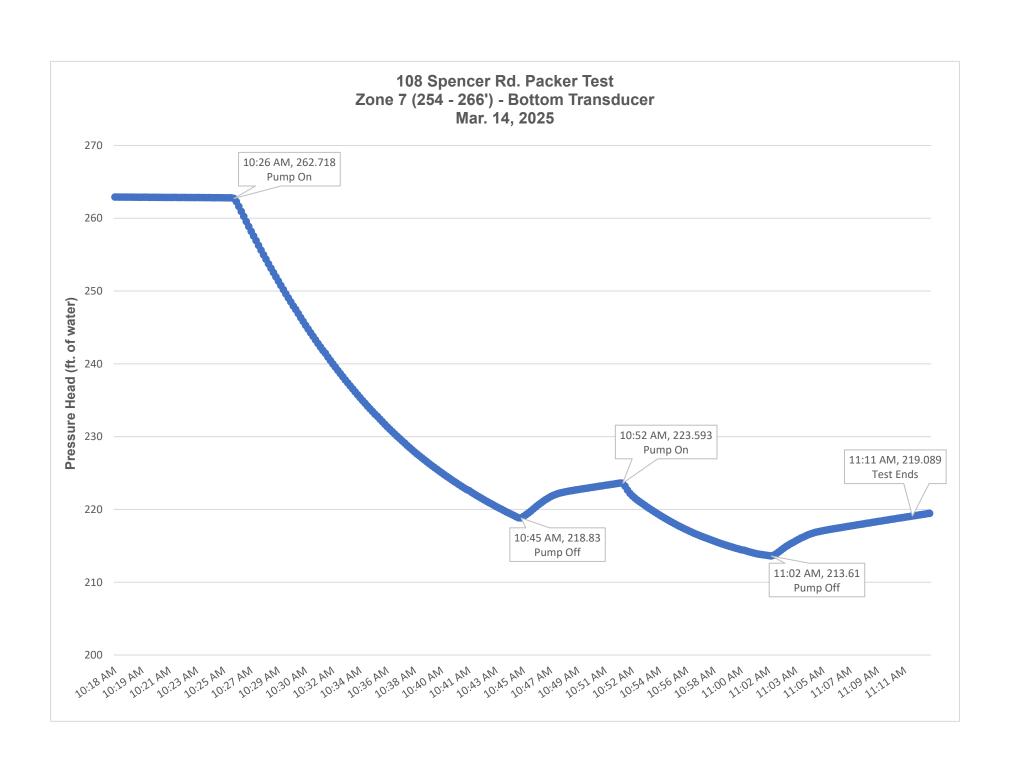


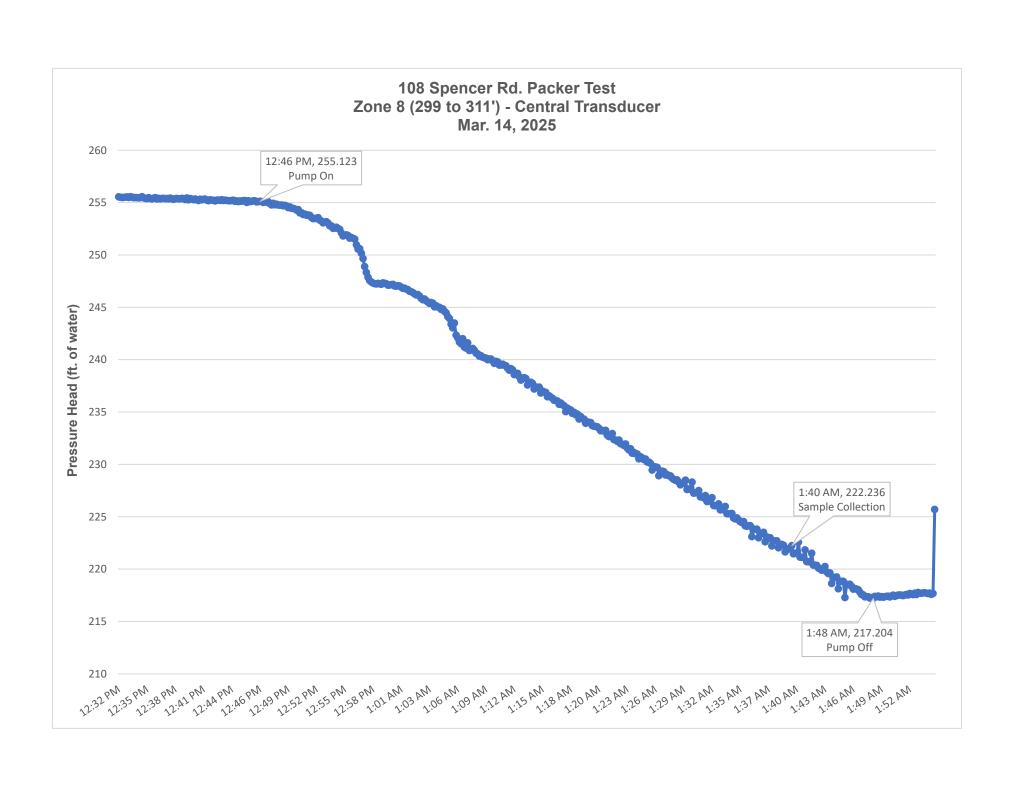


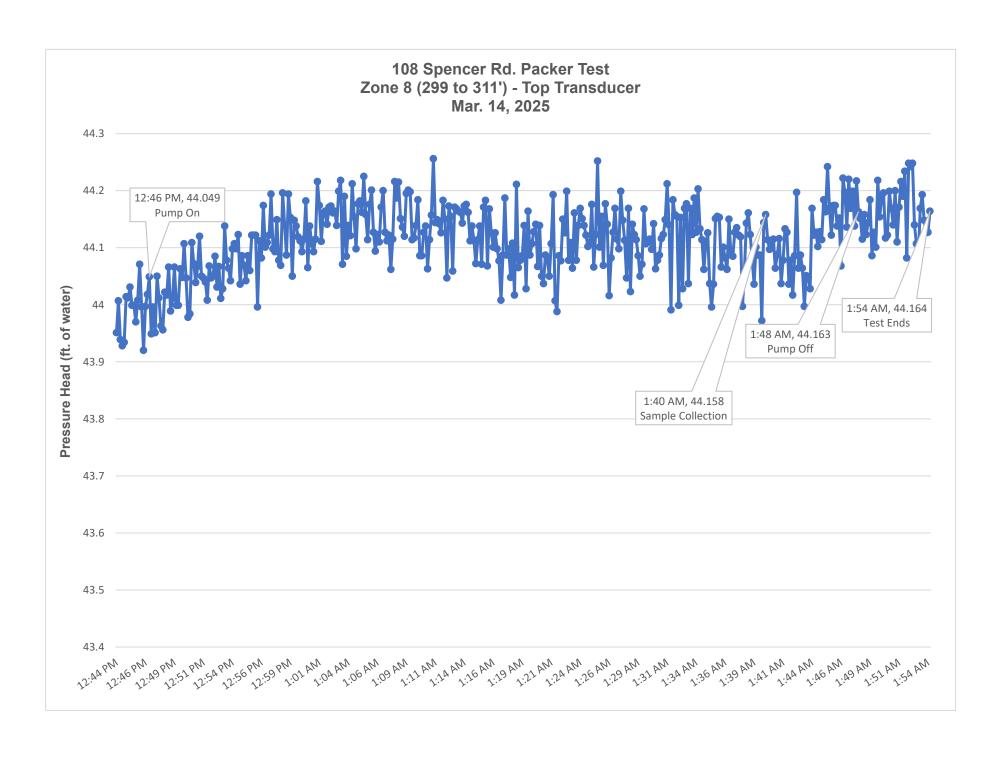


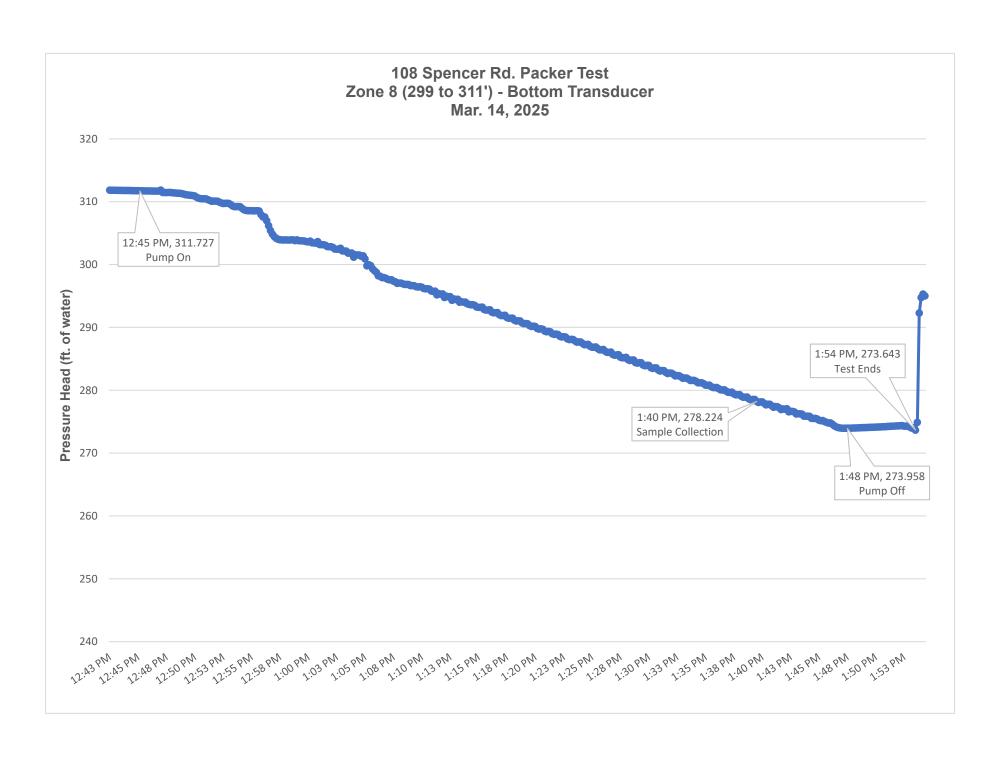


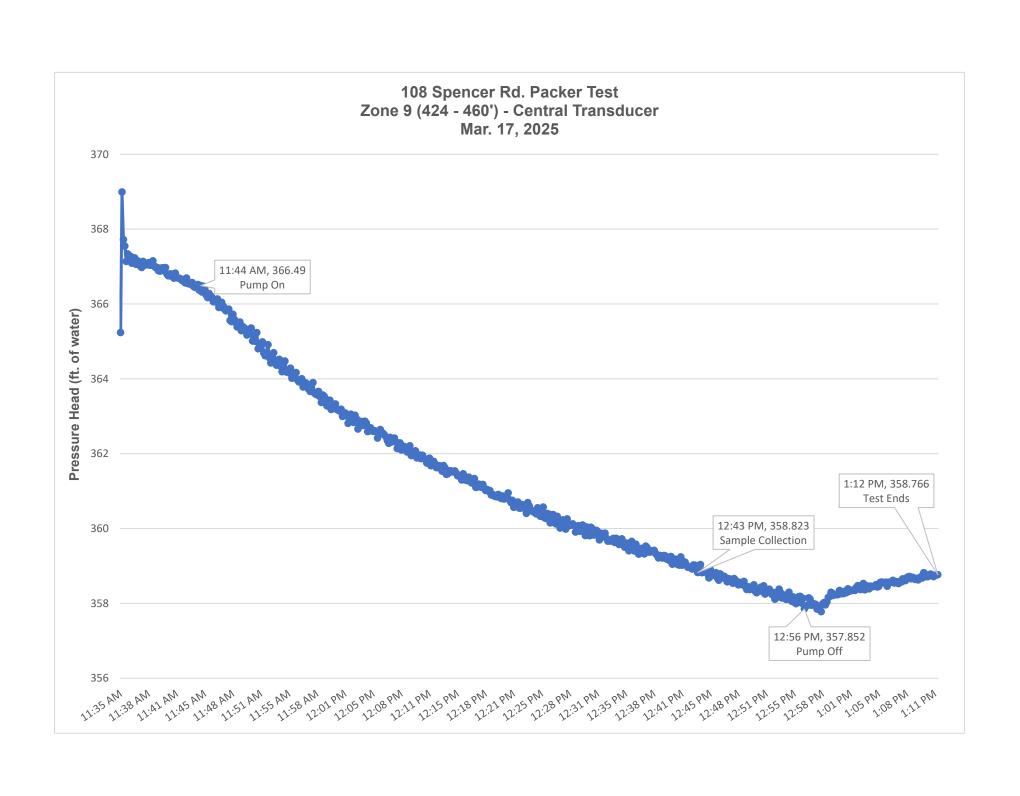


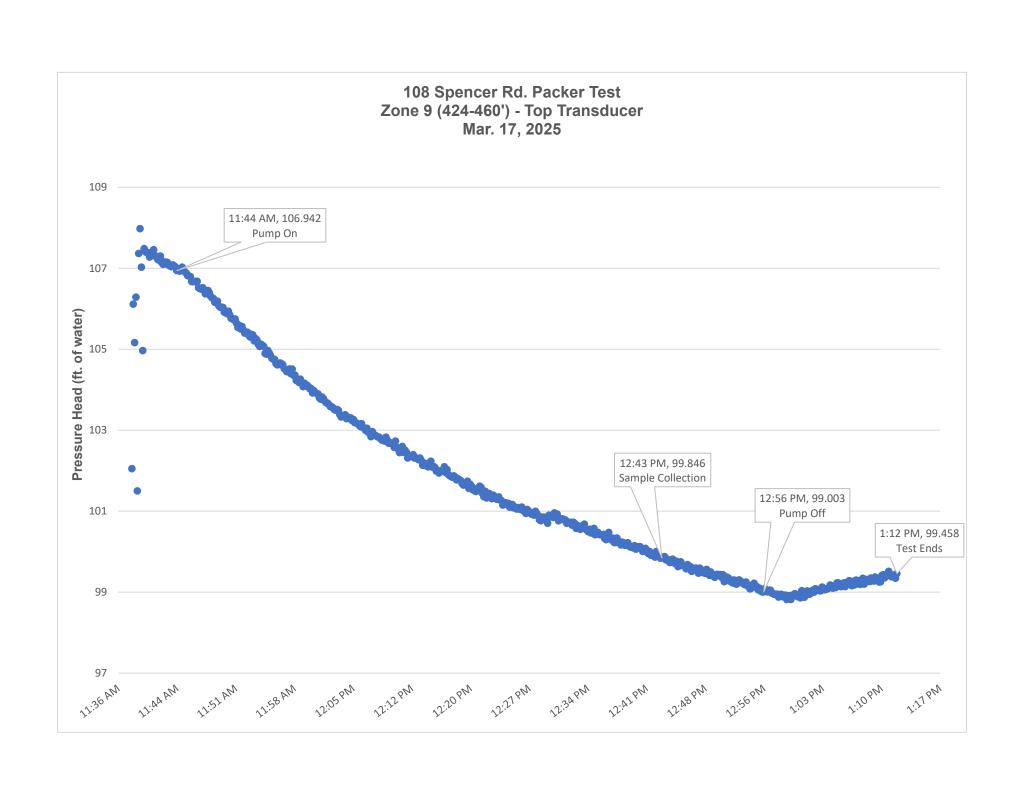












## Appendix D – Waste Documentation

| THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not or duplicate, covering the property named herein, and is intended sole   | the Original Bill of Lading, not a copy<br>ly for filing or record.  |   |                  |  |                                      |                   |
|---|--|---|------------------|--|--------------------------------------|-------------------|
|   |  | Ship                                      | per's l          | No   |                                      |                   |
| Carrier Lewis Environmental, LLC SCAC   |  | _ Carr                                    | ier's N          |  | AD9879785                            |                   |
| RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing established by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable state and federal states are stablished by the carrier and are available to the shipper, on request; and all applicable states are stablished by the carrier and are available to the shipper.  | between the carrier and shippe ral regulations;  | r, if applica                             | ble, otherw      | Energy 7   |                                      |                   |
| at, date, the Property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below, in apparent good order, except as noted (contents and condition of the property described below). | ontents of packages unknown),  | _ from                                    |                  | and doctined as inc                              | licated below, which                 | ch said company   |
| the Property described below, in apparent good order, except as noted (contents and condition of c<br>(the word company being understood throughout this contract as meaning any person or corporation route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed each party at any time interested in all or any of said Property that every service to be performed contained, including the conditions on the back hereof, which are hereby agreed to by the shipper an   | as to each carrier of all or any of the subject to   | of said Prop                              | -dri suss s      | Il or any portion of                             | said route to destin                 | nation, and as to |
| TO:   | FROM:  | issigns.                                  |                  | -  |                                      |                   |
| Consignee Miller Emdranmental Group   | Shipper  | noco                                      | Ipliline         | LLP .  |                                      |                   |
| Street 108 Exet Lake Road   | Street   | DS Spar                                   | CAP RE           | ad   |                                      | 350               |
| Destination Woodstown NJ Zip 05003  | Origin   | ashing                                    | ton Cr           | ossing PA  | Zip                                  |                   |
| Route   |  |   |                  |  |                                      |                   |
| Delivering Carrier  Lewis Environmental, LLC  | Vehicle N  | Number                                    | -                | U.S. DOT   | Hazmat Re                            | g. No.<br>3394EG  |
| Number and Type HM I.D. Of Packages HM Number Description of Arti   | cles   | Hazaro<br>Class                           |                  | Total Quantity<br>(mass, volume, or<br>activity) | Weight<br>(subject to<br>correction) | Class or<br>Rate  |
| 1TT   UN1863 Fuel, eviation, turbine engl   | ne, liquida  |   | 3 11             | 416  | G                                    |                   |
|   | ERGN 120   |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      | PACE NO.          |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   |  |   |                  |  |                                      |                   |
|   | Subject to Section 7 of condi  | itions, if this                           | 001              |  | COD FI                               | EF:               |
| Remit COD to: Address:  | shipment is to be delivered to the without recourse on the consconsignor shall sign the following sta. The carrier shall not make del shipment without payment of frei | signor, the<br>atement:<br>livery of this | \$               | AMT:   | Prepaid [                            |                   |
| City: State: Zip:  NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is   | other lawful charges.  |   |                  | L CHARGES:                                       |                                      | CHARGES           |
| hereby specifically stated by the shipper to be not exceeding \$ Per  NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S. 14706(c)(1)(A) and (B).   | (Signature of Consignor)  PLACARDS   |   | 1 20             | PLACARDS SUPPLIED                                | Prepaid  BY SHIPPER                  | BY CARRIE         |
| This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per   | REQUIRED   | 25  | [                | DRIVER'S<br>SIGNATURE:                           | and the                              |                   |
| SHIPPER:  | CARRIER:   | -   | 大學學              | S Environm                                       | DATE:                                | 2.25              |
| EMERGENCY RESPONSE TELEPHONE NUMBER:  | NAME OR CONTR  | ACT N                                     | UMBER<br>ITIFIER |  | TRRRO                                | -                 |

## Appendix E – Water Quality Field Sheets



| Well ID:       |  | 1083              | Sources              |                    | Site ID:          | 100             | <               |                            | Sample Date  | 3/12/23    |
|----------------|--|-------------------|----------------------|--------------------|-------------------|-----------------|-----------------|----------------------------|--|------------|
| Initial DTW    | Total Control of the  | 49.42             | - 42'                | 1 to TOC           | Address:          | 108             | Spences         |                            |  |            |
| Well Diame     |  | (0.0)             | Sample Met           | hod (cicle one)    |                   | 2               | one 1           | - alm                      | 6 (8) H  |            |
| Total Well 1   |  |                   | Lo                   | w Flow             | Sampling Ted      | ch(s):          |                 |                            |  |            |
| Water Colu     |  |                   | Purg                 | e/sample           | Weather Con       |                 | 1010 NA         | 197                        |  |            |
| Pump Intak     |  |                   | Grab/                | No Pruge           | Air Temp =        | 50°             |                 |                            |  |            |
| Data Coll      | ection: Lo   | w Flow            |                      |                    |                   |                 |                 |                            |  |            |
| Time           | DTI  | Temp              | Conductivity         |                    | pH                | ORP             |                 | Cumulative                 | Appearance   | 一小り、して     |
|                | DTW  | Unit              | MS/SM Unit           |                    | NA                | MV Unit         | Flow Rate       | Purge Volume               | of Purge   | Comment    |
|                |  | ± 0.3 °C          | ± 3%                 | ± 10%              | ± 0.1             | ± 10            |                 |                            |  |            |
|                |  | Just prior to l   | owering any equ      | ipment into wel    |                   |                 |                 |                            |  |            |
|                |  | After lowerin     | g equipment into     | the well o bec     |                   |                 |                 |                            |  |            |
|                | Purge Start  | Time              | 8 celaribitient unit | me wen & ber       | ore turning on t  | ne pump         |                 |                            |  |            |
| 11:22          |  |                   |                      |                    |                   |                 |                 |                            |  |            |
| 11.01          |  |                   |                      |                    |                   |                 |                 |                            |  |            |
| 11.70          |  | 15.51             | 0,49                 | 0.0                | 6.54              | 26              |                 |                            |  | 49.4 MW    |
| 11.30          |  | 13.64             | 0,44                 | 0,0                | 6.63              | 15              |                 |                            | Clear  | 38.7 Ntu   |
| 11.33          |  | 12.10             | 19,49                | 0,0                | 6,67              | 8               |                 | 24 gals                    | Clear  | 375 2      |
| 1420           |  | 1380              | 05                   |                    | 1 ali             |                 |                 |                            |  |            |
| 1433           |  | 14.35             | 0.54                 | 0.0                | 6 C 1             |                 |                 |                            | Chas   | 13.2       |
|                |  |                   |                      |                    | 6,40              |                 |                 |                            | Clear  | 13.3       |
| 1602           |  | 13.24             | 0,55                 | 2.68               | 701               | -10             |                 |                            | Clear  | 14.2       |
|                |  |                   |                      |                    |                   |                 |                 |                            |  |            |
| - CONTRACTOR   | 18 - 12 - 15 C - 5 TH ( ) ST. TE ( )   | ection Time       |                      |                    |                   |                 |                 |                            |  |            |
|                | Purge StopTi   |                   |                      |                    |                   |                 |                 |                            |  |            |
| Data Colle     | CULUII. I WI   | ge and Samp       | ole / Grab Sa        |                    |                   |                 |                 |                            |  |            |
|                |  |                   |                      | If Applicable      |                   |                 |                 |                            | THE RESERVE OF THE PARTY OF THE |            |
| Time           | DTW  | Temp              | Conductivity         | D.O.               | pH                | ORP             |                 |                            | Appearance   |            |
|                |  | Unit              | Unit                 | Unit               | NA                | Unit            | Flow Rate       | Cumulative<br>Purge Volume | of Purge   | Method Of  |
|                |  | ± 0.3 °C          | ± 3%                 | ± 10%              | ± 0.1             | ± 10            |                 |                            | Water  | Sampling   |
|                |  | Just prior to lov | vering any equip     | ment into well     |                   |                 |                 |                            |  |            |
|                |  |                   |                      | Vote: I Inless oth | pravion stated C  |                 |                 |                            |  |            |
| S              | ample Collec   | ction Time        |                      | collected from th  | erwise stated, is | onde before pur | collected durin | g purge and sam            | ple or grab sam  | pling were |
|                |  |                   |                      |                    |                   |                 | Prig or samplin | 5                          |  |            |
| eneral Com     | ment & Typ   | e of Equipment    | Used (pumps/         | YSI meter/ect./c   | aibration info    |                 |                 |                            |  |            |
|                |  |                   |                      |                    |                   |                 |                 |                            |  |            |
|                |  |                   |                      |                    |                   |                 |                 |                            |  |            |
|                |  |                   |                      |                    |                   |                 |                 |                            |  |            |
|                |  |                   |                      |                    |                   |                 |                 |                            |  |            |
| abilization is | chi are d  |                   |                      |                    |                   |                 |                 |                            |  |            |
| ± (            | omeved when in the contract of | erature           | adings are within    |                    | P                 | arge Volumes:   |                 |                            |  |            |

± 0.1 for pH,

± 3% for specific conductivity, ± 10 for reduction-oxidation potential

2-inch diameter well:

0.16 gal./ft x \_\_\_\_ (linear feet of water) = gallons of water

4-inch diameter well:

0.65 gal./ft x \_\_\_\_ (linear feet of water) = gallons of water

180 Hz ≈ 0.9 - 6.75 gpm



| ell ID:                 |  | 108 500   | 200              |                 | Site ID:        | 108             |                   |                 | Sample Date         | :3/3/23            |
|-------------------------|--|---|------------------|-----------------|-----------------|-----------------|-------------------|-----------------|---------------------|--------------------|
| All Dia.                | Time:  | 40.07   | 10915            |                 | Address:        | 1,03            | PESCO             |                 |                     |                    |
| ell Diamete otal Well D | et:  |   | Sample Meth      | od (cicle one)  |                 |                 |                   |                 |                     |                    |
| ater Color              | epth:<br>in Length:  |   | Low              | Flow            | Sampling Te     | ch(s):          |                   |                 |                     |                    |
| ump Intaka              | depth:   |   | Market Street    | sample          | Weather Con     | ditions: Sun    |                   |                 |                     |                    |
| ata Coll                | uepin;   | Flow  | Grab/N           | o Pruge         | Air Temp =      |                 | 70                |                 |                     |                    |
|                         | Serion: Tok  | RIOW  |                  |                 |                 |                 |                   |                 |                     |                    |
| Time                    | DTW  | Temp  | Conductivity     | D.O.            | pH              | ORP             |                   | Cumulative      | Appearance          |                    |
|                         |  | <u>Unit</u>   | Unit             | Unit            | NA              | <u>MV</u> Unit  | Flow Rate         | Purge Volum     | e of Purge<br>Water | Comme              |
|                         |  | ± 0.3 °C  | ± 3%             | ± 10%           | ± 0.1           | ± 10            |                   |                 |                     |                    |
|                         |  | Just prior to lo  | wering any equi  | pment into we   |                 |                 |                   |                 |                     |                    |
|                         |  |   |                  |                 |                 |                 |                   |                 |                     |                    |
|                         | AND REAL PROPERTY AND ADDRESS OF THE PARTY AND |   | equipment into   | the well & bef  | ore turning on  | the pump        |                   |                 |                     |                    |
| 1000                    | Purge Start T  | ıme   |                  |                 |                 |                 |                   |                 |                     |                    |
|                         |  |   | Freize S         | C1.             |                 |                 |                   |                 |                     |                    |
| 1078                    |  | 12.52   | 0.60             | 0               | 100             |                 |                   |                 |                     | 067                |
| 1031                    |  | 12.68   | 0.586            | 0.0             | 2.88            | 71              | 0.25 spm          |                 | () e=1              | 130                |
| 1035                    |  | 12.74   | 0.570            | 6.0             | 7.07            | - 17            |                   |                 | \/c/                | 10.0               |
|                         |  |   |                  |                 |                 |                 |                   |                 |                     | 16.6               |
| 1214                    |  | 12.73   | 6.582            | 6.0             | 7.11            | -69             | 0-2               |                 | (1-5)               | 9.24               |
| 1217                    |  | 12.88   | 0.577            | 0.0             | 7.14            | 76              | 0.2               |                 |                     | 9.31               |
| 1221                    |  | 12.97   | 0.565            | 0.0             | 7.16            | . 83            | 0.1               |                 |                     | 10.67              |
| 1225                    |  | 12.75   | 0.562            | 0.0             | 7.18            | -85             | 0,1               |                 |                     | 5.98               |
| 12413                   |  | 13.46   | 0.544            | 0.0             | 7.15            | - 74            | 0.1               |                 |                     | 14.5               |
|                         | Sample Colle   | ection Time   |                  |                 |                 |                 |                   |                 |                     |                    |
|                         | Purge StopTi   | できたがでします。<br>では、これでは、これでは、これできた。<br>では、これでは、これでは、これできた。<br>では、これでは、これできた。<br>では、これでは、これできた。<br>では、これでは、これでは、これできた。<br>では、これでは、これでは、これできた。<br>では、これでは、これでは、これでは、これでは、これでは、これでは、これでは、これ |                  |                 |                 |                 |                   |                 |                     |                    |
|                         |  |   | ole / Grab Sa    | mpling          |                 |                 |                   |                 |                     |                    |
|                         |  |   |                  | If Applicable   |                 |                 |                   |                 |                     |                    |
|                         |  | Temp  | Conductivity     | D.O.            | pH              | ORP             |                   | Cumulative      | Appearance          |                    |
| Time                    | DTW  | Unit  | Unit             | Unit            | NA              | Unit            | Flow Rate         | Purge Volume    | of Purge            | Method Of Sampling |
|                         |  | ± 0.3 °C  | ± 3%             | ± 10%           | ± 0.1           | ± 10            |                   |                 | Water               |                    |
|                         |  | Just prior to lo  | wering any equip | ment into well  |                 |                 |                   |                 |                     |                    |
|                         |  |   |                  | Note: Unless of | herwice stated  | field many      |                   |                 |                     |                    |
|                         | Sample Colle   | ction Time  |                  | collected from  | the well with a | sonde before pu | s collected durin | g purge and san | aple or grab san    | ipling were        |
|                         |  |   |                  |                 |                 |                 |                   |                 |                     |                    |
| General Co              | mment & Typ  | e of Equipmen   | t Used (pumps/   | YSI meter/ect.  | /caibration inf | (o):            |                   |                 |                     |                    |
|                         |  | 2005  | Senolo Ca        | Medal C         | 104/            | 7               |                   |                 |                     |                    |
|                         |  | 3000  | 5800/2 (0        | 16.1            | 124             |                 |                   |                 |                     |                    |
|                         |  |   |                  |                 |                 |                 |                   |                 |                     |                    |
|                         |  |   |                  |                 |                 |                 |                   |                 |                     |                    |

± 0.3 °C for temperature,

 $\pm$  0.1 for pH,

± 3% for specific conductivity,

± 10 for reduction-oxidation potential

2-inch diameter well:

0.16 gal./ft x \_\_\_\_ (linear feet of water) = gallons of water

4-inch diameter well:

0.65 gal./ft x \_\_\_\_ (linear feet of water) = gallons of water



| nitial DTW / Time:<br>Vell Diameter: |                                      | Joen Con  |                  | Site ID:   |  |                 |                           | Sample Dat          | Sections, and by many and mary assume |
|--------------------------------------|--------------------------------------|---|------------------|--|--|-----------------|---------------------------|---------------------|---------------------------------------|
| Vell Diameter:                       | THE RESIDENCE OF THE PERSON NAMED IN | 10815   |                  | Address:   |  |                 |                           |                     |                                       |
|                                      | 6.,                                  | THE REPORT OF THE PARTY OF THE | od (cicle one)   |  |  |                 |                           |                     |                                       |
| otal Well Depth:                     |                                      |   | Flow             | Sampling Tec   | h(s).  |                 |                           |                     |                                       |
| Vater Column Leng                    | h:                                   |   | /sample          | Weather Cond   | THE PARTY OF THE P | ~~1             |                           |                     |                                       |
| ump Intake depth:                    |                                      |   | No Pruge         | Air Temp =   | 100  |                 |                           |                     |                                       |
| Data Collection:                     | Low Flow                             |   |                  |  |  |                 |                           |                     |                                       |
|                                      | Temp                                 | Conductivity  | D.O.             | pH   | ORP  |                 |                           | Appearance          |                                       |
| Time DT                              | W Unit                               | Unit  | Unit             | NA   | Unit   | Flow Rate       | Cumulative<br>Purge Volun | of Duras            | Comment                               |
|                                      | ± 0.3 °C                             | ± 3%  | ± 10%            | ± 0.1  | ± 10   |                 |                           |                     |                                       |
|                                      | Just prior to l                      | owering any equi  | pment into we    |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      | After lowerin                        | g equipment into  | the well & bei   | fore turning on th   | ne pump  |                 |                           |                     |                                       |
| Purge S                              | tart Time                            |   |                  |  |  |                 |                           |                     |                                       |
| 17170                                | 12.60                                | 0.563   | 41.39            | 7.16   | -53  | 0.1500          | 3                         | Cheer               | 9.65,010                              |
| 1513                                 | 12.15                                | 0.560   | 336              | 7.1%   | .52  |                 |                           |                     | 6.65                                  |
|                                      | 12.75                                | 0.556   | 1.55             | 7.11   | -56  |                 |                           |                     | 6.87                                  |
| 1678                                 | 12.70                                | 0565  |                  |  |  |                 |                           |                     | Rechas                                |
|                                      |                                      |   | 4.55             | 7.10   | -55  | 1 1 x 300       |                           | (ke/                | 5.55NTU                               |
|                                      |                                      |   |                  |  |  | 0.10            |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
| Sample                               | Collection Time                      |   |                  |  |  |                 |                           |                     |                                       |
| Purge St                             |                                      |   |                  |  |  |                 |                           |                     |                                       |
| Data Collection:                     | Purge and Sam                        | ple / Grab Sar  | npling           |  |  |                 |                           |                     |                                       |
|                                      |                                      |   | If Applicable    |  |  |                 |                           |                     |                                       |
|                                      | Temp                                 | Conductivity  | D.O.             | pH   | ORP  |                 |                           |                     |                                       |
| Time DTV                             | Unit                                 | Unit  | Unit             | NA   |  | Flow Rate       | Cumulative                | Appearance of Purge | Method Of                             |
|                                      | ± 0.3 °C                             | ± 3%  | ± 10%            | ± 0.1  | Unit   |                 | Purge Volume              | Water               | Sampling                              |
|                                      | Just prior to lo                     | wering any equip  |                  | THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLU |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   | Note: Unless of  | herwise stated, fi   | eld parameters   | collected durin | g purge and saur          | mle or orah com     | pling were                            |
| Dampie                               | Collection Time                      |   | collected from t | he well with a so  | nde before pur   | ging or samplin | g.                        | Pro Or grad Saill   | pling were                            |
| General Comment &                    | Type of Equipmen                     | t Used (numps/  | /SI meter/out    | /aaihmadia- i-sa   |  |                 |                           |                     |                                       |
|                                      |                                      | r Caca (Pumps,  | DI MICICI/CCL./  | caidration into)   |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  | -27  |  |                 |                           |                     |                                       |
|                                      |                                      | Collect.  | (5)              |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
|                                      |                                      |   |                  |  |  |                 |                           |                     |                                       |
| tabilization is achieved             | when three successive                | readings are within   |                  | P  | rge Volumes:   |                 |                           |                     |                                       |

± 0.3 °C for temperature,

 $\pm 0.1$  for pH,

± 3% for specific conductivity,

± 10 for reduction-oxidation potential

2-inch diameter well:

0.16 gal./ft x \_\_\_\_ (linear feet of water) = gallons of water

4-inch diameter well:

0.65 gal./fl x \_\_\_\_ (linear feet of water) = gallons of water



| We   | ill ID:                 |  | 100                                      | R  |  | Site ID:            |                  |                   |              | Sample Date:      | 3 14 123     |
|--|-------------------------|--|--|--|--|---------------------|------------------|-------------------|--------------|-------------------|--------------|
|  | tial DTW/7              | Time:  | 100                                      | 2661   |  | Address:            |                  |                   |              |                   |              |
|  | ell Diameter            |  | CII                                      | Sample Method  | (cicle one)  |                     |                  |                   |              |                   |              |
|  |                         |  |  | Low F  |  | Sampling Tech       | (s):             |                   |              |                   |              |
|  | tal Well De             |  |  |  |  |                     | tions: Sur1      |                   |              |                   |              |
| 10223  | ater Column             |  |  | Purge/sa<br>Grab/No  |  | Air Temp =          | 620              |                   |              |                   |              |
| Property leading to the leading to t | mp Intake d             |  | 160                                      | Olau/INO   |  |                     |                  |                   |              |                   |              |
|  | ata Come                | ction: Low   | Temp                                     | Conductivity   | D.O.   | pH                  | ORP              |                   | Cumulative   | Арреагапсе        |              |
|  | Time                    | DTW  | Unit                                     | Unit   | Unit   | NA                  | Unit             | Flow Rate         | Purge Volume | or Purge          | Comment      |
|  |                         |  | ± 0.3 °C                                 | ± 3%   | ± 10%  | ± 0.1               | ±10              |                   |              |                   |              |
|  |                         |  |  | vering any equip   | ACCOMPANIES MANUAL EXPERIES  |                     |                  |                   |              |                   |              |
|  |                         |  | Just Prior to to                         |  |  |                     |                  |                   |              |                   |              |
|  |                         |  | After lowering                           | equipment into   | he well & befo   | ore turning on the  | ne pump          |                   |              |                   |              |
| 1  |                         | STATE OF THE PARTY | 中国 1000000000000000000000000000000000000 | celan Statement Tree   | THE TOP CO   |                     |                  |                   |              |                   |              |
| -  |                         | Purge Start T  |  | THE RESIDENCE OF THE PARTY OF T |  |                     |                  |                   |              |                   |              |
| 1  | 1025                    |  |  | 1500   | 00   | 7.79                | -107             | 1.1000            |              | (loudy            | 22.3 NIC     |
|  | 1050                    |  | 12.26                                    | 0.38)  | 0.0  | 7.70                | -110             | 0.75              |              | (kg               | 17.0         |
|  | 1040                    |  | 12.42                                    | ()-3/  | / CU   | 771                 | 79               | 025               |              | (1651             | 15.6         |
| -  | 1051                    |  | 11.7)                                    | 0.311  | 1.87   |                     |                  |                   | 14 001       |                   |              |
|  |                         |  |  | 1777   | 4.7  | 7 31                | -79              | 0.2               |              |                   |              |
|  | 1245                    |  | 12.61                                    | 0.100  | 333  | 764                 | .78              | 0.2560            |              | Cher              | 15.8 4       |
|  | 3320                    | Telescond and the second   | 1000                                     | 0.5/7  |  |                     |                  |                   |              | (1001             | 11.1         |
|  |                         |  |  | 15 15  | 1161   | 77/                 | -70              |                   |              | (/                | 10.8         |
|  | 1335                    |  | 12.88                                    | ().66  | 7.01   |                     |                  |                   | 11 ~1        |                   |              |
|  |                         |  |  |  |  |                     |                  |                   |              |                   |              |
|  |                         |  |  |  |  |                     |                  |                   |              |                   |              |
|  |                         |  |  |  |  |                     |                  |                   |              |                   |              |
|  |                         | WE WAS ARRESTED Z. ST.   | lection Time                             | STATE SECRETARY DESIGNATION OF THE PARTY OF  |  |                     |                  |                   |              |                   |              |
|  |                         | Purge Stop   |  | mla / Crah Sa  | mpling   |                     |                  |                   |              |                   |              |
|  | Data Coll               | lection: Pu  | rge and Sam                              | ple / Grab Sa  | If Applicable  |                     |                  |                   |              |                   |              |
|  |                         |  |  |  | · · · · · · · · · · · · · · · · · · ·  |                     |                  |                   |              |                   |              |
|  |                         |  | Temp                                     | Conductivity   | D.O.   | pH                  | ORP              |                   | Cumulative   | Appearance        | Method Of    |
|  | Time                    | DTW  | Unit                                     | Unit   | Unit   | NA                  | Unit             | Flow Rate         | Purge Volume | of Purge<br>Water | Sampling     |
|  |                         |  | ± 0.3 °C                                 | ± 3%   | ± 10%  | ± 0.1               | ± 10             |                   |              |                   |              |
|  | TARREST STREET, AND THE |  |  | owering any equi   | THE RESIDENCE OF THE PARTY OF T | 11                  |                  |                   |              |                   |              |
|  |                         |  |  |  |  |                     |                  |                   |              |                   |              |
|  |                         |  |  |  | A TOTAL PROGRAMMENT OF THE STREET, AND STR |                     |                  | ers collected dur |              | ample or grab sa  | ampling were |
|  |                         | Sample Col   | llection Time                            |  | collected from   | n the well with     | a sonde before p | ourging or sampl  | ing.         |                   |              |
|  |                         |  |  |  | WEI meter/e  | ct /caibration i    | afo):            |                   |              |                   |              |
|  | General C               | omment & T   | ype of Equipme                           | ent Used (pumps  | s/ 1 31 meter/e  | CL., CAIDI ALIUM II |                  |                   |              |                   |              |
|  |                         | 1  | Regulines 6                              | alkale   | very 5 9   |                     |                  |                   |              |                   |              |
|  |                         |  |  |  |  | 1000                |                  |                   |              |                   |              |
|  |                         |  |  | 36/CO//S   | Performance of the Control of the Co | 1340                |                  |                   |              |                   |              |
|  |                         |  | conc 8 sc                                | rok called   | TURU)  | 1370                | Purge Volumes    |                   |              |                   |              |

± 0.3 °C for temperature,

± 0.1 for pH,

± 3% for specific conductivity,

± 10 for reduction-oxidation potential

2-inch diameter well:

0.16 gal./ft x \_\_\_ (linear feet of water) = gallons of water

4-inch diameter well:

0.65 gal./ft x \_\_\_ (linear feet of water) = gallons of water

## **Appendix F – Laboratory Reports and Chain-** of-Custody Documentation



#### ANALYTICAL REPORT

Lab Number: L2514931

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514931

Report Date:

| Lab          | Sample                   |        | Sample                  | Collection     |              |  |
|--------------|--------------------------|--------|-------------------------|----------------|--------------|--|
| Sample ID    | Client ID                | Matrix | Location                | Date/Time      | Receive Date |  |
| I 2514931-01 | 108 SPENCER ROAD-0-68 FT | DW     | WASHINGTON CROSSING, PA | 03/12/25 11:35 | 03/14/25     |  |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514931-01: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

L2514931-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (217%) due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during the trip from the laboratory to the field and back to the laboratory. Any analytes detected are to be considered qualified.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Season Kelly Stenstrom

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Pace

## **ORGANICS**



## **VOLATILES**



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

03/15/25 14:34

O/AIII EE IXEGOETO

Lab ID:L2514931-01Date Collected:03/12/25 11:35Client ID:108 SPENCER ROAD-0-68 FTDate Received:03/14/25Sample Location:WASHINGTON CROSSING, PAField Prep:Refer to COC

Sample Depth:

Analytical Date:

Matrix: Dw Extraction Method: EPA 504.1
Analytical Method: 14,504.1 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514931-01 Date Collected: 03/12/25 11:35

Client ID: 108 SPENCER ROAD-0-68 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 12:46

Analyst: GMT

| Parameter                                    | Result | Qualifier | Units | RL   | MDL  | Dilution Factor |  |  |  |  |
|--|--------|-----------|-------|------|------|-----------------|--|--|--|--|
| Volatile Organics by GC/MS - Westborough Lab |        |           |       |      |      |                 |  |  |  |  |
| Methyl tert butyl ether                      | 0.17   | J         | ug/l  | 0.50 | 0.13 | 1               |  |  |  |  |
| 1,2-Dichloroethane                           | 0.17   | J         | ug/l  | 0.50 | 0.15 | 1               |  |  |  |  |
| Benzene                                      | 17     |           | ug/l  | 0.50 | 0.19 | <br>1           |  |  |  |  |
| Toluene                                      | 29     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |  |  |
| Ethylbenzene                                 | 2.9    |           | ug/l  | 0.50 | 0.13 | 1               |  |  |  |  |
| p/m-Xylene                                   | 78     |           | ug/l  | 0.50 | 0.30 | 1               |  |  |  |  |
| o-Xylene                                     | 70     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |  |  |
| Isopropylbenzene                             | 1.8    |           | ug/l  | 0.50 | 0.13 | 1               |  |  |  |  |
| 1,3,5-Trimethylbenzene                       | 150    | E         | ug/l  | 0.50 | 0.15 | 1               |  |  |  |  |
| 1,2,4-Trimethylbenzene                       | 120    | Е         | ug/l  | 0.50 | 0.13 | 1               |  |  |  |  |
| Naphthalene                                  | 48     |           | ug/l  | 0.50 | 0.14 | 1               |  |  |  |  |
| Xylenes, Total <sup>1</sup>                  | 150    |           | ug/l  | 0.50 | 0.19 | 1               |  |  |  |  |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 93         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 217        | Q         | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID:L2514931-01DDate Collected:03/12/25 11:35Client ID:108 SPENCER ROAD-0-68 FTDate Received:03/14/25Sample Location:WASHINGTON CROSSING, PAField Prep:Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 15:23

Analyst: GMT

| Parameter                       | Result        | Qualifier | Units      | RL        | MDL | Dilution Factor    |
|---------------------------------|---------------|-----------|------------|-----------|-----|--------------------|
| Volatile Organics by GC/MS - We | stborough Lab |           |            |           |     |                    |
| 1,3,5-Trimethylbenzene          | 120           |           | ug/l       | 5.0       | 1.5 | 10                 |
| 1,2,4-Trimethylbenzene          | 100           |           | ug/l       | 5.0       | 1.3 | 10                 |
| Surrogate                       |               |           | % Recovery | Qualifier |     | eptance<br>riteria |
| 1,2-Dichlorobenzene-d4          |               |           | 99         |           |     | 80-120             |
| 4-Bromofluorobenzene            |               |           | 105        |           |     | 80-120             |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:00 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result       | Qualifier | Units | RL          | MDL     |   |
|------------------------------------|--------------|-----------|-------|-------------|---------|---|
| Microextractables by GC - Westbord | ough Lab for | sample(s) | : 01  | Batch: WG20 | 40899-1 |   |
| 1,2-Dibromoethane                  | ND           |           | ug/l  | 0.010       | 0.005   | Α |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 07:15

Analyst: GMT

| Parameter                          | Result     | Qualifier   | Units    | RL     | MDL         |
|------------------------------------|------------|-------------|----------|--------|-------------|
| Volatile Organics by GC/MS - Westh | orough Lal | o for sampl | e(s): 01 | Batch: | WG2040966-4 |
| Methyl tert butyl ether            | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                 | ND         |             | ug/l     | 0.50   | 0.15        |
| Benzene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Toluene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                       | ND         |             | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                         | ND         |             | ug/l     | 0.50   | 0.30        |
| o-Xylene                           | ND         |             | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                   | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.13        |
| Naphthalene                        | ND         |             | ug/l     | 0.50   | 0.14        |
| Xylenes, Total <sup>1</sup>        | ND         |             | ug/l     | 0.50   | 0.19        |

|                        |              | Acceptance        |
|------------------------|--------------|-------------------|
| Surrogate              | %Recovery Qu | ualifier Criteria |
| 1,2-Dichlorobenzene-d4 | 113          | 80-120            |
| 4-Bromofluorobenzene   | 94           | 80-120            |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

Lab Number:

L2514931

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recove | ry Qual     | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-----------------|-------------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough L | ab Associated    | sample(s): | 01 Batch:       | WG2040899-2 | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 98               |            | -               |             | 70-130              | -   |      |               | Α      |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514931

Report Date:

| arameter                               | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual     | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|--|------------------|--------------|-------------------|----------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s) | : 01 Batch:       | WG204096 | 66-3                |     |      |               |  |
| Methyl tert butyl ether                | 100              |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                     | 128              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Benzene                                | 105              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Toluene                                | 102              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Ethylbenzene                           | 118              |              | -                 |          | 70-130              | -   |      | 20            |  |
| p/m-Xylene                             | 125              |              | -                 |          | 70-130              | -   |      | 20            |  |
| o-Xylene                               | 120              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                       | 112              |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                 | 120              |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                 | 115              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Naphthalene                            | 82               |              | -                 |          | 70-130              | -   |      | 20            |  |

| Surrogate                                   | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|---|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4 4-Bromofluorobenzene | 93<br>108             |                   |      | 80-120<br>80-120       |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514931

Report Date:

| Parameter                           | Native<br>Sample | MS<br>Added | MS<br>Found  | MS<br>%Recovery | MSD<br>Qual Found | MSD<br>I %Recovery |         | Recovery<br>Limits | RPD Qu     | RPD<br>ual Limits | <u>Colum</u> n |
|-------------------------------------|------------------|-------------|--------------|-----------------|-------------------|--------------------|---------|--------------------|------------|-------------------|----------------|
| Microextractables by GC - MS Sample | Westborough I    | Lab Assoc   | iated sample | (s): 01 QC E    | Satch ID: WG204   | 0899-3 WG204       | 40899-4 | QC Samp            | le: L25149 | 74-01 Clie        | ent ID:        |
| 1,2-Dibromoethane                   | ND               | 0.248       | 0.227        | 92              | 0.220             | 88                 |         | 65-135             | 3          | 20                | Α              |
| 1,2-Dibromo-3-chloropropane         | ND               | 0.248       | 0.254        | 103             | 0.251             | 100                |         | 65-135             | 1          | 20                | Α              |
| 1,2,3-Trichloropropane              | ND               | 0.248       | 0.228        | 92              | 0.223             | 89                 |         | 65-135             | 2          | 20                | Α              |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514931

Report Date:

| Parameter                                | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | Recovery<br>Qual Limits | RPD    | RPD<br>Qual Limits |        |
|--|------------------|-------------|---------------|-----------------|----------|--------------|------------------|-------------------------|--------|--------------------|--------|
| Volatile Organics by GC/MS ID: MS Sample | - Westborou      | gh Lab A    | ssociated sam | ple(s): 01 C    | QC Batch | ID: WG204    | 40966-5 WG       | 2040966-6 QC Sa         | imple: | L2514974-01        | Client |
| Methyl tert butyl ether                  | ND               | 4           | 3.6           | 90              |          | 3.3          | 82               | 70-130                  | 9      | 20                 |        |
| 1,2-Dichloroethane                       | ND               | 4           | 4.2           | 105             |          | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Benzene                                  | ND               | 4           | 3.9           | 98              |          | 3.7          | 92               | 70-130                  | 5      | 20                 |        |
| Toluene                                  | ND               | 4           | 3.8           | 95              |          | 3.7          | 92               | 70-130                  | 3      | 20                 |        |
| Ethylbenzene                             | ND               | 4           | 4.2           | 105             |          | 3.9          | 98               | 70-130                  | 7      | 20                 |        |
| p/m-Xylene                               | ND               | 8           | 8.6           | 108             |          | 8.2          | 103              | 70-130                  | 5      | 20                 |        |
| o-Xylene                                 | ND               | 4           | 4.2           | 105             |          | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Isopropylbenzene                         | ND               | 4           | 4.0           | 100             |          | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,3,5-Trimethylbenzene                   | ND               | 4           | 4.0           | 100             |          | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,2,4-Trimethylbenzene                   | ND               | 4           | 3.9           | 98              |          | 3.6          | 90               | 70-130                  | 8      | 20                 |        |
| Naphthalene                              | ND               | 4           | 3.9           | 98              |          | 3.6          | 90               | 70-130                  | 8      | 20                 |        |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 99                   | 98                   | 80-120     |
| 4-Bromofluorobenzene   | 110                  | 108                  | 80-120     |



### **METALS**



03/12/25 11:35

Date Collected:

Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2514931-01

Client ID: 108 SPENCER ROAD-0-68 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result    | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-----------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals - | Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND        |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 16:21 | EPA 3005A      | 3,200.8              | MRC     |



L2514931

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

Project Number: Not Specified **Report Date:** 03/18/25

> **Method Blank Analysis Batch Quality Control**

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number: L2514931

Project Number: Not Specified

| Parameter                                   | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associated | d sample(s): 01  | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                             | 94               |          | -                 |      | 85-115              | -   |      |            |



### Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514931

| Parameter                   |               | Native<br>Sample | MS<br>Added  | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery Q | Recover<br>lual Limits | y<br>RPD Qua | RPD<br>Limits |
|-----------------------------|---------------|------------------|--------------|-------------|-----------------|---------|--------------|--------------------|------------------------|--------------|---------------|
| Dissolved Metals -<br>68 FT | Mansfield Lab | Associated       | sample(s): 0 | 1 QCB       | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931-0   | 01 Client ID:          | 108 SPENCE   | R ROAD-0-     |
| Lead, Dissolved             |               | ND               | 0.53         | 0.5081      | 96              |         | -            | -                  | 70-130                 | -            | 20            |
| Dissolved Metals -          | Mansfield Lab | Associated       | sample(s): 0 | 1 QCB       | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932-0   | 01 Client ID:          | MS Sample    |               |
| Lead, Dissolved             |               | ND               | 0.53         | 0.5218      | 98              |         | -            | -                  | 70-130                 | -            | 20            |



L2514931

# Lab Duplicate Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

| Parameter  | Native Sample     | Duplicate Sample       | Units       | RPD        | Qual RPD Limits       |
|--|-------------------|------------------------|-------------|------------|-----------------------|
| Dissolved Metals - Mansfield Lab Associated sample(s) FT | : 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | 108 SPENCER ROAD-0-68 |
| Lead, Dissolved  | ND                | ND                     | mg/l        | NC         | 20                    |
| Dissolved Metals - Mansfield Lab Associated sample(s)    | : 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | DUP Sample            |
| Lead, Dissolved  | ND                | ND                     | mg/l        | NC         | 20                    |



Project Name: SUNOCO PIPELINE LP (SPLP)

Lab Number: L2514931

Project Number: Not Specified Report Date: 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent

| Container Information Container ID Container Type L2514931-01A Vial HCl preserved |                              |        | Initial | Final | Temp  |      |        | Frozen    |               |
|---|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID  | Container Type               | Cooler | рН      | рН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514931-01A  | Vial HCI preserved           | А      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514931-01B  | Vial HCI preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514931-01C  | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514931-01D  | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514931-01E  | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514931-01F  | Plastic 250ml HNO3 preserved | Α      | <2      | <2    | 2.6   | Υ    | Absent |           | PB-2008S(180) |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

#### **GLOSSARY**

#### **Acronyms**

EDL

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

 Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only )

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

 Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyle ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
  of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

#### Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- V The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514931Project Number:Not SpecifiedReport Date:03/18/25

### **REFERENCES**

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

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Published Date: 01/24/2025

### Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

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### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113



|   |  |          | _           |                                       |                   |                      |                     |             |            |            | _  |            |                  |                | _         |                |                       |          |  |
|---|--|----------|-------------|---------------------------------------|-------------------|----------------------|---------------------|-------------|------------|------------|--|------------|------------------|----------------|-----------|----------------|-----------------------|----------|--|
| Pace Pace Location R  | equested (Ci   | ty/St    | ate):       | CHAIN-OF-                             | CUSTODY           | Analytical R         | lequest l           | Docur       | nent       |            |  |            |                  |                | LABU      | SE CINEY: A    | ffix Worklande        | rd.ngin  | Catalities   |
| Pace Westborough, N   | I.A.   |          |             | Christ-of                             | Costody is all fi | TAL DODGAMENT Com    | بيرماه البهجو       | or Baldie   |            |            |  | 恩族         |                  | <b>E</b>       |           |                |                       |          |  |
| GES, Inc.   |  |          |             | Contact/Report To: 1                  |                   |                      |                     |             |            |            |  | 20         |                  | 2              |           |                |                       |          |  |
| trad Address:   |  |          |             | Phine# (610) 45                       | 8-1077x306        | 4 / (610) 458-23     | 00                  |             |            |            |  | <b>分</b> 集 |                  | 凝              |           |                |                       |          |  |
| 410 Eagleview Blvd, Suite   | 110  |          |             |                                       |                   | m: gesinbex@ge       |                     | Mil         |            |            |  | 100        | 11.7             | 0.             | Scan      | OR Code        | for instruct          | tions    |  |
| Exton, PA 19341   |  |          |             |                                       |                   | @movsld.com;         |                     |             | moon       |            | III NECTONA  |            |                  |                |           |                |                       |          |  |
| actions Populati  |  |          |             | bwsice to: ges-invo                   |                   |                      |                     |             |            |            |  |            |                  |                |           |                |                       |          |  |
| roject Name:  |  |          |             | Invoice E-mail:                       |                   |                      |                     |             |            |            |  |            |                  | Specify Co     | ntimer 5  | 0.0.44         |                       |          | **Continuer Slat: (1) 1L. (2) 500mc, 17( 250mc.  |
| Sunoco Pipeline LP (SPLP) Was                                     | shington Crossi  | ing      |             | ges-invoices@g                        | esonline.co       | om                   |                     |             |            |            | 6  | 6          | 3                |                |           |                |                       |          | (4) 125mi, (5) 100mi, (8) 80mi etal (7) Entire.<br>(8) TeotaGote, (9) 90mi, (10) Other                       |
| re Collection in for(Facility III (in application))               |  |          |             | Purchase Draw # (#                    |                   |                      |                     |             |            |            |  |            | He               | nilly Contiine | Fresery   | ative Type *** |                       |          | *** Preservative Types (1) Norm, (2) NNO1, (3) NO  |
| Washington Crossing,  | PA   |          |             | medicable 02250                       | 40-06-160         |                      |                     |             |            |            | 4  | 8          | 2                |                |           |                |                       |          | WORKS (SOMEON, 1867); Assentin, CT Marrick, (80'S)<br>Francisco, VIII Assentin Auta, Stri Medin, 1551 (200). |
|   | -  |          |             | Ethintie 8;                           |                   |                      |                     |             |            |            |  |            |                  | desalyse       | Regres    | (red           | _                     | _        | 70.7   |
| me June Collected:     AK       PT       MT                       | ila Xa   |          |             | County / State orteo o                | f cample(s): P    | A                    |                     |             |            |            |  |            |                  |                |           | 1 1            |                       | 111      | Proj. Mgr  |
| eta (hili) erablet.   | Regulatory Program (I  | DW, MCB/ | ( HE) M D   | experiable. Reportable (-) Yes 1/) No |                   |                      |                     |             |            | 4          |  |            |                  |                |           |                | Acriffium / Client ID |          |  |
| Level #     Level #     Level #                                   | DW   |          |             | 417 1                                 |                   |                      |                     |             |            |            | 524.2  | EP         |                  |                |           |                |                       |          | . ≥  |
|   | Renh (Pre-approvat)  |          |             |                                       | VON T             | DW PWSID if or V     | VIV Permit # m      | applicable  | 1          |            | 324  | -02        |                  |                |           | 1 1            |                       |          | S Tuble #  |
| Xeane   | Same Day     1-1   | nak I Is | s day 1 1   | Day Creer at the                      |                   |                      | 100                 | V           |            |            | EPA 6  | ethane     | (pa              |                |           |                |                       |          | 3  |
| 1 Dither  | Requested: AS  | AP       |             |                                       |                   | Analysis Lead        | rest (if applicable | all N.Y.    | n ( In     | 0          | VOCs<br>(list below), EF<br>1,2-Dipromostl<br>504.1<br>Lead (dissolve<br>, EPA 200.8 |            |                  |                |           | 1 1            | 1                     |          | 3 Pinfile / Semplane   |
| Makrie Cooling (Season in Mattischere Indone): Drinking Weber (Dr | treducament.   |          | DANKE Front | unt (PE, York/Subdiction) con-        | CILL Was film T   |                      | por IVI Dafface V   | harr gw     | Selferenti | SED!       | 3  | E G        | dissolv<br>200.8 | MA.            | 1         |                |                       |          | Prelog / fluttle Ord. 10   |
| Shalps (SI), Cariff (CM), Leachate (LL), Benefid (III), Otto      | es (O1)  |          |             |                                       |                   |                      |                     |             |            |            | elo<br>elo   | ē.         | 20               |                | 11        |                |                       |          |  |
| Customer Sample ID  |  | Malris * | Comp/       | Composité                             | Start             | Collected or Co      | respector End       | # Cont      | British    | Otherw     | 200  | 24         | Lead (           |                |           |                |                       |          | Sample Comment   |
|   | _  |          | tirah       | Detre                                 | Time              | Date                 | Time                |             | Bend       | Units      | > €  | + 10       | 200              |                | -         | $\rightarrow$  | _                     | -        | Sanda Constitut  |
| 108 Spencer Road - 0-68   | 8 ft (   | GW       | G           |                                       |                   | 3/12/25              | 1135                | 6           |            |            | X  | X          | X                |                |           |                |                       |          |  |
|   |  |          |             |                                       |                   |                      |                     |             |            |            |  |            |                  |                |           |                |                       |          |  |
| dottoral extrictions from case                                    |  | _        | _           |                                       | Collected B       | Jason                | C-0                 | MA          | _          | -          | Custo  | mer lie    | marks /          | Special Cond   | titions / | Vocatible N    | atante:               | -        | -  |
| OCs by EPA 524.2 list: BTEX,                                      | Isopropylbenze   | ene, N   | ATBE.       | Naphthalene.                          |                   | detacat              | CLO                 | ric         |            |            |  |            |                  |                |           |                | 4,611,581             |          |  |
| ,2,4-Trimethylbenzene, 1,3,5-Tr                                   | rimethylbenzen   | ie, 1,2  | 2-Dichl     | oroethane                             | Signature         | toook                | 1an                 | . 0         |            |            | il frame   | and .      | Theatr           | ilitetal E:    | Connect   | un Factor ("C) | GAL THE               | milita.  | Corrected Terror ("C) 1 ( Din top  |
|   |  | -        | District    |                                       | ,                 | WAL                  | 00                  | 2           |            |            | 11   | 1          |                  |                | _         | v 1=           |                       | Barrio . |  |
| Thrend one  | GES  |          | 3           | 114/25/                               | 1540              | 177                  | Tunner X            | ac          | 4          | - 7        | 3/10   | 115        | 1                | Data/Des.      | 41        | 40             |                       | Transcr  | ry, fluoritier:  |
| the service of  | September  |          | Digital     | 7-111                                 | 100               | The Carlo            | digitali            | 110         | -          | _          | 4  | 4          | )                | stand/Tries.)  | 118       | 1              | 1.1                   | Trains   | miles I to Name 2 Miles  |
| 1601  | 0  |          | - 5         | 114123                                | 191               | (1)                  | _                   | /           |            |            |  |            |                  | 2              | 2/7       |                | 110                   | District | end the     te-Person       Consum   |
| demanded by Committee of Inches and                               | (1   |          | 134         | The last                              |                   | present physicians   | (Tigrald's)         | 12 6        | 2000       | 2          |  |            |                  | "MAR           | 14        | 2025           | Ser.                  |          | I telex     LIPS       Comm  |
| Standard Sections of Columbia                                     | 20 2   | 7        | Titles      | Witness .                             |                   | Reserved to Compario | Samon               | 7 50        | 7          | 2          |  | _          |                  |                |           | 200            |                       | 1        | interest and   |
| Cai   | And in case of the last of the | 3,20     |             |                                       |                   |                      | 1                   | 1           | 10         | -          |  |            |                  | 3/10           | 6         | - 6            | 2                     |          | Page: of   |
| open it in a mountain a disconstruction of a                      | mennes regentation   | #menter  | ntaccent    | enceafthePace* 1                      | enm and Frind     | mont found federal.  | /into sourelates    | DOTTAFILITY | ofposidan  | daril-tree | munot.   |            |                  |                |           | 2              |                       | -        | FRV.FRM.CORD-0919 Litt. 110121 ID  |
| C   | -  | 62       | 6-96        | 1-1                                   |                   |                      |                     |             |            |            |  |            |                  |                |           |                |                       |          |  |
|   | -549   | 1        | 1           | 15725                                 | CH                |                      | 1                   | _ :         | 5/15/      | 25         | 042  | 5          |                  |                |           |                |                       |          |  |
|   |  |          |             |                                       | 1                 | 5                    |                     |             | 31         | 2          | 100  |            |                  |                |           |                |                       |          |  |
| ge 29 of 30   |  |          |             |                                       |                   |                      |                     |             |            |            |  |            |                  |                |           |                |                       |          |  |

Page 29 of 30

### Quantitation Report (QT Reviewed)

Data Path : K:\Charlie\2025\250315\

Data File: VC250315A18.D

Acq On : 15 Mar 2025 12:46 pm

Operator : CHARLIE:GMT

Sample : 12514931-01,31,5,5,,a
Misc : WG2040966,ICAL22000
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Mar 15 14:49:33 2025

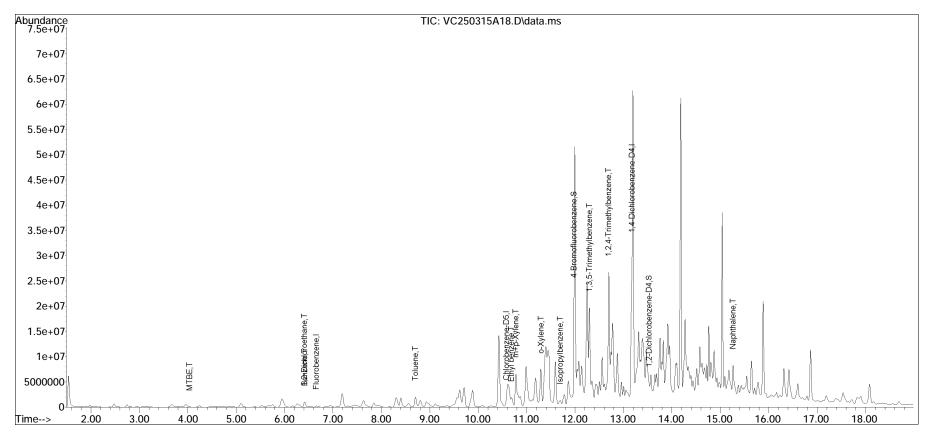
Quant Method: K:\Charlie\2025\250315\C\_250217A\_524.M

Quant Title : 524

QLast Update: Tue Feb 18 09:23:53 2025

Response via : Initial Calibration

Sub List : 524-SHORT+12DCA - 524-SHORTVC250315A01.D•



C\_250217A\_524.M Sat Mar 15 15:25:06 2025



### ANALYTICAL REPORT

Lab Number: L2514932

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514932

Report Date:

| Lab<br>Sample ID | Client ID                      | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |
|------------------|--------------------------------|--------|-------------------------|-------------------------|--------------|
| L2514932-01      | 108 SPENCER ROAD-100-110<br>FT | DW     | WASHINGTON CROSSING, PA | 03/12/25 14:35          | 03/14/25     |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

| i icase contact i roject ii | nanagement at 000 02+ 02 | 20 With any questions. |  |  |
|-----------------------------|--------------------------|------------------------|--|--|
|                             |                          |                        |  |  |
|                             |                          |                        |  |  |
|                             |                          |                        |  |  |
|                             |                          |                        |  |  |

Please contact Project Management at 800-624-9220 with any questions



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514932-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (121%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during the trip from the laboratory to the field and back to the laboratory. Any analytes detected are to be considered qualified.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Kelly Stenstrom

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Pace

# **ORGANICS**



### **VOLATILES**



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514932

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514932-01 Date Collected: 03/12/25 14:35

Client ID: 108 SPENCER ROAD-100-110 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw Extraction Method: EPA 504.1
Analytical Method: 14,504.1 Extraction Date: 03/15/25 09:33

Analytical Date: 03/15/25 14:43

Analyst: JKH

| Parameter                                | Result | Qualifier | Units | RL    | MDL   | <b>Dilution Factor</b> | Column |
|--|--------|-----------|-------|-------|-------|------------------------|--------|
| Microextractables by GC - Westborough La | b      |           |       |       |       |                        |        |
| 1,2-Dibromoethane                        | ND     |           | ug/l  | 0.010 | 0.005 | 1                      | Α      |



L2514932

03/18/25

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified

**SAMPLE RESULTS** 

Date Collected: 03/12/25 14:35

Lab Number:

Report Date:

Lab ID: L2514932-01 Client ID: 108 SPENCER ROAD-100-110 FT Date Received: 03/14/25 Field Prep: Sample Location: WASHINGTON CROSSING, PA Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 13:10

Analyst: GMT

| Parameter                      | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |
|--------------------------------|----------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab |           |       |      |      |                 |
| Methyl tert butyl ether        | 0.17           | J         | ug/l  | 0.50 | 0.13 | 1               |
| 1,2-Dichloroethane             | 0.18           | J         | ug/l  | 0.50 | 0.15 | 1               |
| Benzene                        | 7.4            |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                        | 14             |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                   | 0.97           |           | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                     | 31             |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                       | 27             |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene               | 0.62           |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene         | 58             |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene         | 46             |           | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                    | 27             |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total¹                | 58             |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 102        |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 121        | Q         | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514932

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:00 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result      | Qualifier   | Units | RL           | MDL    |   |
|------------------------------------|-------------|-------------|-------|--------------|--------|---|
| Microextractables by GC - Westbord | ough Lab fo | r sample(s) | : 01  | Batch: WG204 | 0899-1 |   |
| 1,2-Dibromoethane                  | ND          |             | ug/l  | 0.010        | 0.005  | Α |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514932

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 07:15

Analyst: GMT

| Parameter                          | Result     | Qualifier   | Units    | RL     | MDL         |
|------------------------------------|------------|-------------|----------|--------|-------------|
| Volatile Organics by GC/MS - Westh | orough Lal | o for sampl | e(s): 01 | Batch: | WG2040966-4 |
| Methyl tert butyl ether            | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                 | ND         |             | ug/l     | 0.50   | 0.15        |
| Benzene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Toluene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                       | ND         |             | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                         | ND         |             | ug/l     | 0.50   | 0.30        |
| o-Xylene                           | ND         |             | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                   | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.13        |
| Naphthalene                        | ND         |             | ug/l     | 0.50   | 0.14        |
| Xylenes, Total <sup>1</sup>        | ND         |             | ug/l     | 0.50   | 0.19        |

|                        |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 113                | 80-120     |
| 4-Bromofluorobenzene   | 94                 | 80-120     |



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

Lab Number:

L2514932

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recovery | Qual      | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-------------------|-----------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough L | ab Associated    | sample(s): | 01 Batch: W       | G2040899- | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 98               |            | -                 |           | 70-130              | -   |      |               | Α      |



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514932

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual          | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---|------------------|---------------|-------------------|---------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s): | 01 Batch:         | WG20409 | 066-3               |     |      |               |  |
| Methyl tert butyl ether                 | 100              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                      | 128              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                                 | 105              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                                 | 102              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                            | 118              |               | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                              | 125              |               | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                                | 120              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                        | 112              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                  | 120              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                  | 115              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                             | 82               |               | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 93<br>108             |                   |      | 80-120<br>80-120       |



# Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514932

Report Date:

| Parameter                            | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | MSD<br>Qual Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD     |                   | RPD<br>Limits | <u>Column</u> |
|--------------------------------------|------------------|-------------|---------------|-----------------|-------------------|------------------|--------|--------------------|---------|-------------------|---------------|---------------|
| Microextractables by GC - NMS Sample | Westborough I    | Lab Assoc   | iated sample( | (s): 01 QC E    | Batch ID: WG2040  | 899-3 WG204      | 0899-4 | QC Samp            | le: L25 | 514974-0 <i>°</i> | 1 Clie        | ent ID:       |
| 1,2-Dibromoethane                    | ND               | 0.248       | 0.227         | 92              | 0.220             | 88               |        | 65-135             | 3       |                   | 20            | Α             |
| 1,2-Dibromo-3-chloropropane          | ND               | 0.248       | 0.254         | 103             | 0.251             | 100              |        | 65-135             | 1       |                   | 20            | Α             |
| 1,2,3-Trichloropropane               | ND               | 0.248       | 0.228         | 92              | 0.223             | 89               |        | 65-135             | 2       |                   | 20            | Α             |



# Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514932

Report Date:

| Parameter                                | Native<br>Sample | MS<br>Added | MS<br>Found    | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Recovery<br>Qual Limits | RPD    | RPD<br>Qual Limits |        |
|--|------------------|-------------|----------------|-----------------|---------|--------------|------------------|-------------------------|--------|--------------------|--------|
| Volatile Organics by GC/MS ID: MS Sample | - Westborou      | gh Lab      | Associated sam | ple(s): 01 C    | C Batch | ID: WG20     | 40966-5 WG       | 2040966-6 QC S          | ample: | L2514974-01        | Client |
| Methyl tert butyl ether                  | ND               | 4           | 3.6            | 90              |         | 3.3          | 82               | 70-130                  | 9      | 20                 |        |
| 1,2-Dichloroethane                       | ND               | 4           | 4.2            | 105             |         | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Benzene                                  | ND               | 4           | 3.9            | 98              |         | 3.7          | 92               | 70-130                  | 5      | 20                 |        |
| Toluene                                  | ND               | 4           | 3.8            | 95              |         | 3.7          | 92               | 70-130                  | 3      | 20                 |        |
| Ethylbenzene                             | ND               | 4           | 4.2            | 105             |         | 3.9          | 98               | 70-130                  | 7      | 20                 |        |
| p/m-Xylene                               | ND               | 8           | 8.6            | 108             |         | 8.2          | 103              | 70-130                  | 5      | 20                 |        |
| o-Xylene                                 | ND               | 4           | 4.2            | 105             |         | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Isopropylbenzene                         | ND               | 4           | 4.0            | 100             |         | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,3,5-Trimethylbenzene                   | ND               | 4           | 4.0            | 100             |         | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,2,4-Trimethylbenzene                   | ND               | 4           | 3.9            | 98              |         | 3.6          | 90               | 70-130                  | 8      | 20                 |        |
| Naphthalene                              | ND               | 4           | 3.9            | 98              |         | 3.6          | 90               | 70-130                  | 8      | 20                 |        |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 99                   | 98                   | 80-120     |
| 4-Bromofluorobenzene   | 110                  | 108                  | 80-120     |



### **METALS**



03/12/25 14:35

Date Collected:

Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2514932-01

Client ID: 108 SPENCER ROAD-100-110 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result    | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-----------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
|                    |           |           |       |        |        |                    |                  |                  |                |                      |         |
| Dissolved Metals - | Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND        |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:0  | 4 EPA 3005A    | 3,200.8              | MRC     |



L2514932

**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number:

**Project Number:** Not Specified

**Report Date:** 03/18/25

**Method Blank Analysis Batch Quality Control** 

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP) Not Specified

**Project Number:** 

Lab Number:

L2514932

Report Date:

| Parameter                                   | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associated | d sample(s): 01  | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                             | 94               |          | <del>-</del>      |      | 85-115              | -   |      |            |



### Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514932

Report Date:

| Parameter                           | Native<br>Sample        | MS<br>Added  | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery Q | Recovery<br>ual Limits | y<br>RPD Qua | RPD<br>al Limits |
|-------------------------------------|-------------------------|--------------|-------------|-----------------|---------|--------------|--------------------|------------------------|--------------|------------------|
| Dissolved Metals - Ma               | ansfield Lab Associated | sample(s): 0 | 1 QC B      | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931-0   | 01 Client ID:          | MS Sample    |                  |
| Lead, Dissolved                     | ND                      | 0.53         | 0.5081      | 96              |         | -            | -                  | 70-130                 | -            | 20               |
| Dissolved Metals - Ma<br>100-110 FT | ansfield Lab Associated | sample(s): 0 | 01 QCB      | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932-(   | )1 Client ID:          | 108 SPENCE   | ER ROAD-         |
| Lead, Dissolved                     | ND                      | 0.53         | 0.5218      | 98              |         | -            | -                  | 70-130                 | -            | 20               |



L2514932

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

| Parameter   | Native Sample   | Duplicate Sample       | Units       | RPD        | Qual RPD Limits       |
|---|-----------------|------------------------|-------------|------------|-----------------------|
| Dissolved Metals - Mansfield Lab Associated sample(s):        | 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | DUP Sample            |
| Lead, Dissolved   | ND              | ND                     | mg/l        | NC         | 20                    |
| Dissolved Metals - Mansfield Lab Associated sample(s): 110 FT | 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | 108 SPENCER ROAD-100- |
| Lead, Dissolved   | ND              | ND                     | mg/l        | NC         | 20                    |



SUNOCO PIPELINE LP (SPLP)

Lab Number: L2514932

Project Number: Not Specified Report Date: 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Project Name:

Cooler Custody Seal

A Absent

| Container Info | Container Information        |        |    |         | Temp |      |        | Frozen    |               |
|----------------|------------------------------|--------|----|---------|------|------|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler | pН | pH pH ( |      | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514932-01A   | Vial HCl preserved           | Α      | NA |         | 2.6  | Υ    | Absent |           | 524.2(14)     |
| L2514932-01B   | Vial HCI preserved           | Α      | NA |         | 2.6  | Υ    | Absent |           | 524.2(14)     |
| L2514932-01C   | Vial HCI preserved           | Α      | NA |         | 2.6  | Υ    | Absent |           | 524.2(14)     |
| L2514932-01D   | Vial Na2S2O3 preserved       | Α      | NA |         | 2.6  | Υ    | Absent |           | 504(14)       |
| L2514932-01E   | Vial Na2S2O3 preserved       | Α      | NA |         | 2.6  | Υ    | Absent |           | 504(14)       |
| L2514932-01F   | Plastic 250ml HNO3 preserved | Α      | <2 | <2      | 2.6  | Υ    | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514932 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### Acronyms

EDL

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

**EMPC** - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration. **EPA** 

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

Environmental Protection Agency.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

> - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

> Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gescling Pance Organics (GPO): Gescling Pance Organics (GPO) results include all chromatographic peaks aluting from Mathyl test buts.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benzo(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
  of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514932Project Number:Not SpecifiedReport Date:03/18/25

## REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

## **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

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## **Certification Information**

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

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## **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| Pace Westborough, N   | //A                                 | City/SI        | tate):          | Chan-al-  | Castody is a CE<br>Stephanie G | Analytical R                     | plate all taleyan |              | nent         |       |                  | のない。                          |               |            | LABO       | L25               | 149          | 32           |   |
|---|-------------------------------------|----------------|-----------------|---|--------------------------------|----------------------------------|-------------------|--------------|--------------|-------|------------------|-------------------------------|---------------|------------|------------|-------------------|--------------|--------------|---|
| 410 Eagleview Blvd, Suite<br>Exton, PA 19341  | 110                                 |                |                 | FM#E SGrillo@g  | esonline.co                    | m; gesinbox@ge<br>@envstd.com; d | esanline co       |              | iom.         |       |                  |                               |               | ·          | Scar       | UES               | -P           | A-           | ER  |
| Sinterior Project 6   |                                     |                |                 | invoice to: gas invol                                 |                                |                                  | louidiodeia       | SAIMING A    | Adir.        |       |                  |                               |               |            |            | VI) district      | n-maranetti. | II .         |   |
| Sunoco Pipeline LP (SPLP) Wa  | shington Cros                       | sing           |                 | ges-invoices@g  | esonline.co                    | m                                |                   |              |              |       | 6                | 6                             | 3             | Specify (  | entanet Si | 1 1               | 1.1          | (6.1         | Inflaton Stor (1) 11, (2) 500om, (3) 250om,<br>(25m), (5) 180m, (6) 45m, val, (7) Endore<br>(economy, 16) 50m, (10) 60m                           |
| Washington Crossing   | PA                                  |                |                 | Purchase Dider # (#<br>suplicable): 022504<br>Quote # | 10-06-160                      |                                  |                   |              |              |       |                  | 8                             | ister<br>2    |            | is Request | Gree Tigger white |              | 141.44       | Presentation Types (I) Never, (J) HNSS, (J) HZ<br>KS, D) Never, (J) Zo Autrole, (Z) Marrios, (J) So<br>milita, (M) Autrolia, (H) Antol. (II) (Zhe |
| me Zone Collected:     AK   | Tier X                              | T              |                 | County / Note origin e                                | fample(s): P                   | A                                |                   | _            |              | -     |                  |                               |               |            |            |                   | 1 1          |              | Proj. Mgr   |
| ala Deliveraldes  | Regulatory Program<br>DW            | TOW, RCR       | A, etc.) an     | applicable:   |                                |                                  | Repro             | rtidle [ ]   | Vec ! Tito   |       |                  | V                             |               |            |            |                   |              |              | Accitium / Chest ID   |
| Livel H     Livel H     Livel N   | Rush (Pre-approv                    |                |                 | 3 Day Other 24 rote                                   |                                | DW PWSD # or W                   | W Pount I m.      | mpfcal/u     |              |       | 524.2            | e, EF                         |               |            |            |                   |              | Aug a        | Tielle K  |
| L joines  | Date Bussile                        | SAP            | Screen 1        | 48 ha   |                                | field fillion                    | ed Of applicable  | el: X        | s   1 No     |       | EPA              | 1,2-Dibromoethane, E<br>504.1 | (peylor)<br>8 |            |            |                   |              | 3            | Profile / Template:   |
| Adabas Codes (America Matrix base below): Drinking Water (i<br>Skudge (SL), Court (CCL), Learnage (LL), (Removal 405), Ou | RVI, Ground Water (GW),<br>en: (CT) | Wintesute      | PANY), Pro-     | elut (P), Soll Schill (S), CB (I                      | 31), Wpe (WP), 11              | coore (TS), Bissessay (B), Vap   | er (V), Surface V | Victor (SW). | Sectional IS | ml.   | s<br>(woled      | Maram                         | diss<br>200   |            | 1          |                   | 11           |              | Printe / Buttle Ove. ID:  |
| Cavilinner Sample 10  |                                     | Atlatria.*     | Comp /          | Composite S<br>Date                                   | Time                           | Collected or Cor                 | Time              | # Cont.      | Recipiad C   |       | VOCs<br>(list be | 1,2-C                         | EPA EPA       |            |            |                   | 14.1         |              | Sample Comment  |
| 108 Spencer Road -100   | -110 ft                             | GW             | G               |   |                                | 3/12/25                          | 1435              | 6            |              | wints | X                | X                             | X             |            |            |                   |              |              |   |
|   |                                     |                |                 |   |                                |                                  |                   |              |              |       |                  |                               |               |            |            |                   |              |              |   |
|   |                                     |                |                 |   |                                |                                  |                   | -            |              | H     |                  |                               |               |            | -          |                   | +            |              |   |
|   |                                     |                |                 |   |                                |                                  |                   |              |              |       |                  |                               |               | 1          | 1          |                   | 14           | 1            |   |
|   |                                     |                |                 |   |                                |                                  |                   |              |              |       |                  |                               |               | +          | +          |                   | +            | +            |   |
|   |                                     |                |                 |   |                                |                                  |                   |              |              |       |                  |                               |               |            |            |                   |              | 4            |   |
| dditional Instructions from Pace®   |                                     | 1              | _               |   | Callected the                  | Tav                              | 0                 |              |              | _     | Custon           | mer Ro                        | marks f       | nertal Cor | ditiems /  | Progrible Har     | tards        |              |   |
| OCs by EPA 524.2 list; BTEX, 1,2,4-Trimethylbenzene, 1,3,5-T  | lsopropylben:<br>rimethylbenze      | zene, Mane, 1. | ATBE,<br>2-Dich | Naphthalene,<br>loroethane                            | Printed Name<br>September      | Jason                            | Prou              |              |              |       | # Civing         |                               |               | TWO BE     |            | n Frene ("Q       | Die Temp.    | (10)         | Genedial Sens. (10)   |
| Harry Ou  | ne                                  |                | Day.            | 7/14/25/  | 1546                           | Mon                              | Section of        | ac           | K            |       | 3                | 14                            | 1/23          | atu/files  | 15.        | 40                | _            | Falling Uses |   |
| Commission (In/Contrary) (Cityraphre)   |                                     |                | 15              | 14175   | 1416                           | Instituted by/Galgarilly         | (Manuflick)       | 0            |              | _     | _ ^              |                               |               | DY A       | 1 200      | 141               | ~            |              | ( ) to Person ( ) Compar-   |
| test by/Consent Digrature   | 5                                   |                | 2.0             | dy 1 E  |                                | Insured bull gapling?            | L 150 16          | 400          | 1000         |       |                  |                               |               | MAR 1      | 4 202      | 3 250             | 35           |              | [ ] FedEN       UP3       Other   |

## Quantitation Report (QT Reviewed)

Data Path : K:\Charlie\2025\250315\

Data File: VC250315A19.D

Acq On : 15 Mar 2025 1:10 pm

Operator : CHARLIE:GMT

Sample : 12514932-01,31,5,5,,a
Misc : WG2040966,ICAL22000
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Mar 15 15:12:38 2025

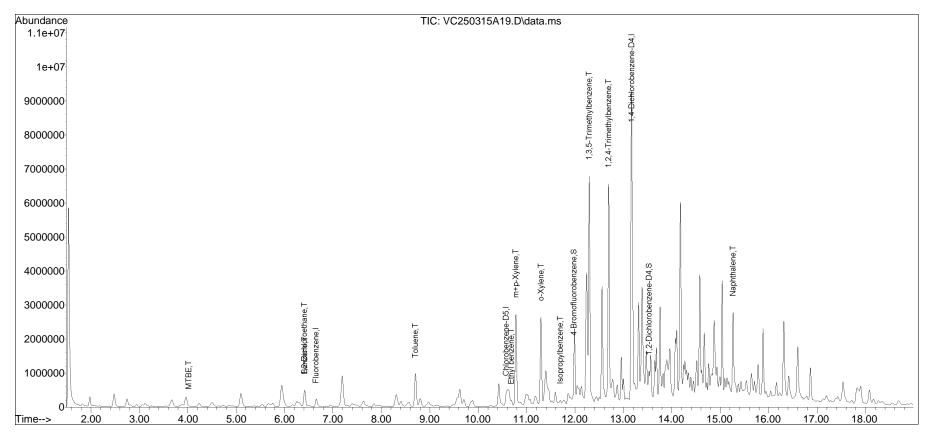
Quant Method: K:\Charlie\2025\250315\C\_250217A\_524.M

Quant Title : 524

QLast Update: Tue Feb 18 09:23:53 2025

Response via : Initial Calibration

Sub List : 524-SHORT+12DCA - 524-SHORTVC250315A01.D•



C\_250217A\_524.M Sat Mar 15 15:25:10 2025



## ANALYTICAL REPORT

Lab Number: L2514933

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514933

Report Date:

| Lab<br>Sample ID | Client ID                      | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |
|------------------|--------------------------------|--------|-------------------------|-------------------------|--------------|
| L2514933-01      | 108 SPENCER ROAD-120-130<br>FT | DW     | WASHINGTON CROSSING, PA | 03/12/25 16:05          | 03/14/25     |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

## **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

## **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514933-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (124%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during the trip from the laboratory to the field and back to the laboratory. Any analytes detected are to be considered qualified.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Kelly Stenstrom

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Pace

# **ORGANICS**



## **VOLATILES**



SUNOCO PIPELINE LP (SPLP) **Project Name:** Lab Number: L2514933

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514933-01 Date Collected: 03/12/25 16:05

Date Received: Client ID: 108 SPENCER ROAD-120-130 FT 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Extraction Method: EPA 504.1 Matrix: Dw **Extraction Date:** 03/15/25 09:33 Analytical Method: 14,504.1

Analytical Date: 03/15/25 14:51

Analyst: JKH

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514933

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

OAMI LE REGOL

Lab ID:L2514933-01Date Collected:03/12/25 16:05Client ID:108 SPENCER ROAD-120-130 FTDate Received:03/14/25Sample Location:WASHINGTON CROSSING, PAField Prep:Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 13:33

Analyst: GMT

| Parameter                      | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |
|--------------------------------|----------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab |           |       |      |      |                 |
| Mothyd tout hystyd othou       | 0.15           |           | /1    | 0.50 | 0.13 | 1               |
| Methyl tert butyl ether        | 0.15           | J         | ug/l  | 0.50 | 0.13 | I               |
| 1,2-Dichloroethane             | 0.28           | J         | ug/l  | 0.50 | 0.15 | 1               |
| Benzene                        | 11             |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                        | 24             |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                   | 1.3            |           | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                     | 37             |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                       | 28             |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene               | 0.78           |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene         | 80             |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene         | 67             |           | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                    | 34             |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total <sup>1</sup>    | 65             |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 100        |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 124        | Q         | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514933

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:00 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result      | Qualifier   | Units | RL           | MDL    |   |
|------------------------------------|-------------|-------------|-------|--------------|--------|---|
| Microextractables by GC - Westbord | ough Lab fo | r sample(s) | : 01  | Batch: WG204 | 0899-1 |   |
| 1,2-Dibromoethane                  | ND          |             | ug/l  | 0.010        | 0.005  | А |



L2514933

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 07:15

Analyst: GMT

| Parameter                          | Result     | Qualifier   | Units    | RL     | MDL         |
|------------------------------------|------------|-------------|----------|--------|-------------|
| Volatile Organics by GC/MS - Westh | orough Lal | o for sampl | e(s): 01 | Batch: | WG2040966-4 |
| Methyl tert butyl ether            | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                 | ND         |             | ug/l     | 0.50   | 0.15        |
| Benzene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Toluene                            | ND         |             | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                       | ND         |             | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                         | ND         |             | ug/l     | 0.50   | 0.30        |
| o-Xylene                           | ND         |             | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                   | ND         |             | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene             | ND         |             | ug/l     | 0.50   | 0.13        |
| Naphthalene                        | ND         |             | ug/l     | 0.50   | 0.14        |
| Xylenes, Total <sup>1</sup>        | ND         |             | ug/l     | 0.50   | 0.19        |

|                        |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 113                | 80-120     |
| 4-Bromofluorobenzene   | 94                 | 80-120     |



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Lab Number:

L2514933 03/18/25

Not Specified Report Date:

| Danamatan                                | LCS           | Oval       | LCSD<br>%Recove |             | %Recovery | 000 | Ovel | RPD<br>Limito | 0.1    |
|--|---------------|------------|-----------------|-------------|-----------|-----|------|---------------|--------|
| Parameter                                | %Recovery     | Qual       | /orrecove       | ery Qual    | Limits    | RPD | Qual | Limits        | Column |
| Microextractables by GC - Westborough La | ab Associated | sample(s): | 01 Batch:       | WG2040899-2 | 2         |     |      |               |        |
| 1,2-Dibromoethane                        | 98            |            | -               |             | 70-130    | -   |      |               | Α      |



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514933

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual          | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---|------------------|---------------|-------------------|---------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westboroug | gh Lab Associat  | ed sample(s): | 01 Batch:         | WG20409 | 066-3               |     |      |               |  |
| Methyl tert butyl ether                 | 100              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                      | 128              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                                 | 105              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                                 | 102              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                            | 118              |               | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                              | 125              |               | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                                | 120              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                        | 112              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                  | 120              |               | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                  | 115              |               | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                             | 82               |               | -                 |         | 70-130              | =   |      | 20            |  |

| Surrogate                                   | LCS            | LCSD         | Acceptance       |
|---|----------------|--------------|------------------|
|   | %Recovery Qual | %Recovery Qu | al Criteria      |
| 1,2-Dichlorobenzene-d4 4-Bromofluorobenzene | 93<br>108      |              | 80-120<br>80-120 |



# Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514933

Report Date:

| Parameter                            | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | MSD<br>Qual Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD     |                   | RPD<br>Limits | <u>Column</u> |
|--------------------------------------|------------------|-------------|---------------|-----------------|-------------------|------------------|--------|--------------------|---------|-------------------|---------------|---------------|
| Microextractables by GC - NMS Sample | Westborough I    | Lab Assoc   | iated sample( | (s): 01 QC E    | Batch ID: WG2040  | 899-3 WG204      | 0899-4 | QC Samp            | le: L25 | 514974-0 <i>°</i> | 1 Clie        | ent ID:       |
| 1,2-Dibromoethane                    | ND               | 0.248       | 0.227         | 92              | 0.220             | 88               |        | 65-135             | 3       |                   | 20            | Α             |
| 1,2-Dibromo-3-chloropropane          | ND               | 0.248       | 0.254         | 103             | 0.251             | 100              |        | 65-135             | 1       |                   | 20            | Α             |
| 1,2,3-Trichloropropane               | ND               | 0.248       | 0.228         | 92              | 0.223             | 89               |        | 65-135             | 2       |                   | 20            | Α             |



# Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514933

Report Date:

| Parameter                                | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | Recovery<br>Qual Limits | RPD    | RPD<br>Qual Limits |        |
|--|------------------|-------------|---------------|-----------------|----------|--------------|------------------|-------------------------|--------|--------------------|--------|
| Volatile Organics by GC/MS ID: MS Sample | - Westborou      | ıgh Lab As  | ssociated sam | ple(s): 01 C    | QC Batch | ID: WG20     | 40966-5 WG       | 2040966-6 QC Sa         | ample: | L2514974-01        | Client |
| Methyl tert butyl ether                  | ND               | 4           | 3.6           | 90              |          | 3.3          | 82               | 70-130                  | 9      | 20                 |        |
| 1,2-Dichloroethane                       | ND               | 4           | 4.2           | 105             |          | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Benzene                                  | ND               | 4           | 3.9           | 98              |          | 3.7          | 92               | 70-130                  | 5      | 20                 |        |
| Toluene                                  | ND               | 4           | 3.8           | 95              |          | 3.7          | 92               | 70-130                  | 3      | 20                 |        |
| Ethylbenzene                             | ND               | 4           | 4.2           | 105             |          | 3.9          | 98               | 70-130                  | 7      | 20                 |        |
| p/m-Xylene                               | ND               | 8           | 8.6           | 108             |          | 8.2          | 103              | 70-130                  | 5      | 20                 |        |
| o-Xylene                                 | ND               | 4           | 4.2           | 105             |          | 4.0          | 100              | 70-130                  | 5      | 20                 |        |
| Isopropylbenzene                         | ND               | 4           | 4.0           | 100             |          | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,3,5-Trimethylbenzene                   | ND               | 4           | 4.0           | 100             |          | 3.8          | 95               | 70-130                  | 5      | 20                 |        |
| 1,2,4-Trimethylbenzene                   | ND               | 4           | 3.9           | 98              |          | 3.6          | 90               | 70-130                  | 8      | 20                 |        |
| Naphthalene                              | ND               | 4           | 3.9           | 98              |          | 3.6          | 90               | 70-130                  | 8      | 20                 |        |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 99                   | 98                   | 80-120     |
| 4-Bromofluorobenzene   | 110                  | 108                  | 80-120     |



## **METALS**



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: Date Collected: 03/12/25 16:05

Client ID: 108 SPENCER ROAD-120-130 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result    | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-----------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
|                    |           |           |       |        |        |                    |                  |                  |                |                      |         |
| Dissolved Metals - | Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND        |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:18 | B EPA 3005A    | 3,200.8              | MRC     |



L2514933

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified

**Report Date:** 03/18/25

Lab Number:

**Method Blank Analysis Batch Quality Control** 

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

L2514933

Project Number: Not Specified

Report Date:

| Parameter                                  | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |  |
|--|------------------|----------|-------------------|------|---------------------|-----|------|------------|--|
| Dissolved Metals - Mansfield Lab Associate | ed sample(s): 01 | Batch: V | VG2040887-2       |      |                     |     |      |            |  |
| Lead, Dissolved                            | 94               |          | -                 |      | 85-115              | -   |      |            |  |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514933

Report Date:

| Parameter              | Native<br>Sample       | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery 0 | Recove<br>Qual Limit | ,           | RPD<br>al Limits |
|------------------------|------------------------|-------------|-------------|-----------------|---------|--------------|--------------------|----------------------|-------------|------------------|
| Dissolved Metals - Mar | nsfield Lab Associated | sample(s):  | 01 QC Ba    | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931-    | 01 Client ID         | : MS Sample |                  |
| Lead, Dissolved        | ND                     | 0.53        | 0.5081      | 96              |         | -            | -                  | 70-130               | -           | 20               |
| Dissolved Metals - Mar | nsfield Lab Associated | sample(s):  | 01 QC Ba    | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932-    | 01 Client ID         | : MS Sample |                  |
| Lead, Dissolved        | ND                     | 0.53        | 0.5218      | 98              |         | -            | -                  | 70-130               | -           | 20               |



# Lab Duplicate Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

. . . . .

L2514933 03/18/25

Report Date:

| Parameter   | Native Sample     | Duplicate Sample       | Units       | RPD        | Qual RPI     | D Limits |
|---|-------------------|------------------------|-------------|------------|--------------|----------|
| Dissolved Metals - Mansfield Lab Associated sample(s) | : 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | : DUP Sample |          |
| Lead, Dissolved                                       | ND                | ND                     | mg/l        | NC         |              | 20       |
| Dissolved Metals - Mansfield Lab Associated sample(s) | : 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | : DUP Sample |          |
| Lead, Dissolved                                       | ND                | ND                     | mg/l        | NC         |              | 20       |



Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

## Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent

| Container Info | ormation                     |        | Initial | Final | Temp  |      |        | Frozen    |               |
|----------------|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler | pН      | рН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514933-01A   | Vial HCI preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514933-01B   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514933-01C   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514933-01D   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514933-01E   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514933-01F   | Plastic 250ml HNO3 preserved | Α      | <2      | <2    | 2.6   | Υ    | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514933 **Report Date: Project Number:** Not Specified 03/18/25

### GLOSSARY

### **Acronyms**

**EDL** 

**EMPC** 

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

**EPA** Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

## Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514933Project Number:Not SpecifiedReport Date:03/18/25

## **REFERENCES**

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

## **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



ID No.:17873

Published Date: 01/24/2025

Revision 27

Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

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## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan III, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

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## **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| Pace "Location Re<br>Westborough, M  |                    | City/St                                    | ate):                                | Chain-of  | Costinty is a \ El                       | Analytical  |      |    | nent      |                    | LAB USE ONLY- Affic Workprintle ogen Lakel fram |         |                           |   |        |  |         |                       |  |  |  |
|--|--------------------|--|--------------------------------------|---|--|---|------|----|-----------|--------------------|---|---------|---------------------------|---|--------|--|---------|-----------------------|--|--|--|
| Non Address GES, Inc.<br>410 Eagleview Blvd, Suite 1<br>Exton, PA 19341  | 110                |  |                                      | **************************************  |  |   |      |    |           |                    |   |         | L2514933<br>GES – PA – ER |   |        |  |         |                       |  |  |  |
| indumer Project #<br>Project Hamm<br>Sunoco Pipeline LP (SPLP) Was   | hington Cros       | sing                                       |                                      | Invoice to: gas-invoi<br>Invace L-mult<br>gas-invoices@g  | ces@gesonle                              | Wr.COM  |      |    |           |                    | Specify Contained Size **                       |         |                           |   |        |  |         |                       |  |  |  |
| Washington Crossing, PA  |                    |  |                                      | Functions Order # (#<br>septicable): 0225040-06-160<br>timose #:  |  |   |      |    |           |                    | 4 8   | 1       | _                         | Monthly Contained Preservative Type***  Asselys's Requested |        |  |         |                       | Can Process elice Types (2) House, (2) HORSE, (A) (22)<br>(4) (4), (5) Horse, (4) Ex Azerban, (7) Horse, (4) Horse,<br>(7) Horse, (6) Horse, (7) Hors |  |  |
| mo.duse Collected:   J.M. J. 191   J.M.T.  |                    |  |                                      | County/State organ of sample(s): PA   |  |   |      |    |           |                    |   |         |                           |   |        |  |         |                       | Proj. Mgr  |  |  |
| Outs Ontiveralities:   | Regulatory Program | (DW) RCS.                                  | A, etc.) on                          | s applicable:     Yes     No  |  |   |      |    |           |                    |   | ₹       |                           |   |        |  |         |                       | AlatMim / Client ID  |  |  |
| Kezons ) ) Level 16  | Rosh (Pre-approvi  |  |                                      | Day One 24 Fol  | OW PWSID flar WW Permit flas applicable: |   |      |    |           | A 524.2            | lane, Er  | (1)     |                           |   |        |  |         | Table #               |  |  |  |
| Other  | Requested: A       | SAP  |                                      | 48 1  | COUL                                     | nold littered (if applicable): [Ave.   1-hin<br>Analysis: Load        |      |    |           |                    | EPA   |         | lived)                    |   | ΚП     |  |         | 1 1                   | 5 Frofile / Terrotate  |  |  |
| The special control of |                    |  |                                      | Product (P), Sod/Solid (SS), CH (CH), Wilpin (WP), Tissum (TS), Revenue (R), Vapor (V), Surface Water (SW), Sediment (SED), |  |   |      |    |           | S below).          | T Talloca                                       | A 200.8 |                           |   |        | -                                      |         | Prolog / Bottle Old D |  |  |  |
| Customer Sample ID   |                    | Matris *                                   | Graft                                | Composite Start Date Time   |  | Callected or Companies End. B Cont. Benished Olds Date Time Result. U |      |    | Notice    | VOCs<br>(list belo | 504   | EPA     |                           |   |        |  |         | Sample Communi        |  |  |  |
| 108 Spencer Road -120-   | 130 ft             | GW   | G                                    |   |  | 3/12/25   | 1605 | 6  |           |                    | X.  | X)      | X                         |   |        |  |         |                       |  |  |  |
|  |                    |  |                                      |   |  |   |      |    |           |                    |   |         |                           |   |        |  |         |                       |  |  |  |
|  |                    |  |                                      |   |  |   |      |    |           |                    |   |         |                           |   |        |  | 1       |                       |  |  |  |
|  |                    |  |                                      |   |  |   |      |    |           |                    |   | 1       |                           |   |        |  | 1       |                       |  |  |  |
| Additional transportation from Vage* VOGs by EPA 524.2 list: BTEX, I   | sopropylben        | zene, N                                    | ATBE,                                | Naphthalene,  | Collected to<br>Printed Name             |   | Crow | _  |           | - 1                |   |         |                           | ipecial Cond  |        |  |         | 1                     |  |  |  |
| 1,2,4-Trimethylbenzens, 1,3,5-Tr   | imethylbenze       | ene, 1,                                    | 2-Dich                               | oroethane   | Signature *                              | Jones -   | Com  |    |           |                    | # CAMBO   | ,       | flatte                    | Hodder (D   | CHENNE | PARKET CO.                             | Dep. Te |                       | Control Sensi (*G)   1 (On ter   |  |  |
| fasa James G65   |                    | Date                                       | 3/14/25/1940 may to proceed to the 3 |   |  |   |      | 3/ | 114/25    |                    |   | 045 46  |                           |   |        | Today                                  |         |                       |  |  |  |
| atornated by the hart Death hart   |                    |  | page                                 | Halford 25 1911 turined Influentillar Walnut 28007  |  |   |      |    |           |                    | MAR 1 4 2025                                    |         |                           |   | 0      | Delivered by: 1 1th Person   1 Courses |         |                       |  |  |  |
| throughout to Company Separates Company 1, 19 3 (2) 19, Bally  |                    | bertain bereated by Conduct Classification |                                      |   |  |   |      |    | Data/ling |                    |   |         |                           | Page: of  |        |  |         |                       |  |  |  |

01

## Quantitation Report (QT Reviewed)

Data Path : K:\Charlie\2025\250315\

Data File: VC250315A20.D

Acq On : 15 Mar 2025 1:33 pm

Operator : CHARLIE:GMT

Sample : 12514933-01,31,5,5,,a
Misc : WG2040966,ICAL22000
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Mar 15 15:13:18 2025

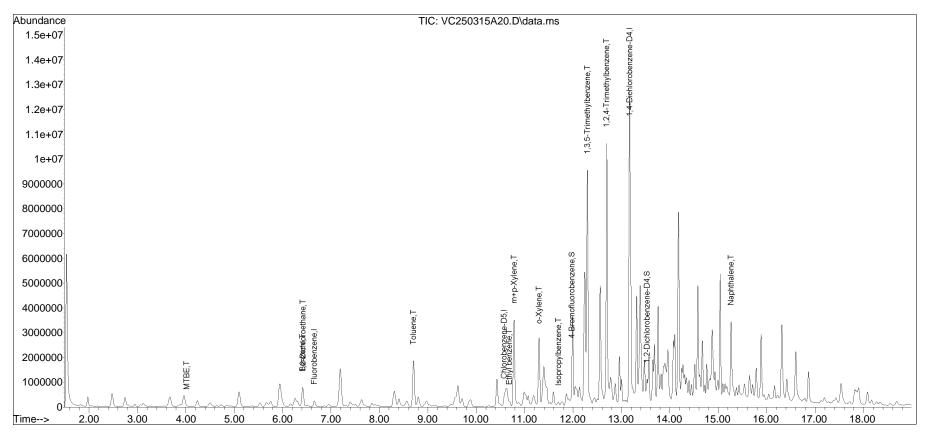
Quant Method: K:\Charlie\2025\250315\C\_250217A\_524.M

Quant Title : 524

QLast Update : Tue Feb 18 09:23:53 2025

Response via : Initial Calibration

Sub List : 524-SHORT+12DCA - 524-SHORTVC250315A01.D•



C\_250217A\_524.M Sat Mar 15 15:25:14 2025



## ANALYTICAL REPORT

Lab Number: L2514934

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

03/18/25

| Lab<br>Sample ID | Client ID                | Matrix | Sample<br>Location      | Collection Date/Time | Receive Date |
|------------------|--------------------------|--------|-------------------------|----------------------|--------------|
| L2514934-01      | 108 SPENCER ROAD-155-165 | DW     | WASHINGTON CROSSING, PA | 03/13/25 10:40       | 03/14/25     |

FT



#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514934Project Number:Not SpecifiedReport Date:03/18/25

### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Sufani Morrissey-Tiffani Morrissey

Pace

# **ORGANICS**



### **VOLATILES**



SUNOCO PIPELINE LP (SPLP) **Project Name:** Lab Number: L2514934

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514934-01 Date Collected: 03/13/25 10:40

Date Received: Client ID: 108 SPENCER ROAD-155-165 FT 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Extraction Method: EPA 504.1 Matrix: Dw **Extraction Date:** 03/15/25 09:33 Analytical Method: 14,504.1

Analytical Date: Analyst: JKH

03/15/25 13:48

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number: L2514934

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514934-01 Date Collected: 03/13/25 10:40

Client ID: 108 SPENCER ROAD-155-165 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 15:09

Analyst: MKS

| Parameter                                    | Result | Qualifier | Units | RL   | MDL  | Dilution Factor |  |  |
|--|--------|-----------|-------|------|------|-----------------|--|--|
| Volatile Organics by GC/MS - Westborough Lab |        |           |       |      |      |                 |  |  |
| Methyl tert butyl ether                      | 0.18   | J         | ug/l  | 0.50 | 0.13 | 1               |  |  |
| 1,2-Dichloroethane                           | 0.43   | J         | ug/l  | 0.50 | 0.15 | 1               |  |  |
| Benzene                                      | 14     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |
| Toluene                                      | 25     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |
| Ethylbenzene                                 | 1.8    |           | ug/l  | 0.50 | 0.13 | 1               |  |  |
| p/m-Xylene                                   | 36     |           | ug/l  | 0.50 | 0.30 | 1               |  |  |
| o-Xylene                                     | 19     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |
| Isopropylbenzene                             | 1.2    |           | ug/l  | 0.50 | 0.13 | 1               |  |  |
| 1,3,5-Trimethylbenzene                       | 96     | Е         | ug/l  | 0.50 | 0.15 | 1               |  |  |
| 1,2,4-Trimethylbenzene                       | 99     | Е         | ug/l  | 0.50 | 0.13 | 1               |  |  |
| Naphthalene                                  | 44     |           | ug/l  | 0.50 | 0.14 | 1               |  |  |
| Xylenes, Total <sup>1</sup>                  | 55     |           | ug/l  | 0.50 | 0.19 | 1               |  |  |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 102        |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 88         |           | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514934

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514934-01 D Date Collected: 03/13/25 10:40

Client ID: 108 SPENCER ROAD-155-165 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/17/25 13:22

Analyst: GMT

| Parameter                                    | Result | Qualifier | Units | RL  | MDL  | Dilution Factor |  |  |  |
|--|--------|-----------|-------|-----|------|-----------------|--|--|--|
| Volatile Organics by GC/MS - Westborough Lab |        |           |       |     |      |                 |  |  |  |
| 1,3,5-Trimethylbenzene                       | 76     |           | ug/l  | 2.5 | 0.73 | 5               |  |  |  |
| 1,2,4-Trimethylbenzene                       | 73     |           | ug/l  | 2.5 | 0.63 | 5               |  |  |  |
|  |        |           |       |     |      |                 |  |  |  |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 89         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 115        |           | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514934

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:14 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result      | Qualifier | Units | RL        | MDL       |   |
|------------------------------------|-------------|-----------|-------|-----------|-----------|---|
| Microextractables by GC - Westbord | ugh Lab for | sample(s) | : 01  | Batch: WG | 2040903-1 |   |
| 1,2-Dibromoethane                  | ND          |           | ug/l  | 0.010     | 0.005     | Α |



L2514934

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

**Project Number:** Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 06:53

Analyst: GMT

| 1,2-Dichloroethane         ND           Benzene         ND           Toluene         ND           Ethylbenzene         ND           p/m-Xylene         ND | s): 01 Ba<br>ug/l<br>ug/l<br>ug/l | o.50<br>0.50 | 0.13<br>0.15 |
|---|-----------------------------------|--------------|--------------|
| 1,2-Dichloroethane ND  Benzene ND  Toluene ND  Ethylbenzene ND  p/m-Xylene ND   | ug/l                              |              |              |
| Benzene ND Toluene ND Ethylbenzene ND p/m-Xylene ND   |                                   | 0.50         | 0.15         |
| Toluene ND Ethylbenzene ND p/m-Xylene ND  | ua/l                              |              | 0.13         |
| Ethylbenzene ND p/m-Xylene ND   | ug/i                              | 0.50         | 0.19         |
| p/m-Xylene ND   | ug/l                              | 0.50         | 0.19         |
|   | ug/l                              | 0.50         | 0.13         |
|   | ug/l                              | 0.50         | 0.30         |
| o-Xylene ND   | ug/l                              | 0.50         | 0.19         |
| Isopropylbenzene ND   | ug/l                              | 0.50         | 0.13         |
| 1,3,5-Trimethylbenzene ND   | ug/l                              | 0.50         | 0.15         |
| 1,2,4-Trimethylbenzene ND   | ug/l                              | 0.50         | 0.13         |
| Naphthalene ND  | ug/l                              | 0.50         | 0.14         |
| Xylenes, Total <sup>1</sup> ND  | ug/l                              | 0.50         | 0.19         |

|                        |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 103                | 80-120     |
| 4-Bromofluorobenzene   | 92                 | 80-120     |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514934

**Project Number:** Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/17/25 10:13

Analyst: MKS

| Parameter                         | Result      | Qualifier | Units    | RL     | MDL         |
|-----------------------------------|-------------|-----------|----------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sampl | e(s): 01 | Batch: | WG2042029-4 |
| Methyl tert butyl ether           | ND          |           | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |           | ug/l     | 0.50   | 0.15        |
| Benzene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Toluene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |           | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |           | ug/l     | 0.50   | 0.30        |
| o-Xylene                          | ND          |           | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |           | ug/l     | 0.50   | 0.13        |
| Xylenes, Total <sup>1</sup>       | ND          |           | ug/l     | 0.50   | 0.19        |
| 1,3,5-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.13        |
| Naphthalene                       | ND          |           | ug/l     | 0.50   | 0.14        |

|                        |              | Acceptance        |
|------------------------|--------------|-------------------|
| Surrogate              | %Recovery Qu | ialifier Criteria |
| 1,2-Dichlorobenzene-d4 | 106          | 80-120            |
| 4-Bromofluorobenzene   | 92           | 80-120            |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

Lab Number:

L2514934 03/18/25

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recovery | Qual      | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-------------------|-----------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough L | ab Associated    | sample(s): | 01 Batch: WG      | 32040903- | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 111              |            | -                 |           | 70-130              | -   |      |               | Α      |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

Lab Number:

L2514934

Report Date:

| Parameter                            | LCS<br>%Recovery  | Qual        | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|--------------------------------------|-------------------|-------------|-------------------|---------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Westboro | ugh Lab Associate | ed sample(s | ): 01 Batch:      | WG20409 | 970-3               |     |      |               |  |
| Methyl tert butyl ether              | 115               |             | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                   | 128               |             | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                              | 122               |             | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                              | 118               |             | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                         | 110               |             | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                           | 111               |             | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                             | 108               |             | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                     | 112               |             | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene               | 108               |             | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene               | 110               |             | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                          | 102               |             | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 101<br>94             |                   |      | 80-120<br>80-120       |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---|------------------|--------------|-------------------|---------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s) | ): 01 Batch:      | WG20420 | )29-3               |     |      |               |  |
| Methyl tert butyl ether                 | 85               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                      | 115              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                                 | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                                 | 90               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                            | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                              | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                                | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                        | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                             | 80               |              | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 99<br>110             |                   |      | 80-120<br>80-120       |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

|                             | Native          | MS       | MS             | MS           |           | MSD     | MSD       |        | Recovery   |        |         | RPD    |               |
|-----------------------------|-----------------|----------|----------------|--------------|-----------|---------|-----------|--------|------------|--------|---------|--------|---------------|
| Parameter                   | Sample          | Added    | Found          | %Recovery    | Qual      | Found   | %Recovery | Qual   | Limits     | RPD    | Qual    | Limits | <u>Column</u> |
| Microextractables by GC -   | · Westborough I | _ab Asso | ciated sample( | (s): 01 QC E | Batch ID: | WG20409 | 03-3 QC S | ample: | L2514460-0 | )1 Cli | ent ID: | MS San | nple          |
| 1,2-Dibromoethane           | ND              | 0.252    | 0.254          | 101          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |
| 1,2-Dibromo-3-chloropropane | ND              | 0.252    | 0.305          | 121          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |
| 1,2,3-Trichloropropane      | ND              | 0.252    | 0.258          | 102          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | / Qual | Recovery<br>Limits | RPD   | Qual     | RPD<br>Limits |
|----------------------------|------------------|-------------|---------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | gh Lab A    | ssociated sam | ple(s): 01 (    | QC Batch | D: WG20      | 40970-6 Q        | C Samp | ole: L25149        | 13-01 | Client I | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 4.0           | 100             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.7           | 118             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Benzene                    | ND               | 4           | 4.6           | 115             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Toluene                    | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Ethylbenzene               | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| p/m-Xylene                 | ND               | 8           | 8.5           | 106             |          | -            | -                |        | 70-130             | -     |          | 20            |
| o-Xylene                   | ND               | 4           | 4.1           | 103             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Isopropylbenzene           | ND               | 4           | 4.3           | 108             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,3,5-Trimethylbenzene     | ND               | 4           | 4.4           | 110             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2,4-Trimethylbenzene     | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Naphthalene                | ND               | 4           | 3.5           | 88              |          | -            | -                |        | 70-130             | -     |          | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 100                  |                      | 80-120     |
| 4-Bromofluorobenzene   | 100                  |                      | 80-120     |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found    | MS<br>%Recovery | ' Qual   | MSD<br>Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD   | Qual     | RPD<br>Limits |
|----------------------------|------------------|-------------|----------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | gh Lab A    | Associated sam | ple(s): 01 (    | QC Batch | ID: WG20     | 42029-6 C        | C Samp | le: L25149         | 38-01 | Client I | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 3.1            | 78              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.4            | 110             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Benzene                    | 12               | 4           | 14             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Toluene                    | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Ethylbenzene               | 0.54             | 4           | 4.2            | 92              |          | -            | -                |        | 70-130             | -     |          | 20            |
| p/m-Xylene                 | 5.7              | 8           | 13             | 91              |          | -            | -                |        | 70-130             | -     |          | 20            |
| o-Xylene                   | 6.4              | 4           | 9.7            | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| Isopropylbenzene           | 0.50             | 4           | 3.8            | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,3,5-Trimethylbenzene     | 16               | 4           | 18             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2,4-Trimethylbenzene     | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Naphthalene                | 15               | 4           | 18             | 75              |          | -            | -                |        | 70-130             | -     |          | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 98                   |                      | 80-120     |
| 4-Bromofluorobenzene   | 112                  |                      | 80-120     |



L2514934

## Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified Lab Number:

03/18/25

Report Date:

|   |                          |                    |               |            |         | RPD               |      |
|---|--------------------------|--------------------|---------------|------------|---------|-------------------|------|
| arameter                                    | Native Sample            | Duplicate Sample   | Units         | RPD        | Qual    | Limits            |      |
| olatile Organics by GC/MS - Westborough Lab | Associated sample(s): 01 | QC Batch ID: WG204 | 0970-5 QC Sar | mple: L251 | 4912-01 | Client ID: DUP Sa | mple |
| Methyl tert butyl ether                     | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| 1,2-Dichloroethane                          | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Benzene                                     | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Toluene                                     | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Ethylbenzene                                | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| p/m-Xylene                                  | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| o-Xylene                                    | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Isopropylbenzene                            | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| 1,3,5-Trimethylbenzene                      | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| 1,2,4-Trimethylbenzene                      | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Naphthalene                                 | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
| Xylene (Total) <sup>1</sup>                 | ND                       | ND                 | ug/l          | NC         |         | 20                |      |
|   |                          |                    |               |            |         |                   |      |

|                        |                     | A                     |          |  |  |  |
|------------------------|---------------------|-----------------------|----------|--|--|--|
| Surrogate              | %Recovery Qualifier | r %Recovery Qualifier | Criteria |  |  |  |
| 1,2-Dichlorobenzene-d4 | 109                 | 111                   | 80-120   |  |  |  |
| 4-Bromofluorobenzene   | 86                  | 85                    | 80-120   |  |  |  |



L2514934

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

uality Control Lab Number:

**Report Date:** 03/18/25

| Native Sample Associated sample(s): 01  ND  ND | Duplicate Sample  QC Batch ID: WG204  ND               | Units<br>2029-5 QC Sar  |  | <b>Qual</b><br>4937-01 (   | Limits  Client ID: DUP Sample  |
|--|--|---|--|--|--|
| ND   |  |   |  | 4937-01 (  | Client ID: DUP Sampl   |
|  | ND   | ua/l  |  |  |  |
| ND   |  | ~ <del>5</del> , '  | NC   |  | 20   |
| IND  | ND   | ug/l  | NC   |  | 20   |
| 10   | 11   | ug/l  | 10   |  | 20   |
| 33   | 34   | ug/l  | 3  |  | 20   |
| 1.1  | 1.2  | ug/l  | 9  |  | 20   |
| 18   | 20   | ug/l  | 11   |  | 20   |
| 7.7  | 8.3  | ug/l  | 8  |  | 20   |
| 0.67   | 0.72   | ug/l  | 7  |  | 20   |
| 50   | 55   | ug/l  | 10   |  | 20   |
| 46   | 51   | ug/l  | 10   |  | 20   |
| 25   | 25   | ug/l  | 0  |  | 20   |
| 26   | 28   | ug/l  | 10   |  | 20   |
|  | 10<br>33<br>1.1<br>18<br>7.7<br>0.67<br>50<br>46<br>25 | 10     11       33     34       1.1     1.2       18     20       7.7     8.3       0.67     0.72       50     55       46     51       25     25 | 10     11     ug/l       33     34     ug/l       1.1     1.2     ug/l       18     20     ug/l       7.7     8.3     ug/l       0.67     0.72     ug/l       50     55     ug/l       46     51     ug/l       25     25     ug/l | 10     11     ug/l     10       33     34     ug/l     3       1.1     1.2     ug/l     9       18     20     ug/l     11       7.7     8.3     ug/l     8       0.67     0.72     ug/l     7       50     55     ug/l     10       46     51     ug/l     10       25     25     ug/l     0 | 10     11     ug/l     10       33     34     ug/l     3       1.1     1.2     ug/l     9       18     20     ug/l     11       7.7     8.3     ug/l     8       0.67     0.72     ug/l     7       50     55     ug/l     10       46     51     ug/l     10       25     25     ug/l     0 |

| Surrogate              | %Recovery Qualifier | %Recovery | Qualifier | Criteria |  |  |  |  |  |
|------------------------|---------------------|-----------|-----------|----------|--|--|--|--|--|
| 1,2-Dichlorobenzene-d4 | 95                  | 101       |           | 80-120   |  |  |  |  |  |
| 4-Bromofluorobenzene   | 116                 | 121       | Q         | 80-120   |  |  |  |  |  |



### **METALS**



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514934Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2514934-01 Date Collected: 03/13/25 10:40

Client ID: 108 SPENCER ROAD-155-165 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result      | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-------------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals - | - Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND          |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:23 | 3 EPA 3005A    | 3,200.8              | MRC     |



**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number:

L2514934 Project Number: Not Specified

**Report Date:** 03/18/25

Method Blank Analysis Batch Quality Control

| Parameter        | Result          | Qualifier  | Units    | RL       | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytica<br>Method | l<br>Analyst |
|------------------|-----------------|------------|----------|----------|--------|--------------------|------------------|------------------|---------------------|--------------|
| Dissolved Metals | - Mansfield Lab | for sample | e(s): 01 | Batch: V | VG2040 | 887-1              |                  |                  |                     |              |
| Lead, Dissolved  | ND              |            | mg/l     | 0.0010   | 0.0003 | 1                  | 03/15/25 09:37   | 03/15/25 16:07   | 3,200.8             | MRC          |

**Prep Information** 

Digestion Method: EPA 3005A



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number: L2514934

Project Number: Not Specified

**Report Date:** 03/18/25

| Parameter                                   | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associated | d sample(s): 01  | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                             | 94               |          | -                 |      | 85-115              | -   |      |            |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514934

Report Date:

| Parameter                   | Native<br>Sample | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Qual | Recovery<br>Limits | RPD    | Qual | RPD<br>Limits |
|-----------------------------|------------------|-------------|-------------|-----------------|---------|--------------|------------------|------|--------------------|--------|------|---------------|
| Dissolved Metals - Mansfiel | d Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931   | -01  | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved             | ND               | 0.53        | 0.5081      | 96              |         | -            | -                |      | 70-130             | -      |      | 20            |
| Dissolved Metals - Mansfiel | d Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932   | 2-01 | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved             | ND               | 0.53        | 0.5218      | 98              |         | -            | -                |      | 70-130             | -      |      | 20            |



L2514934

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

**Report Date:** 03/18/25

| Parameter  | Native Sample     | Duplicate Sample       | Units       | RPD        | Qual RP    | D Limits |
|--|-------------------|------------------------|-------------|------------|------------|----------|
| Dissolved Metals - Mansfield Lab Associated sample(s): | 01 QC Batch ID: W | VG2040887-4 QC Sample: | L2514931-01 | Client ID: | DUP Sample |          |
| Lead, Dissolved  | ND                | ND                     | mg/l        | NC         |            | 20       |
| Dissolved Metals - Mansfield Lab Associated sample(s): | 01 QC Batch ID: W | VG2040887-6 QC Sample: | L2514932-01 | Client ID: | DUP Sample |          |
| Lead, Dissolved  | ND                | ND                     | mg/l        | NC         |            | 20       |



Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number: L2514934
Report Date: 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent

| Container Info | ormation                     | Initial F |    | Temp |           |   | Frozen |           |               |
|----------------|------------------------------|-----------|----|------|-----------|---|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler    | pН | pН   | deg C Pre |   | Seal   | Date/Time | Analysis(*)   |
| L2514934-01A   | Vial HCI preserved           | Α         | NA |      | 2.6       | Υ | Absent |           | 524.2(14)     |
| L2514934-01B   | Vial HCI preserved           | Α         | NA |      | 2.6       | Υ | Absent |           | 524.2(14)     |
| L2514934-01C   | Vial HCI preserved           | Α         | NA |      | 2.6       | Υ | Absent |           | 524.2(14)     |
| L2514934-01D   | Vial Na2S2O3 preserved       | Α         | NA |      | 2.6       | Υ | Absent |           | 504(14)       |
| L2514934-01E   | Vial Na2S2O3 preserved       | Α         | NA |      | 2.6       | Υ | Absent |           | 504(14)       |
| L2514934-01F   | Plastic 250ml HNO3 preserved | Α         | <2 | <2   | 2.6       | Υ | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514934 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### **Acronyms**

**EDL** 

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated

values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

**EMPC** - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration. **EPA** 

Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butylether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations
  of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



#### REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

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Published Date: 01/24/2025

### Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 2 of 2

#### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANÁB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| Pace® Location Requested (City/State): Westborough, MA Chain-of-CustODY Analytical Request Document Chain-of-Cu |   |                |                 |                                   |   |                                |                     |           | L2514934 Scot GES — PA — ER |        |                                   |         |                      |            |       |   |            |           |                              |
|--|---|----------------|-----------------|-----------------------------------|---|--------------------------------|---------------------|-----------|-----------------------------|--------|-----------------------------------|---------|----------------------|------------|-------|---|------------|-----------|------------------------------|
| Cathonic Project #   |   |                | -               | paymenter, Date-lunging           |   |                                | des@ednise          | enline.   | com                         | -      |                                   |         |                      |            |       | i igani   |            |           |                              |
| Project Warm Sunoco Pipeline LP (SPLP) Washington Crossing the Latitudes Info/Partity to Las applicable!  Paichase   |   |                |                 |                                   | oveice E-mail<br>ges-Invoices@igesonline.com<br>Puichare Dider & III<br>epplication: 0225040-06-160 |                                |                     |           |                             |        | Specify Continuer Sci e **  6 6 3 |         |                      |            |       | **Container See: (1) LL (2) Storm, (3) Storm,<br>(4) Izhwa, (3) 1000es, (4) Sheet, wal (7) Enders<br>(6) Serrat Ces, (5) Seed, (10) Comes<br>*** Streamywither Types (1) Mores, (3) Mores, (3) House<br>(4) HC, (3) Mores, (6) Zee Austrian, (7) Associate, (6) See<br>Daniel See, (6) Austrian, (7) Associate, (7) Comes |            |           |                              |
| Time Zone Collected:     AK       PT       IMT   |   |                |                 |                                   |   |                                |                     |           |                             |        |                                   |         |                      |            | 1 1   |   | Frink Mar- |           |                              |
| Data Chilocralides   | Regulatory Program<br>DW                                  | (DW) BCB       | i, etc.) at a   | appelicable:                      |   |                                | Megar               | table [ ] | Ver I I No.                 |        | -                                 | EPA     |                      |            |       | 1 1   | 11.1       |           | Accthum / Clant ID:          |
| L Toronti   Therefor   Therefor  | Kush (Pre-approvi<br>   -Earles Day    <br>Data Results A | SAP            | ZONY 1 1        | 3 Easy Other #1700                | -   | Andysis Lead                   | nd (# applicable    | ×         | s.                          |        | EPA 524                           | elhane, | (dissalved)<br>200,8 |            |       |   |            |           | Table #                      |
| Matter Collection of Allerta Sea below: Drinking Water (D. Sketge (St.), Cwall (Cit), Leachate (LL), Brooking (RS), Otto-  | VC), Consumed Systems (F)W(),<br>or (VCT)                 | Wischenjestnie | PAPAS. Proc     | hart (F), Soul-South (SS), CO (F) | KJ. Wilson SWPS. To   | trans (TS), Dissessoy (H), Van | ser fVL Steffece: W | when ESWA | Sediment (5                 | :ni.   | VOCs<br>(list below), I           | Drige   | 2002                 |            |       | 1 1   | 11.1       | - 1       | Preton / Scottle Crot. 10.   |
| Customer Sample ID   |   | Matrix *       | Cump /<br>Graft | Compusite 5                       | tart  | Collected or Co.               |                     | 8 Cont    | Testina C                   |        | Stb                               | 2-0     | Lead EPA             |            | _     |   | -1-1       |           | Sample Communi               |
| 108 Spencer Road - 155   | -165 ft   | GW             | G               | Date                              | Time  | 3/13/25                        | 1040                | 6         | Result                      | Units. | X                                 | X       | X                    |            |       |   |            |           |                              |
|  |   |                |                 |                                   |   |                                |                     |           |                             |        |                                   |         |                      |            |       |   |            |           |                              |
|  |   |                |                 |                                   |   |                                |                     |           |                             |        |                                   |         |                      |            |       |   |            |           |                              |
|  |   |                |                 |                                   |   |                                |                     |           |                             |        |                                   |         |                      |            |       | 1   |            |           |                              |
| Additional fragmentation Root* VOCs by EPA 524.2 list: BTEX, 1,2,4-Trimethylbenzene, 1,3,5-Tr  |   |                |                 |                                   | Collected Br<br>Printed Nam<br>Signature  |                                | Cin                 | _         |                             |        | Guston                            |         |                      | Special Co |       | Possible Ha   |            | 70        | Creeder/Serp. FO F10s Se     |
| The second of th | ies .   |                | 7               | 14/25/                            | 1540  | The same                       | Cametary)           | ac        | 4                           |        | 3/1                               | 41      | he                   | Date/Read  | 516   | 10  | 9/0        | Delivered | by J. 116 Person I. TGoveter |
|  | (   |                | - 1             | 1115                              |   | Property                       | J. Commercial       | 11 11     | 1000                        |        |                                   |         |                      | MA         | K 1 4 | (0/3  | 255        |           | 1 Linux   Inst ( Louis       |

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### ANALYTICAL REPORT

Lab Number: L2514935

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| Lab<br>Sample ID | Client ID                      | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |
|------------------|--------------------------------|--------|-------------------------|-------------------------|--------------|
| L2514935-01      | 108 SPENCER ROAD-175-185<br>FT | DW     | WASHINGTON CROSSING, PA | 03/13/25 12:45          | 03/14/25     |



#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514935Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514935-01: The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during trip from laboratory to field and back to the laboratory. Analytes detected in this sample are to be considered qualified.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Sufani Morrissey-Tiffani Morrissey

Pace

# **ORGANICS**



### **VOLATILES**



Lab Number: **Project Name:** SUNOCO PIPELINE LP (SPLP) L2514935

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514935-01 Date Collected: 03/13/25 12:45

Date Received: Client ID: 108 SPENCER ROAD-175-185 FT 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Extraction Method: EPA 504.1 Matrix: Dw **Extraction Date:** 03/15/25 09:33 Analytical Method: 14,504.1

Analytical Date: 03/15/25 13:56

Analyst: JKH

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514935

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514935-01 Date Collected: 03/13/25 12:45

Client ID: 108 SPENCER ROAD-175-185 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 15:38

Analyst: MKS

| Parameter                       | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |  |
|---------------------------------|----------------|-----------|-------|------|------|-----------------|--|
| Volatile Organics by GC/MS - We | estborough Lab |           |       |      |      |                 |  |
| Methyl tert butyl ether         | 0.17           | J         | ug/l  | 0.50 | 0.13 | 1               |  |
| 1,2-Dichloroethane              | 0.35           | J         | ug/l  | 0.50 | 0.15 | 1               |  |
| Benzene                         | 14             |           | ug/l  | 0.50 | 0.19 | 1               |  |
| Toluene                         | 23             |           | ug/l  | 0.50 | 0.19 | 1               |  |
| Ethylbenzene                    | 1.8            |           | ug/l  | 0.50 | 0.13 | 1               |  |
| p/m-Xylene                      | 33             |           | ug/l  | 0.50 | 0.30 | 1               |  |
| o-Xylene                        | 14             |           | ug/l  | 0.50 | 0.19 | 1               |  |
| Isopropylbenzene                | 1.0            |           | ug/l  | 0.50 | 0.13 | 1               |  |
| 1,3,5-Trimethylbenzene          | 94             | Е         | ug/l  | 0.50 | 0.15 | 1               |  |
| 1,2,4-Trimethylbenzene          | 99             | Е         | ug/l  | 0.50 | 0.13 | 1               |  |
| Naphthalene                     | 42             |           | ug/l  | 0.50 | 0.14 | 1               |  |
| Xvlenes. Total <sup>1</sup>     | 47             |           | ua/l  | 0.50 | 0.19 | 1               |  |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 98         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 94         |           | 80-120                 |  |



03/13/25 12:45

Dilution Factor

80-120

Date Collected:

RI

MDI

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514935

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Result

D

L2514935-01

Client ID: 108 SPENCER ROAD-175-185 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Parameter

Lab ID:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/17/25 12:59

Analyst: GMT

4-Bromofluorobenzene

| i didilictei                         | Result   | Qualifici | Onito      | 112       | IVIDE           | Dilation i actor |  |
|--------------------------------------|----------|-----------|------------|-----------|-----------------|------------------|--|
| Volatile Organics by GC/MS - Westbor | ough Lab |           |            |           |                 |                  |  |
| 1,3,5-Trimethylbenzene               | 71       |           | ug/l       | 2.5       | 0.73            | 5                |  |
| 1,2,4-Trimethylbenzene               | 69       |           | ug/l       | 2.5       | 0.63            | 5                |  |
| Surrogate                            |          |           | % Recovery | Qualifier | Accept<br>Crite |                  |  |
| 1,2-Dichlorobenzene-d4               |          |           | 97         |           | 80-             | -120             |  |

Qualifier

Units

104



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514935

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:14 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                        | Result       | Qualifier    | Units | RL           | MDL    |   |
|----------------------------------|--------------|--------------|-------|--------------|--------|---|
| Microextractables by GC - Westbo | rough Lab fo | or sample(s) | : 01  | Batch: WG204 | 0903-1 |   |
| 1,2-Dibromoethane                | ND           |              | ug/l  | 0.010        | 0.005  | Α |



L2514935

Lab Number:

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 06:53

Analyst: GMT

| 1,2-Dichloroethane         ND           Benzene         ND           Toluene         ND           Ethylbenzene         ND           p/m-Xylene         ND | s): 01 Ba<br>ug/l<br>ug/l<br>ug/l | o.50<br>0.50 | 0.13<br>0.15 |
|---|-----------------------------------|--------------|--------------|
| 1,2-Dichloroethane ND  Benzene ND  Toluene ND  Ethylbenzene ND  p/m-Xylene ND   | ug/l                              |              |              |
| Benzene ND Toluene ND Ethylbenzene ND p/m-Xylene ND   |                                   | 0.50         | 0.15         |
| Toluene ND Ethylbenzene ND p/m-Xylene ND  | ua/l                              |              | 0.13         |
| Ethylbenzene ND p/m-Xylene ND   | ug/i                              | 0.50         | 0.19         |
| p/m-Xylene ND   | ug/l                              | 0.50         | 0.19         |
|   | ug/l                              | 0.50         | 0.13         |
|   | ug/l                              | 0.50         | 0.30         |
| o-Xylene ND   | ug/l                              | 0.50         | 0.19         |
| Isopropylbenzene ND   | ug/l                              | 0.50         | 0.13         |
| 1,3,5-Trimethylbenzene ND   | ug/l                              | 0.50         | 0.15         |
| 1,2,4-Trimethylbenzene ND   | ug/l                              | 0.50         | 0.13         |
| Naphthalene ND  | ug/l                              | 0.50         | 0.14         |
| Xylenes, Total <sup>1</sup> ND  | ug/l                              | 0.50         | 0.19         |

|                        |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 103                | 80-120     |
| 4-Bromofluorobenzene   | 92                 | 80-120     |



L2514935

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

**Project Number:** Not Specified **Report Date:** 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/17/25 10:13

Analyst: MKS

| Parameter                         | Result      | Qualifier | ifier Units |        | MDL         |
|-----------------------------------|-------------|-----------|-------------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sampl | e(s): 01    | Batch: | WG2042029-4 |
| Methyl tert butyl ether           | ND          |           | ug/l        | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |           | ug/l        | 0.50   | 0.15        |
| Benzene                           | ND          |           | ug/l        | 0.50   | 0.19        |
| Toluene                           | ND          |           | ug/l        | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |           | ug/l        | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |           | ug/l        | 0.50   | 0.30        |
| o-Xylene                          | ND          |           | ug/l        | 0.50   | 0.19        |
| Xylenes, Total <sup>1</sup>       | ND          |           | ug/l        | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |           | ug/l        | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene            | ND          |           | ug/l        | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |           | ug/l        | 0.50   | 0.13        |
| Naphthalene                       | ND          |           | ug/l        | 0.50   | 0.14        |

|                        |              | Acceptance        |
|------------------------|--------------|-------------------|
| Surrogate              | %Recovery Qu | ialifier Criteria |
| 1,2-Dichlorobenzene-d4 | 106          | 80-120            |
| 4-Bromofluorobenzene   | 92           | 80-120            |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** 

Not Specified

Lab Number:

L2514935

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recove | ry Qual     | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-----------------|-------------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough L | ab Associated    | sample(s): | 01 Batch:       | WG2040903-2 | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 111              |            | -               |             | 70-130              | -   |      |               | Α      |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

03/18/25

Report Date:

| <u>Parameter</u>                    | LCS<br>%Recovery    | Qual %        | LCSD<br>6Recovery | Qual     | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|-------------------------------------|---------------------|---------------|-------------------|----------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westbo | rough Lab Associate | ed sample(s): | 01 Batch:         | WG204097 | 70-3                |     |      |               |  |
| Methyl tert butyl ether             | 115                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                  | 128                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| Benzene                             | 122                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| Toluene                             | 118                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| Ethylbenzene                        | 110                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| p/m-Xylene                          | 111                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| o-Xylene                            | 108                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                    | 112                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene              | 108                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene              | 110                 |               | -                 |          | 70-130              | -   |      | 20            |  |
| Naphthalene                         | 102                 |               | -                 |          | 70-130              | -   |      | 20            |  |

| Surrogate                                   | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |  |
|---|-----------------------|-------------------|------|------------------------|--|
| 1,2-Dichlorobenzene-d4 4-Bromofluorobenzene | 101<br>94             |                   |      | 80-120<br>80-120       |  |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| arameter                               | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual     | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|--|------------------|--------------|-------------------|----------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s) | : 01 Batch:       | WG204202 | 29-3                |     |      |               |  |
| Methyl tert butyl ether                | 85               |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                     | 115              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Benzene                                | 95               |              | -                 |          | 70-130              | -   |      | 20            |  |
| Toluene                                | 90               |              | -                 |          | 70-130              | -   |      | 20            |  |
| Ethylbenzene                           | 95               |              | -                 |          | 70-130              | -   |      | 20            |  |
| p/m-Xylene                             | 100              |              | -                 |          | 70-130              | -   |      | 20            |  |
| o-Xylene                               | 100              |              | -                 |          | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                       | 92               |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                 | 92               |              | -                 |          | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                 | 92               |              | -                 |          | 70-130              | -   |      | 20            |  |
| Naphthalene                            | 80               |              | -                 |          | 70-130              | -   |      | 20            |  |

| Surrogate              | LCS<br>%Recovery Qual | LCSD<br>%Recovery Qu | Acceptance<br>ual Criteria |
|------------------------|-----------------------|----------------------|----------------------------|
| 1,2-Dichlorobenzene-d4 | 99                    |                      | 80-120                     |
| 4-Bromofluorobenzene   | 110                   |                      | 80-120                     |



Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| Parameter                   | Native<br>Sample | MS<br>Added | MS<br>Found  | MS<br>%Recovery | Qual      | MSD<br>Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD    | Qual    |        | <u>Column</u> |
|-----------------------------|------------------|-------------|--------------|-----------------|-----------|--------------|------------------|--------|--------------------|--------|---------|--------|---------------|
| Microextractables by GC -   | Westborough I    | _ab Assoc   | iated sample | (s): 01 QC E    | Batch ID: | WG20409      | 03-3 QC S        | ample: | L2514460-0         | )1 Cli | ent ID: | MS San | nple          |
| 1,2-Dibromoethane           | ND               | 0.252       | 0.254        | 101             |           | -            | -                |        | 65-135             | -      |         | 20     | Α             |
| 1,2-Dibromo-3-chloropropane | ND               | 0.252       | 0.305        | 121             |           | -            | -                |        | 65-135             | -      |         | 20     | Α             |
| 1,2,3-Trichloropropane      | ND               | 0.252       | 0.258        | 102             |           | -            | -                |        | 65-135             | -      |         | 20     | Α             |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | Qual   | Recovery<br>Limits | RPD   | Qual   | RPD<br>Limits |
|----------------------------|------------------|-------------|---------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|--------|---------------|
| Volatile Organics by GC/MS | - Westborou      | gh Lab A    | ssociated sam | ple(s): 01 (    | QC Batch | D: WG20      | 40970-6 Q        | C Samp | ole: L25149        | 13-01 | Client | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 4.0           | 100             |          | -            | -                |        | 70-130             | -     |        | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.7           | 118             |          | -            | -                |        | 70-130             | -     |        | 20            |
| Benzene                    | ND               | 4           | 4.6           | 115             |          | -            | -                |        | 70-130             | -     |        | 20            |
| Toluene                    | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |        | 20            |
| Ethylbenzene               | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |        | 20            |
| p/m-Xylene                 | ND               | 8           | 8.5           | 106             |          | -            | -                |        | 70-130             | -     |        | 20            |
| o-Xylene                   | ND               | 4           | 4.1           | 103             |          | -            | -                |        | 70-130             | -     |        | 20            |
| Isopropylbenzene           | ND               | 4           | 4.3           | 108             |          | -            | -                |        | 70-130             | -     |        | 20            |
| 1,3,5-Trimethylbenzene     | ND               | 4           | 4.4           | 110             |          | -            | -                |        | 70-130             | -     |        | 20            |
| 1,2,4-Trimethylbenzene     | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |        | 20            |
| Naphthalene                | ND               | 4           | 3.5           | 88              |          | -            | -                |        | 70-130             | -     |        | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 100                  |                      | 80-120     |
| 4-Bromofluorobenzene   | 100                  |                      | 80-120     |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found    | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | Qual   | Recovery<br>Limits | RPD   | Qual     | RPD<br>Limits |
|----------------------------|------------------|-------------|----------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | igh Lab     | Associated sam | ple(s): 01 (    | QC Batch | ID: WG20     | 42029-6 Q        | C Samp | ole: L25149        | 38-01 | Client I | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 3.1            | 78              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.4            | 110             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Benzene                    | 12               | 4           | 14             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Toluene                    | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Ethylbenzene               | 0.54             | 4           | 4.2            | 92              |          | -            | -                |        | 70-130             | -     |          | 20            |
| p/m-Xylene                 | 5.7              | 8           | 13             | 91              |          | -            | -                |        | 70-130             | -     |          | 20            |
| o-Xylene                   | 6.4              | 4           | 9.7            | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| Isopropylbenzene           | 0.50             | 4           | 3.8            | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,3,5-Trimethylbenzene     | 16               | 4           | 18             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2,4-Trimethylbenzene     | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Naphthalene                | 15               | 4           | 18             | 75              |          | -            | -                |        | 70-130             | -     |          | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 98                   |                      | 80-120     |
| 4-Bromofluorobenzene   | 112                  |                      | 80-120     |



L2514935

## Lab Duplicate Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Quality Control Lab Number:

Project Number:Not SpecifiedReport Date:03/18/25

| Parameter                                   | Native Sample            | Duplicate Sample    | Units         | RPD        | Qual    | RPD<br>Limits |            |
|---|--------------------------|---------------------|---------------|------------|---------|---------------|------------|
| olatile Organics by GC/MS - Westborough Lab | Associated sample(s): 01 | QC Batch ID: WG2040 | )970-5 QC Sar | mple: L251 | 4912-01 | Client ID:    | DUP Sample |
| Methyl tert butyl ether                     | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| 1,2-Dichloroethane                          | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Benzene                                     | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Toluene                                     | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Ethylbenzene                                | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| p/m-Xylene                                  | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| o-Xylene                                    | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Isopropylbenzene                            | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| 1,3,5-Trimethylbenzene                      | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| 1,2,4-Trimethylbenzene                      | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Naphthalene                                 | ND                       | ND                  | ug/l          | NC         |         | 20            |            |
| Xylene (Total) <sup>1</sup>                 | ND                       | ND                  | ug/l          | NC         |         | 20            |            |

|                        |                     |                       | Acceptance |
|------------------------|---------------------|-----------------------|------------|
| Surrogate              | %Recovery Qualifier | r %Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 109                 | 111                   | 80-120     |
| 4-Bromofluorobenzene   | 86                  | 85                    | 80-120     |



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

L2514935

**Project Number:** Not Specified Report Date:

| Parameter                                   | Native Sample              | Duplicate Sam   | ole Units         | RPD        | Qual    | RPD<br>Limits |           |
|---|----------------------------|-----------------|-------------------|------------|---------|---------------|-----------|
| /olatile Organics by GC/MS - Westborough La | b Associated sample(s): 01 | QC Batch ID: WG | 32042029-5 QC Sar | mple: L251 | 4937-01 | Client ID: D  | UP Sample |
| Methyl tert butyl ether                     | ND                         | ND              | ug/l              | NC         |         | 20            |           |
| 1,2-Dichloroethane                          | ND                         | ND              | ug/l              | NC         |         | 20            |           |
| Benzene                                     | 10                         | 11              | ug/l              | 10         |         | 20            |           |
| Toluene                                     | 33                         | 34              | ug/l              | 3          |         | 20            |           |
| Ethylbenzene                                | 1.1                        | 1.2             | ug/l              | 9          |         | 20            |           |
| p/m-Xylene                                  | 18                         | 20              | ug/l              | 11         |         | 20            |           |
| o-Xylene                                    | 7.7                        | 8.3             | ug/l              | 8          |         | 20            |           |
| Isopropylbenzene                            | 0.67                       | 0.72            | ug/l              | 7          |         | 20            |           |
| 1,3,5-Trimethylbenzene                      | 50                         | 55              | ug/l              | 10         |         | 20            |           |
| 1,2,4-Trimethylbenzene                      | 46                         | 51              | ug/l              | 10         |         | 20            |           |
| Naphthalene                                 | 25                         | 25              | ug/l              | 0          |         | 20            |           |
| Xylene (Total) <sup>1</sup>                 | 26                         | 28              | ug/l              | 10         |         | 20            |           |

|                        |                    |              |           | Acceptance |  |
|------------------------|--------------------|--------------|-----------|------------|--|
| Surrogate              | %Recovery Qualific | er %Recovery | Qualifier | Criteria   |  |
| 1,2-Dichlorobenzene-d4 | 95                 | 101          |           | 80-120     |  |
| 4-Bromofluorobenzene   | 116                | 121          | Q         | 80-120     |  |



### **METALS**



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514935Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2514935-01 Date Collected: 03/13/25 12:45

Client ID: 108 SPENCER ROAD-175-185 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result    | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-----------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals - | Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND        |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:28 | EPA 3005A      | 3,200.8              | MRC     |



L2514935

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number:

Lab Number: Not Specified

**Report Date:** 03/18/25

**Method Blank Analysis Batch Quality Control** 

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



**Project Name:** SUNOCO PIPELINE LP (SPLP) Not Specified

**Project Number:** 

Lab Number:

L2514935

Report Date:

| Parameter                                  | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|--|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associate | d sample(s): 01  | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                            | 94               |          | -                 |      | 85-115              | -   |      |            |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514935

Report Date:

| Parameter              | Native<br>Sample       | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery 0 | Recove<br>Qual Limit | ,           | RPD<br>al Limits |
|------------------------|------------------------|-------------|-------------|-----------------|---------|--------------|--------------------|----------------------|-------------|------------------|
| Dissolved Metals - Mar | nsfield Lab Associated | sample(s):  | 01 QC Ba    | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931-    | 01 Client ID         | : MS Sample |                  |
| Lead, Dissolved        | ND                     | 0.53        | 0.5081      | 96              |         | -            | -                  | 70-130               | -           | 20               |
| Dissolved Metals - Mar | nsfield Lab Associated | sample(s):  | 01 QC Ba    | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932-    | 01 Client ID         | : MS Sample |                  |
| Lead, Dissolved        | ND                     | 0.53        | 0.5218      | 98              |         | -            | -                  | 70-130               | -           | 20               |



L2514935

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

**Report Date:** 03/18/25

| Parameter  | Native Sample   | Duplicate Sample       | Units       | RPD        | Qual RF    | D Limits |
|--|-----------------|------------------------|-------------|------------|------------|----------|
| Dissolved Metals - Mansfield Lab Associated sample(s): | 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | DUP Sample | )        |
| Lead, Dissolved  | ND              | ND                     | mg/l        | NC         |            | 20       |
| Dissolved Metals - Mansfield Lab Associated sample(s): | 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | DUP Sample | )        |
| Lead, Dissolved  | ND              | ND                     | mg/l        | NC         |            | 20       |



Project Name: SUNOCO PIPELINE LP (SPLP)

Lab Number: L2514935

Project Number: Not Specified Report Date: 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent

| Container Info | ormation                     | Initial | Final    | Temp |          |   | Frozen |           |               |
|----------------|------------------------------|---------|----------|------|----------|---|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler  | ooler pH |      | pH deg C |   | Seal   | Date/Time | Analysis(*)   |
| L2514935-01A   | Vial HCI preserved           | Α       | NA       |      | 2.6      | Υ | Absent |           | 524.2(14)     |
| L2514935-01B   | Vial HCI preserved           | Α       | NA       |      | 2.6      | Υ | Absent |           | 524.2(14)     |
| L2514935-01C   | Vial HCl preserved           | Α       | NA       |      | 2.6      | Υ | Absent |           | 524.2(14)     |
| L2514935-01D   | Vial Na2S2O3 preserved       | Α       | NA       |      | 2.6      | Υ | Absent |           | 504(14)       |
| L2514935-01E   | Vial Na2S2O3 preserved       | Α       | NA       |      | 2.6      | Υ | Absent |           | 504(14)       |
| L2514935-01F   | Plastic 250ml HNO3 preserved | Α       | <2       | <2   | 2.6      | Υ | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514935 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### **Acronyms**

**EDL** 

**EPA** 

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

**EMPC** - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

Environmental Protection Agency.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514935Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic

peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit
   (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514935Project Number:Not SpecifiedReport Date:03/18/25

#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514935Project Number:Not SpecifiedReport Date:03/18/25

#### **REFERENCES**

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 1 of 2

### **Certification Information**

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

ID No.:17873

Revision 27

**Pace Analytical Services LLC** 

Facility: Northeast

Title: Certificate/Approval Program Summary

Department: Quality Assurance Published Date: 01/24/2025 Page 2 of 2

#### **Certification IDs:**

#### Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

#### Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

#### Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

|  | Vestborough, MA  CHAIN-OF-CUSTODY Analytical Request Document                                       |             |        |   |                                     |                 |               | EAB USE ONLY- Affix Workerdell.ogin Label Hers |        |           |                       |                   |                            |                                     |       |        |   |  |   |
|--|---|-------------|--------|---|-------------------------------------|-----------------|---------------|--|--------|-----------|-----------------------|-------------------|----------------------------|-------------------------------------|-------|--------|---|--|---|
| Company Name: GES, Inc.  Contact/Disposition To: Stephance Grillo  Phone 8 (610) 458-1077x3084 / (610  410 Eagleview Blvd, Suite 110  Exton, PA 19341  Coll factor CTEH_Deliverables@envir |   |             |        |   | 4 / (610) 458-23(<br>m; gesinbox@ge | (610) 458-2300  |               |  |        |           | L25149<br>GES —       |                   |                            |                                     |       |        | 935<br>PA — ER<br>IIII  |  |   |
| Continuent Project III Project Name Surrocco Pipeline LP (SPLP) Washington Crossing Use Collection or for Tackey ID (as applicability  |   |             |        | Involute 1 mail:  ges-invoices@gesonline.com  Proches Grant (in  ges-invoices@gesonline.com  Proches Grant (in  gestudie) 10225040-06-160 |                                     |                 |               |  |        |           | 6                     | 3 Min             | Specify Co                 | ontainer St                         | 12.00 | Ţ      |   | TeContinue   Ser. (1) (L. [1] Schen, (3] 150ms,<br>(4) 123ms, (3) 150ms, (6) 45ms, and (7) Ferbie,<br>(6) Teradous, (6) 50ms, (10) Other<br>*** Freumvaller Types (1) Hone, (3) (1602, (2) (2) |   |
| Washington Crossing,   | 1 1ct X   |             |        | County/State origin of sample(s): PA  |                                     |                 |               |  |        |           |                       |                   | Andysk Reguested           |                                     |       |        | Minks (6) Naths, Hill In America, (7) Nath Oct (Miss<br>Faculdate, yet Austria And, July MeDil, (15) Clina<br>Froj. Mgr.: |  |   |
| Tata Deliverables        Level 0   | Regulatory Program<br>DW<br>Reals (Pve-approvi<br>    Seres Osy (  <br>Date Results<br>Requested: A | al required | ψ:     | DW PWSD For WW Permit et as applicable:   |                                     |                 |               |  |        | EPA 524.2 | etha                  | ssolved)<br>0.8   |                            |                                     |       |        |   | AcctRum / Client ID  Table #  Purille / Templine   |   |
| Motor Folia (hoert in Motor Rochelous): Dishing Water (h<br>Shidge (SL), Caelli (CI), Seachate (LI), Biocond (BS), Oth<br>Customer Sample (D   | M, Good Water (SM)  | Matrix *    | Comp / | Composite   | tart                                | CoSected or Cor | the street    | il Cont  | heidad | Olivetre  | VOCs<br>(list below), | ,2-Dibrum<br>04.1 | Lead (disso<br>, EPA 200.8 |                                     |       |        |   |  | Pridog/Bettle Old 10:<br>Sample Commant |
| 108 Spencer Road - 175   | -185 ft   | GW          | G      | Date  | Time                                | 3/13/25         | 1245          | 6  | Result | Units     | X                     | X                 | X                          |                                     |       |        | 1   |  |   |
|  |   |             |        |   |                                     |                 |               |  |        |           |                       |                   |                            |                                     |       |        | 1   |  |   |
|  |   |             |        |   |                                     |                 |               |  |        |           |                       |                   |                            |                                     |       |        |   |  |   |
|  |   |             |        |   |                                     |                 |               |  |        |           |                       |                   |                            |                                     |       |        | +   |  |   |
| Additional instructions from Para*  VOCs by EPA 524.2 list: BTEX,  |   |             |        |   | Collected By<br>Printed Name        |                 | Granu         |  |        |           | 1                     |                   |                            | Special Con                         |       |        |   |  |   |
| 1,2,4-Trimethylbenzene, 1,3,5-Tr   | of The Indiana  | ene, 1,     | 2-Dich | 1000ethane  | 540                                 | Mon             | eagnificant C | CC.  | C      |           | -7                    | 1                 | 4/2                        | Capariona<br>Capariona<br>Capariona | 511   | 1/5    | 10  |  | Constant Tierre (**)                    |
| ennement systemater September  | Complete  | 1001        |        | tinhe 1 1   |                                     | Secret Selfores | Suranurei ()  | 3  | ron    |           |                       |                   |                            | "MAR                                | 142   | 025 23 | 105   | 100  |   |



### ANALYTICAL REPORT

Lab Number: L2514936

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| Lab<br>Sample ID | Client ID                      | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |  |  |
|------------------|--------------------------------|--------|-------------------------|-------------------------|--------------|--|--|
| L2514936-01      | 108 SPENCER ROAD-237-247<br>FT | DW     | WASHINGTON CROSSING, PA | 03/13/25 15:30          | 03/14/25     |  |  |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514936-01: The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during trip from laboratory to field and back to the laboratory. Analytes detected in this sample are to be considered qualified.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Sufani Morrissey-Tiffani Morrissey

Pace

# **ORGANICS**



### **VOLATILES**



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514936

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514936-01 Date Collected: 03/13/25 15:30

Client ID: 108 SPENCER ROAD-237-247 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw Extraction Method: EPA 504.1
Analytical Method: 14,504.1 Extraction Date: 03/15/25 09:33

Analytical Date: 03/15/25 14:04
Analyst: JKH

Qualifier Units RL MDL **Dilution Factor** Column **Parameter** Result Microextractables by GC - Westborough Lab 1,2-Dibromoethane ND ug/l 0.010 0.005 1 Α



L2514936

03/18/25

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified

**SAMPLE RESULTS** 

Date Collected: 03/13/25 15:30

Lab Number:

Report Date:

Lab ID: L2514936-01

108 SPENCER ROAD-237-247 FT Date Received: 03/14/25 Field Prep: Sample Location: WASHINGTON CROSSING, PA Refer to COC

Sample Depth:

Client ID:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/15/25 16:07

Analyst: MKS

| Parameter                       | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |
|---------------------------------|----------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - We | estborough Lab |           |       |      |      |                 |
| Methyl tert butyl ether         | 0.13           | J         | ug/l  | 0.50 | 0.13 | 1               |
| 1,2-Dichloroethane              | 0.35           | J         | ug/l  | 0.50 | 0.15 | 1               |
| Benzene                         | 13             |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                         | 21             |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                    | 1.9            |           | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                      | 28             |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                        | 6.9            |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene                | 1.1            |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene          | 78             |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene          | 85             | Е         | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                     | 39             |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total <sup>1</sup>     | 35             |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 98         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 95         |           | 80-120                 |  |



**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number: L2514936

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: D Date Collected: 03/13/25 15:30 L2514936-01

Client ID: 108 SPENCER ROAD-237-247 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/17/25 12:35

Analyst: GMT

| Parameter                        | Result        | Qualifier | Units      | RL        | MDL  | Dilution Factor  |
|----------------------------------|---------------|-----------|------------|-----------|------|------------------|
| Volatile Organics by GC/MS - Wes | stborough Lab |           |            |           |      |                  |
| 1,2,4-Trimethylbenzene           | 67            |           | ug/l       | 2.5       | 0.63 | 5                |
| Surrogate                        |               |           | % Recovery | Qualifier |      | ptance<br>iteria |
| 1,2-Dichlorobenzene-d4           |               |           | 96         |           | 8    | 80-120           |
| 4-Bromofluorobenzene             |               |           | 111        |           | 8    | 0-120            |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514936

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:14 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result      | Qualifier  | Units | RL          | MDL     |   |
|------------------------------------|-------------|------------|-------|-------------|---------|---|
| Microextractables by GC - Westboro | ugh Lab for | sample(s): | 01    | Batch: WG20 | 40903-1 |   |
| 1,2-Dibromoethane                  | ND          |            | ug/l  | 0.010       | 0.005   | Α |



L2514936

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/15/25 06:53

Analyst: GMT

| Parameter                         | Result      | Qualifier  | Units    | RL     | MDL         |
|-----------------------------------|-------------|------------|----------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sample | e(s): 01 | Batch: | WG2040970-4 |
| Methyl tert butyl ether           | ND          |            | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |            | ug/l     | 0.50   | 0.15        |
| Benzene                           | ND          |            | ug/l     | 0.50   | 0.19        |
| Toluene                           | ND          |            | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |            | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |            | ug/l     | 0.50   | 0.30        |
| o-Xylene                          | ND          |            | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |            | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene            | ND          |            | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |            | ug/l     | 0.50   | 0.13        |
| Naphthalene                       | ND          |            | ug/l     | 0.50   | 0.14        |
| Xylenes, Total <sup>1</sup>       | ND          |            | ug/l     | 0.50   | 0.19        |

| Surrogate              |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 103                | 80-120     |
| 4-Bromofluorobenzene   | 92                 | 80-120     |



L2514936

Lab Number:

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/17/25 10:13

Analyst: MKS

| Parameter                         | Result      | Qualifier | Units    | RL     | MDL         |
|-----------------------------------|-------------|-----------|----------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sampl | e(s): 01 | Batch: | WG2042029-4 |
| Methyl tert butyl ether           | ND          |           | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |           | ug/l     | 0.50   | 0.15        |
| Benzene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Toluene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |           | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |           | ug/l     | 0.50   | 0.30        |
| o-Xylene                          | ND          |           | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |           | ug/l     | 0.50   | 0.13        |
| Xylenes, Total <sup>1</sup>       | ND          |           | ug/l     | 0.50   | 0.19        |
| 1,3,5-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.13        |
| Naphthalene                       | ND          |           | ug/l     | 0.50   | 0.14        |

|                        |           | Ac        | ceptance |
|------------------------|-----------|-----------|----------|
| Surrogate              | %Recovery | Qualifier | Criteria |
| 1,2-Dichlorobenzene-d4 | 106       |           | 80-120   |
| 4-Bromofluorobenzene   | 92        |           | 80-120   |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified Lab Number:

L2514936 03/18/25

Report Date:

| Parameter               | LCS<br>%Recover           | y Qual       | LCSD<br>%Recove |           | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|-------------------------|---------------------------|--------------|-----------------|-----------|---------------------|-----|------|---------------|--------|
| Microextractables by GC | - Westborough Lab Associa | ed sample(s) | : 01 Batch:     | WG2040903 | -2                  |     |      |               |        |
| 1,2-Dibromoethane       | 111                       |              | -               |           | 70-130              | -   |      |               | А      |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| arameter                        | LCS<br>%Recovery        |                  | CSD<br>covery Qual | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---------------------------------|-------------------------|------------------|--------------------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Wes | stborough Lab Associate | ed sample(s): 01 | Batch: WG204       | 0970-3              |     |      |               |  |
| Methyl tert butyl ether         | 115                     |                  | -                  | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane              | 128                     |                  | -                  | 70-130              | -   |      | 20            |  |
| Benzene                         | 122                     |                  | -                  | 70-130              | -   |      | 20            |  |
| Toluene                         | 118                     |                  | -                  | 70-130              | -   |      | 20            |  |
| Ethylbenzene                    | 110                     |                  | -                  | 70-130              | -   |      | 20            |  |
| p/m-Xylene                      | 111                     |                  | -                  | 70-130              | -   |      | 20            |  |
| o-Xylene                        | 108                     |                  | -                  | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                | 112                     |                  | -                  | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene          | 108                     |                  | -                  | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene          | 110                     |                  | -                  | 70-130              | -   |      | 20            |  |
| Naphthalene                     | 102                     |                  | -                  | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 101<br>94             |                   |      | 80-120<br>80-120       |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| arameter                                | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---|------------------|--------------|-------------------|---------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Westborough | gh Lab Associat  | ed sample(s) | ): 01 Batch:      | WG20420 | )29-3               |     |      |               |  |
| Methyl tert butyl ether                 | 85               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                      | 115              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                                 | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                                 | 90               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                            | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                              | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                                | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                        | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                             | 80               |              | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 99<br>110             |                   |      | 80-120<br>80-120       |



Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

|                             | Native        | MS        | MS             | MS           |           | MSD     | MSD       |         | Recovery   |        |         | RPD    |               |
|-----------------------------|---------------|-----------|----------------|--------------|-----------|---------|-----------|---------|------------|--------|---------|--------|---------------|
| Parameter                   | Sample        | Added     | Found          | %Recovery    | Qual      | Found   | %Recovery | Qual    | Limits     | RPD    | Qual    | Limits | <u>Column</u> |
| Microextractables by GC     | - Westborough | Lab Assoc | ciated sample( | (s): 01 QC E | Batch ID: | WG20409 | 03-3 QC S | Sample: | L2514460-0 | )1 Cli | ent ID: | MS San | nple          |
| 1,2-Dibromoethane           | ND            | 0.252     | 0.254          | 101          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |
| 1,2-Dibromo-3-chloropropane | ND            | 0.252     | 0.305          | 121          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |
| 1,2,3-Trichloropropane      | ND            | 0.252     | 0.258          | 102          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | / Qual | Recovery<br>Limits | RPD   | Qual     | RPD<br>Limits |
|----------------------------|------------------|-------------|---------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | gh Lab A    | ssociated sam | ple(s): 01 (    | QC Batch | D: WG20      | 40970-6 Q        | C Samp | ole: L25149        | 13-01 | Client I | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 4.0           | 100             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.7           | 118             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Benzene                    | ND               | 4           | 4.6           | 115             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Toluene                    | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Ethylbenzene               | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| p/m-Xylene                 | ND               | 8           | 8.5           | 106             |          | -            | -                |        | 70-130             | -     |          | 20            |
| o-Xylene                   | ND               | 4           | 4.1           | 103             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Isopropylbenzene           | ND               | 4           | 4.3           | 108             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,3,5-Trimethylbenzene     | ND               | 4           | 4.4           | 110             |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2,4-Trimethylbenzene     | ND               | 4           | 4.2           | 105             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Naphthalene                | ND               | 4           | 3.5           | 88              |          | -            | -                |        | 70-130             | -     |          | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 100                  |                      | 80-120     |
| 4-Bromofluorobenzene   | 100                  |                      | 80-120     |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found    | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD   |           | RPD<br>Limits |
|----------------------------|------------------|-------------|----------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|-----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | igh Lab     | Associated sam | ple(s): 01 (    | QC Batch | ID: WG20     | 42029-6 Q        | C Samp | le: L25149         | 38-01 | Client IE | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 3.1            | 78              |          | -            | -                |        | 70-130             | -     |           | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.4            | 110             |          | -            | -                |        | 70-130             | -     |           | 20            |
| Benzene                    | 12               | 4           | 14             | 50              | Q        | -            | -                |        | 70-130             | -     |           | 20            |
| Toluene                    | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |           | 20            |
| Ethylbenzene               | 0.54             | 4           | 4.2            | 92              |          | -            | -                |        | 70-130             | -     |           | 20            |
| p/m-Xylene                 | 5.7              | 8           | 13             | 91              |          | -            | -                |        | 70-130             | -     |           | 20            |
| o-Xylene                   | 6.4              | 4           | 9.7            | 82              |          | -            | -                |        | 70-130             | -     |           | 20            |
| Isopropylbenzene           | 0.50             | 4           | 3.8            | 82              |          | -            | -                |        | 70-130             | -     |           | 20            |
| 1,3,5-Trimethylbenzene     | 16               | 4           | 18             | 50              | Q        | -            | -                |        | 70-130             | -     |           | 20            |
| 1,2,4-Trimethylbenzene     | 15               | 4           | 17             | 50              | Q        | -            | -                |        | 70-130             | -     |           | 20            |
| Naphthalene                | 15               | 4           | 18             | 75              |          | -            | -                |        | 70-130             | -     |           | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 98                   |                      | 80-120     |
| 4-Bromofluorobenzene   | 112                  |                      | 80-120     |



L2514936

# Lab Duplicate Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

**Report Date:** 03/18/25

| arameter                                    | Native Sample            | Duplicate Sample   | Units         | RPD        | RPD<br>Qual Limits            |
|---|--------------------------|--------------------|---------------|------------|-------------------------------|
| olatile Organics by GC/MS - Westborough Lab | Associated sample(s): 01 | QC Batch ID: WG204 | 0970-5 QC Sai | mple: L251 | 4912-01 Client ID: DUP Sample |
| Methyl tert butyl ether                     | ND                       | ND                 | ug/l          | NC         | 20                            |
| 1,2-Dichloroethane                          | ND                       | ND                 | ug/l          | NC         | 20                            |
| Benzene                                     | ND                       | ND                 | ug/l          | NC         | 20                            |
| Toluene                                     | ND                       | ND                 | ug/l          | NC         | 20                            |
| Ethylbenzene                                | ND                       | ND                 | ug/l          | NC         | 20                            |
| p/m-Xylene                                  | ND                       | ND                 | ug/l          | NC         | 20                            |
| o-Xylene                                    | ND                       | ND                 | ug/l          | NC         | 20                            |
| Isopropylbenzene                            | ND                       | ND                 | ug/l          | NC         | 20                            |
| 1,3,5-Trimethylbenzene                      | ND                       | ND                 | ug/l          | NC         | 20                            |
| 1,2,4-Trimethylbenzene                      | ND                       | ND                 | ug/l          | NC         | 20                            |
| Naphthalene                                 | ND                       | ND                 | ug/l          | NC         | 20                            |
| Xylene (Total) <sup>1</sup>                 | ND                       | ND                 | ug/l          | NC         | 20                            |
|   |                          |                    |               |            |                               |

| Surrogate              | %Recovery Qualif | ier %Recovery Qualifier | Acceptance<br>Criteria |
|------------------------|------------------|-------------------------|------------------------|
| 1,2-Dichlorobenzene-d4 | 109              | 111                     | 80-120                 |
| 4-Bromofluorobenzene   | 86               | 85                      | 80-120                 |



L2514936

# Lab Duplicate Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

**Report Date:** 03/18/25

| arameter                                    | Native Sample            | Duplicate Sam   | ple Units         | RPD        |                | PD<br>imits    |
|---|--------------------------|-----------------|-------------------|------------|----------------|----------------|
| platile Organics by GC/MS - Westborough Lab | Associated sample(s): 01 | QC Batch ID: WC | G2042029-5 QC Sar | mple: L251 | 4937-01 Client | ID: DUP Sample |
| Methyl tert butyl ether                     | ND                       | ND              | ug/l              | NC         |                | 20             |
| 1,2-Dichloroethane                          | ND                       | ND              | ug/l              | NC         |                | 20             |
| Benzene                                     | 10                       | 11              | ug/l              | 10         |                | 20             |
| Toluene                                     | 33                       | 34              | ug/l              | 3          |                | 20             |
| Ethylbenzene                                | 1.1                      | 1.2             | ug/l              | 9          |                | 20             |
| p/m-Xylene                                  | 18                       | 20              | ug/l              | 11         |                | 20             |
| o-Xylene                                    | 7.7                      | 8.3             | ug/l              | 8          |                | 20             |
| Isopropylbenzene                            | 0.67                     | 0.72            | ug/l              | 7          |                | 20             |
| 1,3,5-Trimethylbenzene                      | 50                       | 55              | ug/l              | 10         |                | 20             |
| 1,2,4-Trimethylbenzene                      | 46                       | 51              | ug/l              | 10         |                | 20             |
| Naphthalene                                 | 25                       | 25              | ug/l              | 0          |                | 20             |
| Xylene (Total) <sup>1</sup>                 | 26                       | 28              | ug/l              | 10         |                | 20             |

| Surrogate              | %Recovery Qualifier | %Recovery | Qualifier | Acceptance<br>Criteria |
|------------------------|---------------------|-----------|-----------|------------------------|
| 1,2-Dichlorobenzene-d4 | 95                  | 101       |           | 80-120                 |
| 4-Bromofluorobenzene   | 116                 | 121       | Q         | 80-120                 |



### **METALS**



03/13/25 15:30

Date Collected:

Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514936-01

Client ID: 108 SPENCER ROAD-237-247 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result    | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-----------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
|                    |           |           |       |        |        |                    |                  |                  |                |                      |         |
| Dissolved Metals - | Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND        |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:32 | 2 EPA 3005A    | 3,200.8              | MRC     |



Project Name: SUNOCO PIPELINE LP (SPLP)

Lab Number: L2

L2514936

Project Number: Not Specified

Report Date:

03/18/25

Method Blank Analysis Batch Quality Control

| Parameter          | Result          | Qualifier  | Units    | RL       | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Analytica<br>Method |     |
|--------------------|-----------------|------------|----------|----------|--------|--------------------|------------------|------------------|---------------------|-----|
| Dissolved Metals - | - Mansfield Lab | for sample | e(s): 01 | Batch: V | VG2040 | 887-1              |                  |                  |                     |     |
| Lead, Dissolved    | ND              |            | mg/l     | 0.0010   | 0.0003 | 1                  | 03/15/25 09:37   | 03/15/25 16:07   | 7 3,200.8           | MRC |

**Prep Information** 

Digestion Method: EPA 3005A



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

L2514936

Project Number: Not Specified

Report Date:

| Parameter                                   | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associated | sample(s): 01    | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                             | 94               |          | -                 |      | 85-115              | -   |      |            |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514936

Report Date:

| Parameter                   | Native<br>Sample | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Qual | Recovery<br>Limits | RPD    | Qual | RPD<br>Limits |
|-----------------------------|------------------|-------------|-------------|-----------------|---------|--------------|------------------|------|--------------------|--------|------|---------------|
| Dissolved Metals - Mansfiel | d Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931   | -01  | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved             | ND               | 0.53        | 0.5081      | 96              |         | -            | -                |      | 70-130             | -      |      | 20            |
| Dissolved Metals - Mansfiel | d Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932   | 2-01 | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved             | ND               | 0.53        | 0.5218      | 98              |         | -            | -                |      | 70-130             | -      |      | 20            |



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

Report Date:

L2514936 03/18/25

| Parameter  | Native Sample   | Duplicate Sample       | Units       | RPD        | Qual RP    | D Limits |
|--|-----------------|------------------------|-------------|------------|------------|----------|
| Dissolved Metals - Mansfield Lab Associated sample(s): ( | 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | DUP Sample |          |
| Lead, Dissolved  | ND              | ND                     | mg/l        | NC         |            | 20       |
| Dissolved Metals - Mansfield Lab Associated sample(s): ( | 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | DUP Sample |          |
| Lead. Dissolved  | ND              | ND                     | ma/l        | NC         |            | 20       |



Project Name: SUNOCO PIPELINE LP (SPLP) Project Number: Not Specified

*Lab Number:* L2514936 **Report Date:** 03/18/25

### Sample Receipt and Container Information

YES Were project specific reporting limits specified?

**Cooler Information** 

**Custody Seal** Cooler

Α Absent

| Container Info | ormation                     |        | Initial | Final | Temp  |      |        | Frozen    |               |
|----------------|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler | рН      | рН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514936-01A   | Vial HCI preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514936-01B   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514936-01C   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514936-01D   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514936-01E   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514936-01F   | Plastic 250ml HNO3 preserved | Α      | <2      | <2    | 2.6   | Υ    | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514936 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### **Acronyms**

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

**EMPC** - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration. **EPA** 

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

Environmental Protection Agency.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

> - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

> Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyle ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514936Project Number:Not SpecifiedReport Date:03/18/25

#### **REFERENCES**

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

#### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

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#### **Certification Information**

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 2 of 2

#### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| Pace Pace Location Requested (City/State): CHAIN-OF-CUSTODY Analytical Request Document  Westborough, MA  Company Name  GES, Inc.  Contact/Report to: Stephanie Grillo |  |  |  |  |  |   |  |  | LAB UIE DILT. Allo Workerden Legin Lines Trees   |  |  |  |  |   |   |  |  |  |  |  |
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| Exton, PA 19341  Enter Cream Street Deliverables   |  |  |  |  |  | )64 / (610) 458-2300<br>:om; gesinbox@gesonline.com   |  |  |  |  | Stan OF GES  |  |  |   |   |  | -PA-ER   |  |  |  |
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#### ANALYTICAL REPORT

Lab Number: L2514937

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

108 SPENCER ROAD-255-265

Project Number: Not Specified

L2514937-01

Lab Number:

03/14/25 10:56

L2514937

**Receive Date** 

03/14/25

**Report Date:** 03/18/25

LabSampleCollectionSample IDClient IDMatrixLocationDate/Time

WASHINGTON CROSSING, PA

DW

FT



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514937-01: The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during trip from laboratory to field and back to the laboratory. Analytes detected in this sample are to be considered qualified.

The surrogate recovery for the WG2042029-5 Laboratory Duplicate performed on L2514937-01 is above the acceptance criteria for 4-bromofluorobenzene (121%). The native sample has acceptable surrogate recoveries and the duplicate RPD is within method criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Title: Technical Director/Representative Date: 03/18/25

Sufani Morrissey-Tiffani Morrissey

Pace

# **ORGANICS**



### **VOLATILES**



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514937

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

03/15/25 14:13

Lab ID: L2514937-01 Date Collected: 03/14/25 10:56

Client ID: 108 SPENCER ROAD-255-265 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Analytical Date:

Matrix: Dw Extraction Method: EPA 504.1
Analytical Method: 14,504.1 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514937

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2514937-01 Date Collected: 03/14/25 10:56

Client ID: 108 SPENCER ROAD-255-265 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/17/25 18:30

Analyst: GMT

| Parameter                          | Result     | Qualifier | Units | RL   | MDL  | Dilution Factor |
|------------------------------------|------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - Westb | orough Lab |           |       |      |      |                 |
| Methyl tert butyl ether            | ND         |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,2-Dichloroethane                 | ND         |           | ug/l  | 0.50 | 0.15 |                 |
| Benzene                            | 10         |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                            | 33         |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                       | 1.1        |           | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                         | 18         |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                           | 7.7        |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene                   | 0.67       |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene             | 50         |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene             | 46         |           | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                        | 25         |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total <sup>1</sup>        | 26         |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 95         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 116        |           | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514937

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:14 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                        | Result       | Qualifier    | Units | RL           | MDL    |   |
|----------------------------------|--------------|--------------|-------|--------------|--------|---|
| Microextractables by GC - Westbo | rough Lab fo | or sample(s) | : 01  | Batch: WG204 | 0903-1 |   |
| 1,2-Dibromoethane                | ND           |              | ug/l  | 0.010        | 0.005  | Α |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514937

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/17/25 10:13

Analyst: MKS

| Parameter                        | Result (        | Qualifier Units  | RL     | MDL         |
|----------------------------------|-----------------|------------------|--------|-------------|
| Volatile Organics by GC/MS - Wes | tborough Lab fo | or sample(s): 01 | Batch: | WG2042029-4 |
| Methyl tert butyl ether          | ND              | ug/l             | 0.50   | 0.13        |
| 1,2-Dichloroethane               | ND              | ug/l             | 0.50   | 0.15        |
| Benzene                          | ND              | ug/l             | 0.50   | 0.19        |
| Toluene                          | ND              | ug/l             | 0.50   | 0.19        |
| Ethylbenzene                     | ND              | ug/l             | 0.50   | 0.13        |
| p/m-Xylene                       | ND              | ug/l             | 0.50   | 0.30        |
| o-Xylene                         | ND              | ug/l             | 0.50   | 0.19        |
| Isopropylbenzene                 | ND              | ug/l             | 0.50   | 0.13        |
| Xylenes, Total <sup>1</sup>      | ND              | ug/l             | 0.50   | 0.19        |
| 1,3,5-Trimethylbenzene           | ND              | ug/l             | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene           | ND              | ug/l             | 0.50   | 0.13        |
| Naphthalene                      | ND              | ug/l             | 0.50   | 0.14        |

|                        |           | %Recovery Qualifier Criteria  106 80-120 | ceptance |
|------------------------|-----------|--|----------|
| Surrogate              | %Recovery | Qualifier                                | Criteria |
| 1,2-Dichlorobenzene-d4 | 106       |  | 80-120   |
| 4-Bromofluorobenzene   | 92        |  | 80-120   |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP) Not Specified

**Project Number:** 

Lab Number:

L2514937

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recovery | Qual       | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-------------------|------------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough L | ab Associated    | sample(s): | 01 Batch: We      | G2040903-2 | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 111              |            | -                 |            | 70-130              | -   |      |               | Α      |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514937

Report Date:

| arameter                               | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual      | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|--|------------------|--------------|-------------------|-----------|---------------------|-----|------|---------------|--|
| olatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s) | : 01 Batch:       | WG2042029 | 9-3                 |     |      |               |  |
| Methyl tert butyl ether                | 85               |              | -                 |           | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                     | 115              |              | -                 |           | 70-130              | -   |      | 20            |  |
| Benzene                                | 95               |              | -                 |           | 70-130              | -   |      | 20            |  |
| Toluene                                | 90               |              | -                 |           | 70-130              | -   |      | 20            |  |
| Ethylbenzene                           | 95               |              | -                 |           | 70-130              | -   |      | 20            |  |
| p/m-Xylene                             | 100              |              | -                 |           | 70-130              | -   |      | 20            |  |
| o-Xylene                               | 100              |              | -                 |           | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                       | 92               |              | -                 |           | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                 | 92               |              | -                 |           | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                 | 92               |              | -                 |           | 70-130              | -   |      | 20            |  |
| Naphthalene                            | 80               |              | -                 |           | 70-130              | -   |      | 20            |  |

| Surrogate                                   | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |  |
|---|-----------------------|-------------------|------|------------------------|--|
| 1,2-Dichlorobenzene-d4 4-Bromofluorobenzene | 99<br>110             |                   |      | 80-120<br>80-120       |  |



## Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514937

Report Date:

|                             | Native          | MS       | MS             | MS           |           | MSD     | MSD       |        | Recovery   |        |         | RPD    |               |
|-----------------------------|-----------------|----------|----------------|--------------|-----------|---------|-----------|--------|------------|--------|---------|--------|---------------|
| Parameter                   | Sample          | Added    | Found          | %Recovery    | Qual      | Found   | %Recovery | Qual   | Limits     | RPD    | Qual    | Limits | <u>Column</u> |
| Microextractables by GC -   | · Westborough I | _ab Asso | ciated sample( | (s): 01 QC E | Batch ID: | WG20409 | 03-3 QC S | ample: | L2514460-0 | )1 Cli | ent ID: | MS San | nple          |
| 1,2-Dibromoethane           | ND              | 0.252    | 0.254          | 101          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |
| 1,2-Dibromo-3-chloropropane | ND              | 0.252    | 0.305          | 121          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |
| 1,2,3-Trichloropropane      | ND              | 0.252    | 0.258          | 102          |           | -       | -         |        | 65-135     | -      |         | 20     | Α             |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514937

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery |        | Recovery<br>Limits | RPD   | Qual     | RPD<br>Limits |
|----------------------------|------------------|-------------|---------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | gh Lab A    | ssociated sam | ple(s): 01 (    | QC Batch | ID: WG20     | 42029-6 Q        | C Samp | le: L25149         | 38-01 | Client I | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 3.1           | 78              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.4           | 110             |          | -            | -                |        | 70-130             | -     |          | 20            |
| Benzene                    | 12               | 4           | 14            | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Toluene                    | 15               | 4           | 17            | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Ethylbenzene               | 0.54             | 4           | 4.2           | 92              |          | -            | -                |        | 70-130             | -     |          | 20            |
| p/m-Xylene                 | 5.7              | 8           | 13            | 91              |          | -            | -                |        | 70-130             | -     |          | 20            |
| o-Xylene                   | 6.4              | 4           | 9.7           | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| Isopropylbenzene           | 0.50             | 4           | 3.8           | 82              |          | -            | -                |        | 70-130             | -     |          | 20            |
| 1,3,5-Trimethylbenzene     | 16               | 4           | 18            | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| 1,2,4-Trimethylbenzene     | 15               | 4           | 17            | 50              | Q        | -            | -                |        | 70-130             | -     |          | 20            |
| Naphthalene                | 15               | 4           | 18            | 75              |          | -            | -                |        | 70-130             | -     |          | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 98                   |                      | 80-120     |
| 4-Bromofluorobenzene   | 112                  |                      | 80-120     |



L2514937

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

**Project Number:** Not Specified Lab Number:

Report Date: 03/18/25

| arameter  | Native Sample            | Duplicate Sample    | Units         | RPD        | Qual      | RPD<br>Limits |
|---|--------------------------|---------------------|---------------|------------|-----------|---------------|
| platile Organics by GC/MS - Westborough Lab<br>PENCER ROAD-255-265 FT | Associated sample(s): 01 | QC Batch ID: WG2042 | 2029-5 QC Sai | mple: L251 | 4937-01 C | lient ID: 108 |
| Methyl tert butyl ether   | ND                       | ND                  | ug/l          | NC         |           | 20            |
| 1,2-Dichloroethane  | ND                       | ND                  | ug/l          | NC         |           | 20            |
| Benzene   | 10                       | 11                  | ug/l          | 10         |           | 20            |
| Toluene   | 33                       | 34                  | ug/l          | 3          |           | 20            |
| Ethylbenzene  | 1.1                      | 1.2                 | ug/l          | 9          |           | 20            |
| p/m-Xylene  | 18                       | 20                  | ug/l          | 11         |           | 20            |
| o-Xylene  | 7.7                      | 8.3                 | ug/l          | 8          |           | 20            |
| Isopropylbenzene  | 0.67                     | 0.72                | ug/l          | 7          |           | 20            |
| 1,3,5-Trimethylbenzene  | 50                       | 55                  | ug/l          | 10         |           | 20            |
| 1,2,4-Trimethylbenzene  | 46                       | 51                  | ug/l          | 10         |           | 20            |
| Naphthalene   | 25                       | 25                  | ug/l          | 0          |           | 20            |
| Xylenes, Total <sup>1</sup>   | 26                       | 28                  | ug/l          | 10         |           | 20            |

|                        |                     |           |           | Acceptance |
|------------------------|---------------------|-----------|-----------|------------|
| Surrogate              | %Recovery Qualifier | %Recovery | Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 95                  | 101       |           | 80-120     |
| 4-Bromofluorobenzene   | 116                 | 121       | Q         | 80-120     |



### **METALS**



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2514937-01 Date Collected: 03/14/25 10:56

Client ID: 108 SPENCER ROAD-255-265 FT Date Received: 03/14/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter          | Result      | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|--------------------|-------------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals - | - Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved    | ND          |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:3  | 7 EPA 3005A    | 3,200.8              | MRC     |



L2514937

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

Project Number: Not Specified Report Date: 03/18/25

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Method Blank Analysis Batch Quality Control

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP) Not Specified

**Project Number:** 

Lab Number:

L2514937

Report Date:

| Parameter                                   | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|---|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associated | d sample(s): 01  | Batch: V | VG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                             | 94               |          | -                 |      | 85-115              | -   |      |            |



### Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514937

Report Date:

| Parameter               | Native<br>Sample     | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Qual | Recovery<br>Limits | RPD     | Qual | RPD<br>Limits |
|-------------------------|----------------------|-------------|-------------|-----------------|---------|--------------|------------------|------|--------------------|---------|------|---------------|
| Dissolved Metals - Mans | field Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931   | -01  | Client ID: I       | MS Samı | ple  |               |
| Lead, Dissolved         | ND                   | 0.53        | 0.5081      | 96              |         | -            | -                |      | 70-130             | -       |      | 20            |
| Dissolved Metals - Mans | field Lab Associated | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932   | 2-01 | Client ID: I       | MS Samı | ple  |               |
| Lead, Dissolved         | ND                   | 0.53        | 0.5218      | 98              |         | -            | -                |      | 70-130             | -       |      | 20            |



L2514937

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

pality Control Lab Number:

**Report Date:** 03/18/25

| Parameter                                | Native Sample                   | Duplicate Sample       | Units       | RPD        | Qual RP    | D Limits |
|--|---------------------------------|------------------------|-------------|------------|------------|----------|
| Dissolved Metals - Mansfield Lab Associa | ated sample(s): 01 QC Batch ID: | WG2040887-4 QC Sample: | L2514931-01 | Client ID: | DUP Sample |          |
| Lead, Dissolved                          | ND                              | ND                     | mg/l        | NC         |            | 20       |
| Dissolved Metals - Mansfield Lab Associa | ated sample(s): 01 QC Batch ID: | WG2040887-6 QC Sample: | L2514932-01 | Client ID: | DUP Sample |          |
| Lead, Dissolved                          | ND                              | ND                     | mg/l        | NC         |            | 20       |



Lab Number: L2514937

Project Number: Not Specified Report Date: 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

SUNOCO PIPELINE LP (SPLP)

**Cooler Information** 

Project Name:

Cooler Custody Seal

A Absent

| Container Info | ormation                     |        | Initial | Final | Temp  |      |        | Frozen    |               |
|----------------|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID   | Container Type               | Cooler | рН      | рН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514937-01A   | Vial HCI preserved           | А      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514937-01B   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514937-01C   | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514937-01D   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514937-01E   | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514937-01F   | Plastic 250ml HNO3 preserved | Α      | <2      | <2    | 2.6   | Υ    | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514937 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### **Acronyms**

**EMPC** 

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

**EPA** Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content,

where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated

using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less

than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'. Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benzo(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit
   (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514937Project Number:Not SpecifiedReport Date:03/18/25

#### REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

#### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

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Published Date: 01/24/2025

#### **Certification Information**

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 2 of 2

#### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANÁB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

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#### ANALYTICAL REPORT

Lab Number: L2514938

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

FT

Lab Number:

L2514938

Report Date:

| Lab<br>Sample ID | Client ID                | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |
|------------------|--------------------------|--------|-------------------------|-------------------------|--------------|
| L2514938-01      | 108 SPENCER ROAD-300-310 | DW     | WASHINGTON CROSSING. PA | 03/14/25 13:40          | 03/14/25     |



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514938Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514938Project Number:Not SpecifiedReport Date:03/18/25

#### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics by Method 524.2

L2514938-01: The required Trip Blank for EPA Method 524.2 was not submitted with the sample upon return to the laboratory. It could not be determined if analytes detected were the result of exposure to contaminants during trip from laboratory to field and back to the laboratory. Analytes detected in this sample are to be considered qualified.

The WG2042029-6 MS recoveries performed on L2514938-01 are outside the acceptance criteria for benzene (50%), toluene (50%), 1,3,5-trimethylbenzene (50%) and 1,2,4-trimethylbenzene (50%). The unacceptable percent recoveries are attributed to the elevated concentrations of the target compounds present in the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Sufani Morrissey-Tiffani Morrissey

Authorized Signature:

Title: Technical Director/Representative

Pace

Date: 03/18/25

# **ORGANICS**



### **VOLATILES**



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2514938

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

03/15/25 14:21

Lab ID: L2514938-01 Date Collected: 03/14/25 13:40

Date Received: Client ID: 108 SPENCER ROAD-300-310 FT 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Analytical Date:

Extraction Method: EPA 504.1 Matrix: Dw **Extraction Date:** 03/15/25 09:33 Analytical Method: 14,504.1

Analyst: JKH

| Parameter                                 | Result | Qualifier | Units | RL    | MDL   | Dilution Factor | Column |
|---|--------|-----------|-------|-------|-------|-----------------|--------|
| Microextractables by GC - Westborough Lab |        |           |       |       |       |                 |        |
| 1,2-Dibromoethane                         | ND     |           | ug/l  | 0.010 | 0.005 | 1               | Α      |



**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number: L2514938

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514938-01 Date Collected: 03/14/25 13:40

Date Received: Client ID: 108 SPENCER ROAD-300-310 FT 03/14/25 Field Prep: Sample Location: WASHINGTON CROSSING, PA Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/17/25 11:24

Analyst: MKS

| Parameter                      | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |
|--------------------------------|----------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - W | estborough Lab |           |       |      |      |                 |
|                                | ND             |           | ,,    | 2.50 | 0.40 | ,               |
| Methyl tert butyl ether        | ND             |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,2-Dichloroethane             | ND             |           | ug/l  | 0.50 | 0.15 | 1               |
| Benzene                        | 12             |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                        | 15             |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                   | 0.54           |           | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                     | 5.7            |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                       | 6.4            |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene               | 0.50           |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene         | 16             |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene         | 15             |           | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                    | 15             |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total <sup>1</sup>    | 12             |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 99         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 112        |           | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2514938

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/15/25 13:14 Extraction Date: 03/15/25 09:33

Analyst: JKH

| Parameter                          | Result       | Qualifier | Units | RL         | MDL      |   |
|------------------------------------|--------------|-----------|-------|------------|----------|---|
| Microextractables by GC - Westbord | ough Lab for | sample(s) | : 01  | Batch: WG2 | 040903-1 |   |
| 1,2-Dibromoethane                  | ND           |           | ug/l  | 0.010      | 0.005    | Α |



L2514938

Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number:

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/17/25 10:13

Analyst: MKS

| Parameter                         | Result      | Qualifier | Units    | RL     | MDL         |
|-----------------------------------|-------------|-----------|----------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sampl | e(s): 01 | Batch: | WG2042029-4 |
| Methyl tert butyl ether           | ND          |           | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |           | ug/l     | 0.50   | 0.15        |
| Benzene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Toluene                           | ND          |           | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |           | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |           | ug/l     | 0.50   | 0.30        |
| o-Xylene                          | ND          |           | ug/l     | 0.50   | 0.19        |
| Xylenes, Total <sup>1</sup>       | ND          |           | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |           | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |           | ug/l     | 0.50   | 0.13        |
| Naphthalene                       | ND          |           | ug/l     | 0.50   | 0.14        |

|                        |           | Acceptance |          |  |  |  |
|------------------------|-----------|------------|----------|--|--|--|
| Surrogate              | %Recovery | Qualifier  | Criteria |  |  |  |
| 1,2-Dichlorobenzene-d4 | 106       |            | 80-120   |  |  |  |
| 4-Bromofluorobenzene   | 92        |            | 80-120   |  |  |  |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

L2514938

**Project Number:** Not Specified Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recovery | Qual       | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-------------------|------------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough I | _ab Associated   | sample(s): | 01 Batch: Wo      | G2040903-2 | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 111              |            | -                 |            | 70-130              | -   |      |               | Α      |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514938

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual         | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---|------------------|--------------|-------------------|---------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westboroug | h Lab Associat   | ed sample(s) | ): 01 Batch:      | WG20420 | 029-3               |     |      |               |  |
| Methyl tert butyl ether                 | 85               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                      | 115              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                                 | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                                 | 90               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                            | 95               |              | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                              | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                                | 100              |              | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                        | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                  | 92               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                             | 80               |              | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate              | LCS<br>%Recovery Qual | LCSD<br>%Recovery Qu | Acceptance<br>ual Criteria |
|------------------------|-----------------------|----------------------|----------------------------|
| 1,2-Dichlorobenzene-d4 | 99                    |                      | 80-120                     |
| 4-Bromofluorobenzene   | 110                   |                      | 80-120                     |



## Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514938

Report Date:

|                             | Native        | MS        | MS             | MS           |           | MSD     | MSD       |         | Recovery   |        |         | RPD    |               |
|-----------------------------|---------------|-----------|----------------|--------------|-----------|---------|-----------|---------|------------|--------|---------|--------|---------------|
| Parameter                   | Sample        | Added     | Found          | %Recovery    | Qual      | Found   | %Recovery | Qual    | Limits     | RPD    | Qual    | Limits | <u>Column</u> |
| Microextractables by GC     | - Westborough | Lab Assoc | ciated sample( | (s): 01 QC E | Batch ID: | WG20409 | 03-3 QC S | Sample: | L2514460-0 | )1 Cli | ent ID: | MS San | nple          |
| 1,2-Dibromoethane           | ND            | 0.252     | 0.254          | 101          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |
| 1,2-Dibromo-3-chloropropane | ND            | 0.252     | 0.305          | 121          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |
| 1,2,3-Trichloropropane      | ND            | 0.252     | 0.258          | 102          |           | -       | -         |         | 65-135     | -      |         | 20     | Α             |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514938

Report Date:

| Parameter                                      | Native<br>Sample | MS<br>Added | MS<br>Found   | MS<br>%Recovery | ' Qual   | MSD<br>Found | MSD<br>%Recovery | Recovery Qual Limits | /<br>RPD | _         | RPD<br>Limits |
|--|------------------|-------------|---------------|-----------------|----------|--------------|------------------|----------------------|----------|-----------|---------------|
| Volatile Organics by GC/<br>SPENCER ROAD-300-3 |                  | gh Lab A    | ssociated sam | nple(s): 01     | QC Batch | ID: WG20     | 42029-6 Q        | C Sample: L2514      | 938-01   | Client ID | ): 108        |
| Methyl tert butyl ether                        | ND               | 4           | 3.1           | 78              |          | -            | =                | 70-130               | -        |           | 20            |
| 1,2-Dichloroethane                             | ND               | 4           | 4.4           | 110             |          | -            | -                | 70-130               | -        |           | 20            |
| Benzene  | 12               | 4           | 14            | 50              | Q        | -            | -                | 70-130               | -        |           | 20            |
| Toluene  | 15               | 4           | 17            | 50              | Q        | -            | -                | 70-130               | -        |           | 20            |
| Ethylbenzene                                   | 0.54             | 4           | 4.2           | 92              |          | -            | -                | 70-130               | -        |           | 20            |
| p/m-Xylene                                     | 5.7              | 8           | 13            | 91              |          | -            | -                | 70-130               | -        |           | 20            |
| o-Xylene                                       | 6.4              | 4           | 9.7           | 82              |          | -            | -                | 70-130               | -        |           | 20            |
| Isopropylbenzene                               | 0.50             | 4           | 3.8           | 82              |          | -            | -                | 70-130               | -        |           | 20            |
| 1,3,5-Trimethylbenzene                         | 16               | 4           | 18            | 50              | Q        | -            | -                | 70-130               | -        |           | 20            |
| 1,2,4-Trimethylbenzene                         | 15               | 4           | 17            | 50              | Q        | -            | -                | 70-130               | -        |           | 20            |
| Naphthalene                                    | 15               | 4           | 18            | 75              |          | -            | -                | 70-130               | -        |           | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 98                   |                      | 80-120     |
| 4-Bromofluorobenzene   | 112                  |                      | 80-120     |



L2514938

## Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Quality Control Lab Number:

**Report Date:** 03/18/25

|                                 |   |   |  |         | RPD  |  |
|---------------------------------|---|---|--|---------|--|--|
| Native Sample                   | Duplicate Sam   | ple Units   | RPD  | Qual    | Limits   |  |
| gh Lab Associated sample(s): 01 | QC Batch ID: WC   | 92042029-5 QC S   | Sample: L251   | 4937-01 | Client ID: D   | UP Sample  |
| ND                              | ND  | ug/l  | NC   |         | 20   |  |
| ND                              | ND  | ug/l  | NC   |         | 20   |  |
| 10                              | 11  | ug/l  | 10   |         | 20   |  |
| 33                              | 34  | ug/l  | 3  |         | 20   |  |
| 1.1                             | 1.2   | ug/l  | 9  |         | 20   |  |
| 18                              | 20  | ug/l  | 11   |         | 20   |  |
| 7.7                             | 8.3   | ug/l  | 8  |         | 20   |  |
| 0.67                            | 0.72  | ug/l  | 7  |         | 20   |  |
| 50                              | 55  | ug/l  | 10   |         | 20   |  |
| 46                              | 51  | ug/l  | 10   |         | 20   |  |
| 25                              | 25  | ug/l  | 0  |         | 20   |  |
| 26                              | 28  | ug/l  | 10   |         | 20   |  |
| •                               | gh Lab Associated sample(s): 01  ND  ND  10  33  1.1  18  7.7  0.67  50  46  25 | gh Lab Associated sample(s): 01 QC Batch ID: WC ND ND ND ND 10 11 33 34 1.1 1.2 18 20 7.7 8.3 0.67 0.72 50 55 46 51 25 25 | ND   ND   ug/l   Ug/l   ND   ug/l   Ug/l   ND   ug/l   Ug | ND      | gh Lab         Associated sample(s):         01         QC Batch ID:         WG2042029-5         QC Sample:         L2514937-01           ND         ND         ug/l         NC           10         11         ug/l         10           33         34         ug/l         3           1.1         1.2         ug/l         9           18         20         ug/l         11           7.7         8.3         ug/l         8           0.67         0.72         ug/l         7           50         55         ug/l         10           46         51         ug/l         10           46         51         ug/l         0 | Native Sample         Duplicate Sample         Units         RPD         Qual         Limits           gh Lab         Associated sample(s): 01         QC Batch ID: WG2042029-5         QC Sample: L2514937-01         Client ID: D           ND         ND         ND         NB         NB         NB         20           ND         ND         NB         NB         NB         20           10         11         Ug/l         10         20           33         34         Ug/l         3         20           11.1         1.2         Ug/l         9         20           18         20         Ug/l         11         20           7.7         8.3         Ug/l         8         20           0.67         0.72         Ug/l         7         20           46         51         Ug/l         10         20           25         25         Ug/l         0         0         20 |

|                        |                     |           |           | Acceptance |  |
|------------------------|---------------------|-----------|-----------|------------|--|
| Surrogate              | %Recovery Qualifier | %Recovery | Qualifier | Criteria   |  |
| 1,2-Dichlorobenzene-d4 | 95                  | 101       |           | 80-120     |  |
| 4-Bromofluorobenzene   | 116                 | 121       | Q         | 80-120     |  |



### **METALS**



03/14/25 13:40

Date Collected:

Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514938Project Number:Not SpecifiedReport Date:03/18/25

**SAMPLE RESULTS** 

Lab ID: L2514938-01

Client ID: 108 SPENCER ROAD-300-310 FT Date Received: 03/14/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter        | Result      | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|------------------|-------------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals | - Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved  | ND          |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/15/25 09:3    | 7 03/15/25 18:4  | 2 EPA 3005A    | 3,200.8              | MRC     |



L2514938

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

**Project Number:** Not Specified **Report Date:** 03/18/25

**Method Blank Analysis Batch Quality Control** 

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2040887-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/15/25 16:07 3,200.8 MRC 03/15/25 09:37

**Prep Information** 

Digestion Method: EPA 3005A



L2514938

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

Project Number: Not Specified Report Date: 03/18/25

| Parameter                           | LCS<br>%Recovery        | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|-------------------------------------|-------------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab As | ssociated sample(s): 01 | Batch: \ | NG2040887-2       |      |                     |     |      |            |
| Lead, Dissolved                     | 94                      |          | -                 |      | 85-115              | -   |      |            |



### Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2514938

**Report Date:** 03/18/25

| Parameter                      | Native<br>Sample | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Qual | Recovery<br>Limits | RPD    | Qual | RPD<br>Limits |
|--------------------------------|------------------|-------------|-------------|-----------------|---------|--------------|------------------|------|--------------------|--------|------|---------------|
| Dissolved Metals - Mansfield I | Lab Associated   | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-3 | QC Sa        | mple: L2514931   | -01  | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved                | ND               | 0.53        | 0.5081      | 96              |         | -            | -                |      | 70-130             | -      |      | 20            |
| Dissolved Metals - Mansfield I | Lab Associated   | sample(s):  | 01 QC B     | atch ID: WG20   | 40887-5 | QC Sa        | mple: L2514932-  | -01  | Client ID:         | MS Sam | ple  |               |
| Lead, Dissolved                | ND               | 0.53        | 0.5218      | 98              |         | -            | -                |      | 70-130             | -      |      | 20            |



L2514938

# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

y Control Lab Number:

**Report Date:** 03/18/25

| Parameter                           | Nat                      | tive Sample    | Duplicate  | Sample     | Units       | RPD        | Qual RF    | PD Limits |
|-------------------------------------|--------------------------|----------------|------------|------------|-------------|------------|------------|-----------|
| Dissolved Metals - Mansfield Lab As | ssociated sample(s): 01  | QC Batch ID: W | G2040887-4 | QC Sample: | L2514931-01 | Client ID: | DUP Sample | Э         |
| Lead, Dissolved                     |                          | ND             | N          | D          | mg/l        | NC         |            | 20        |
| Dissolved Metals - Mansfield Lab As | associated sample(s): 01 | QC Batch ID: W | G2040887-6 | QC Sample: | L2514932-01 | Client ID: | DUP Sample | 9         |
| Lead, Dissolved                     |                          | ND             | N          | D          | mg/l        | NC         |            | 20        |



Serial\_No:03182515:21 **Lab Number:** L2514938

Project Name: SUNOCO PIPELINE LP (SPLP) Project Number: Not Specified

**Report Date:** 03/18/25

### Sample Receipt and Container Information

YES Were project specific reporting limits specified?

**Cooler Information** 

**Custody Seal** Cooler

Α Absent

| Container Information |                              |        | Initial | Final | Temp  |      |        | Frozen    |               |
|-----------------------|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID          | Container Type               | Cooler | pН      | pН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2514938-01A          | Vial HCl preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514938-01B          | Vial HCI preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514938-01C          | Vial HCI preserved           | Α      | NA      |       | 2.6   | Υ    | Absent |           | 524.2(14)     |
| L2514938-01D          | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514938-01E          | Vial Na2S2O3 preserved       | Α      | NA      |       | 2.6   | Υ    | Absent |           | 504(14)       |
| L2514938-01F          | Plastic 250ml HNO3 preserved | Α      | <2      | <2    | 2.6   | Υ    | Absent |           | PB-2008S(180) |



#### **GLOSSARY**

#### **Acronyms**

**EMPC** 

**EPA** 

LOD

MDI

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable (DoD report formats only)

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

Environmental Protection Agency.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

 Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content,

where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any

adjustments from dilutions, concentrations or moisture content, where applicable.

- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for

which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less

than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF

and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.



#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit
   (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively



#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)



Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2514938Project Number:Not SpecifiedReport Date:03/18/25

### **REFERENCES**

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

### LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 1 of 2

### **Certification Information**

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

**EPA 624.1**: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

**Drinking Water** 

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 2 of 2

### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| 110 Eagleview Blvd, Suite<br>Exton, PA 19341   | 110  |          |            | Final (610) 458<br>EMult SGrillo@ge  | Stephania Grilio  se è (610) 458-1077x3064 / (610) 458-2300  se SGrillo@gesonline.com; gesinbox@gesonline.com  se la gos-invocas@gesonline.com  gesigenusonline.com |                          |                   |             |             | Scan QR Cude for instructions |   |      |               |             |                |                      |                             |  |
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### ANALYTICAL REPORT

Lab Number: L2515301

Client: Groundwater & Environmental Services, In

410 Eagleview Blvd Exton, PA 19341

ATTN: Stephanie Grillo Phone: (641) 458-1077

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified Report Date: 03/18/25

The original project report/data package is held by Pace Analytical Services. This report/data package is paginated and should be reproduced only in its entirety. Pace Analytical Services holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Lab<br>Sample ID | Client ID                       | Matrix | Sample<br>Location      | Collection<br>Date/Time | Receive Date |
|------------------|---------------------------------|--------|-------------------------|-------------------------|--------------|
| L2515301-01      | 108 SPENCER ROAD- 424-<br>460FT | DW     | WASHINGTON CROSSING, PA | 03/17/25 12:43          | 03/17/25     |



### **Case Narrative**

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number:

L2515301

**Project Number:** 

Not Specified

Report Date:

03/18/25

### **Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Cattlin Wallet Caitlin Walukevich

Authorized Signature:

Title: Technical Director/Representative

Date: 03/18/25

# **ORGANICS**



### **VOLATILES**



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2515301

Project Number: Not Specified Report Date: 03/18/25

SAMPLE RESULTS

Lab ID: L2515301-01 Date Collected: 03/17/25 12:43

Client ID: 108 SPENCER ROAD- 424-460FT Date Received: 03/17/25
Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

JKH

Analyst:

Matrix: Dw Extraction Method: EPA 504.1
Analytical Method: 14,504.1 Extraction Date: 03/18/25 07:32

Analytical Date: 03/18/25 10:35

Qualifier Units RL MDL **Dilution Factor** Column **Parameter** Result Microextractables by GC - Westborough Lab 1,2-Dibromoethane ND ug/l 0.010 0.005 1 Α



**Project Name:** SUNOCO PIPELINE LP (SPLP) Lab Number: L2515301

**Project Number:** Report Date: Not Specified 03/18/25

**SAMPLE RESULTS** 

Lab ID: L2515301-01 Date Collected: 03/17/25 12:43

Date Received: 03/17/25 Client ID: 108 SPENCER ROAD- 424-460FT Field Prep: Sample Location: WASHINGTON CROSSING, PA Refer to COC

Sample Depth:

Matrix: Dw

Analytical Method: 16,524.2 Analytical Date: 03/18/25 08:44

Analyst: MKS

| Parameter                       | Result         | Qualifier | Units | RL   | MDL  | Dilution Factor |
|---------------------------------|----------------|-----------|-------|------|------|-----------------|
| Volatile Organics by GC/MS - We | estborough Lab |           |       |      |      |                 |
| Methyl tert butyl ether         | ND             |           | ug/l  | 0.50 | 0.13 | 1               |
| 1,2-Dichloroethane              | ND             |           | ug/l  | 0.50 | 0.15 | 1               |
| Benzene                         | 14             |           | ug/l  | 0.50 | 0.19 | 1               |
| Toluene                         | 1.5            |           | ug/l  | 0.50 | 0.19 | 1               |
| Ethylbenzene                    | 0.14           | J         | ug/l  | 0.50 | 0.13 | 1               |
| p/m-Xylene                      | 0.75           |           | ug/l  | 0.50 | 0.30 | 1               |
| o-Xylene                        | 5.5            |           | ug/l  | 0.50 | 0.19 | 1               |
| Isopropylbenzene                | 0.49           | J         | ug/l  | 0.50 | 0.13 | 1               |
| 1,3,5-Trimethylbenzene          | 3.1            |           | ug/l  | 0.50 | 0.15 | 1               |
| 1,2,4-Trimethylbenzene          | 3.0            |           | ug/l  | 0.50 | 0.13 | 1               |
| Naphthalene                     | 12             |           | ug/l  | 0.50 | 0.14 | 1               |
| Xylenes, Total <sup>1</sup>     | 6.3            |           | ug/l  | 0.50 | 0.19 | 1               |

| Surrogate              | % Recovery | Qualifier | Acceptance<br>Criteria |  |
|------------------------|------------|-----------|------------------------|--|
| 1,2-Dichlorobenzene-d4 | 96         |           | 80-120                 |  |
| 4-Bromofluorobenzene   | 86         |           | 80-120                 |  |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2515301

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 14,504.1 Extraction Method: EPA 504.1

Analytical Date: 03/18/25 09:20 Extraction Date: 03/18/25 07:32

Analyst: JKH

| Parameter                          | Result      | Qualifier | Units | RL           | MDL    |   |
|------------------------------------|-------------|-----------|-------|--------------|--------|---|
| Microextractables by GC - Westboro | ugh Lab for | sample(s) | : 01  | Batch: WG204 | 1769-1 |   |
| 1,2-Dibromoethane                  | ND          |           | ug/l  | 0.010        | 0.005  | Α |



Project Name: SUNOCO PIPELINE LP (SPLP) Lab Number: L2515301

Project Number: Not Specified Report Date: 03/18/25

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 03/18/25 05:52

Analyst: GMT

| Parameter                         | Result      | Qualifier  | Units    | RL     | MDL         |
|-----------------------------------|-------------|------------|----------|--------|-------------|
| Volatile Organics by GC/MS - West | borough Lab | for sample | e(s): 01 | Batch: | WG2042088-4 |
| Methyl tert butyl ether           | ND          |            | ug/l     | 0.50   | 0.13        |
| 1,2-Dichloroethane                | ND          |            | ug/l     | 0.50   | 0.15        |
| Benzene                           | ND          |            | ug/l     | 0.50   | 0.19        |
| Toluene                           | ND          |            | ug/l     | 0.50   | 0.19        |
| Ethylbenzene                      | ND          |            | ug/l     | 0.50   | 0.13        |
| p/m-Xylene                        | ND          |            | ug/l     | 0.50   | 0.30        |
| o-Xylene                          | ND          |            | ug/l     | 0.50   | 0.19        |
| Isopropylbenzene                  | ND          |            | ug/l     | 0.50   | 0.13        |
| 1,3,5-Trimethylbenzene            | ND          |            | ug/l     | 0.50   | 0.15        |
| 1,2,4-Trimethylbenzene            | ND          |            | ug/l     | 0.50   | 0.13        |
| Naphthalene                       | ND          |            | ug/l     | 0.50   | 0.14        |
| Xylenes, Total <sup>1</sup>       | ND          |            | ug/l     | 0.50   | 0.19        |

|                        |                    | Acceptance |
|------------------------|--------------------|------------|
| Surrogate              | %Recovery Qualifie | r Criteria |
| 1,2-Dichlorobenzene-d4 | 109                | 80-120     |
| 4-Bromofluorobenzene   | 87                 | 80-120     |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Parameter                               | LCS<br>%Recovery | Qual       | LCSD<br>%Recovery | Qual       | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits | Column |
|---|------------------|------------|-------------------|------------|---------------------|-----|------|---------------|--------|
| Microextractables by GC - Westborough I | Lab Associated   | sample(s): | 01 Batch: We      | G2041769-2 | 2                   |     |      |               |        |
| 1,2-Dibromoethane                       | 112              |            | -                 |            | 70-130              | -   |      |               | Α      |



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Parameter                             | LCS<br>%Recovery  | Qual         | LCSD<br>%Recovery | Qual    | %Recovery<br>Limits | RPD | Qual | RPD<br>Limits |  |
|---------------------------------------|-------------------|--------------|-------------------|---------|---------------------|-----|------|---------------|--|
| Volatile Organics by GC/MS - Westboro | ugh Lab Associate | ed sample(s) | ): 01 Batch:      | WG20420 | )88-3               |     |      |               |  |
| Methyl tert butyl ether               | 118               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2-Dichloroethane                    | 128               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Benzene                               | 130               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Toluene                               | 130               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Ethylbenzene                          | 115               |              | -                 |         | 70-130              | -   |      | 20            |  |
| p/m-Xylene                            | 120               |              | -                 |         | 70-130              | -   |      | 20            |  |
| o-Xylene                              | 112               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Isopropylbenzene                      | 122               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,3,5-Trimethylbenzene                | 118               |              | -                 |         | 70-130              | -   |      | 20            |  |
| 1,2,4-Trimethylbenzene                | 115               |              | -                 |         | 70-130              | -   |      | 20            |  |
| Naphthalene                           | 105               |              | -                 |         | 70-130              | -   |      | 20            |  |

| Surrogate                                      | LCS<br>%Recovery Qual | LCSD<br>%Recovery | Qual | Acceptance<br>Criteria |
|--|-----------------------|-------------------|------|------------------------|
| 1,2-Dichlorobenzene-d4<br>4-Bromofluorobenzene | 105<br>99             |                   |      | 80-120<br>80-120       |



## Matrix Spike Analysis Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Parameter                   | Native<br>Sample | MS<br>Added | MS<br>Found  | MS<br>%Recovery | Qual      | MSD<br>Found | MSD<br>%Recovery | Qual   | Recovery<br>Limits | RPD    | Qual    | RPD<br>Limits | <u>Colum</u> n |
|-----------------------------|------------------|-------------|--------------|-----------------|-----------|--------------|------------------|--------|--------------------|--------|---------|---------------|----------------|
| Microextractables by GC - \ | Westborough      | Lab Assoc   | iated sample | (s): 01 QC E    | Batch ID: | WG20417      | 69-3 QC S        | ample: | L2515298-0         | 01 Cli | ent ID: | MS San        | nple           |
| 1,2-Dibromoethane           | ND               | 0.246       | 0.273        | 111             |           | -            | -                |        | 65-135             | -      |         | 20            | Α              |
| 1,2-Dibromo-3-chloropropane | ND               | 0.246       | 0.310        | 126             |           | -            | -                |        | 65-135             | -      |         | 20            | Α              |
| 1,2,3-Trichloropropane      | ND               | 0.246       | 0.264        | 107             |           | -            | -                |        | 65-135             | -      |         | 20            | Α              |



## Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Parameter                  | Native<br>Sample | MS<br>Added | MS<br>Found    | MS<br>%Recovery | Qual     | MSD<br>Found | MSD<br>%Recovery | Qual   | Recovery<br>Limits | RPD   | Qual      | RPD<br>Limits |
|----------------------------|------------------|-------------|----------------|-----------------|----------|--------------|------------------|--------|--------------------|-------|-----------|---------------|
| Volatile Organics by GC/MS | - Westborou      | igh Lab     | Associated sam | ple(s): 01 (    | QC Batch | ID: WG20     | 42088-6 Q        | C Samp | ole: L25153        | 00-01 | Client II | D: MS Sample  |
| Methyl tert butyl ether    | ND               | 4           | 4.0            | 100             |          | -            | -                |        | 70-130             | -     |           | 20            |
| 1,2-Dichloroethane         | ND               | 4           | 4.8            | 120             |          | -            | -                |        | 70-130             | -     |           | 20            |
| Benzene                    | ND               | 4           | 4.7            | 118             |          | -            | -                |        | 70-130             | -     |           | 20            |
| Toluene                    | ND               | 4           | 4.4            | 110             |          | -            | -                |        | 70-130             | -     |           | 20            |
| Ethylbenzene               | ND               | 4           | 4.0            | 100             |          | -            | -                |        | 70-130             | -     |           | 20            |
| p/m-Xylene                 | ND               | 8           | 8.2            | 103             |          | -            | -                |        | 70-130             | -     |           | 20            |
| o-Xylene                   | ND               | 4           | 3.9            | 98              |          | -            | -                |        | 70-130             | -     |           | 20            |
| Isopropylbenzene           | ND               | 4           | 4.1            | 103             |          | -            | -                |        | 70-130             | -     |           | 20            |
| 1,3,5-Trimethylbenzene     | ND               | 4           | 4.0            | 100             |          | -            | -                |        | 70-130             | -     |           | 20            |
| 1,2,4-Trimethylbenzene     | ND               | 4           | 4.1            | 103             |          | -            | -                |        | 70-130             | -     |           | 20            |
| Naphthalene                | ND               | 4           | 3.4            | 85              |          | -            | -                |        | 70-130             | -     |           | 20            |

|                        | MS                   | MSD                  | Acceptance |
|------------------------|----------------------|----------------------|------------|
| Surrogate              | % Recovery Qualifier | % Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 100                  |                      | 80-120     |
| 4-Bromofluorobenzene   | 100                  |                      | 80-120     |



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Not Specified

**Project Number:** 

Lab Number:

L2515301

Report Date:

| arameter                             | Native Sample                    | Duplicate Sampl  | e Units         | RPD        | RPI<br>Qual Lim   |               |
|--------------------------------------|----------------------------------|------------------|-----------------|------------|-------------------|---------------|
| olatile Organics by GC/MS - Westboro | ugh Lab Associated sample(s): 01 | QC Batch ID: WG2 | 042088-5 QC San | nple: L251 | 5299-01 Client II | D: DUP Sample |
| Methyl tert butyl ether              | ND                               | ND               | ug/l            | NC         |                   | 20            |
| 1,2-Dichloroethane                   | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Benzene                              | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Toluene                              | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Ethylbenzene                         | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| p/m-Xylene                           | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| o-Xylene                             | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Isopropylbenzene                     | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| 1,3,5-Trimethylbenzene               | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| 1,2,4-Trimethylbenzene               | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Naphthalene                          | ND                               | ND               | ug/l            | NC         | 2                 | 20            |
| Xylene (Total) <sup>1</sup>          | ND                               | ND               | ug/l            | NC         | 2                 | 20            |

|                        |                    |                       | Acceptance |
|------------------------|--------------------|-----------------------|------------|
| Surrogate              | %Recovery Qualifie | r %Recovery Qualifier | Criteria   |
| 1,2-Dichlorobenzene-d4 | 106                | 107                   | 80-120     |
| 4-Bromofluorobenzene   | 89                 | 90                    | 80-120     |



### **METALS**



03/17/25 12:43

Date Collected:

Project Name:SUNOCO PIPELINE LP (SPLP)Lab Number:L2515301Project Number:Not SpecifiedReport Date:03/18/25

SAMPLE RESULTS

Lab ID: L2515301-01

Client ID: 108 SPENCER ROAD- 424-460FT Date Received: 03/17/25 Sample Location: WASHINGTON CROSSING, PA Field Prep: Refer to COC

Sample Depth:

Matrix: Dw

| Parameter        | Result      | Qualifier | Units | RL     | MDL    | Dilution<br>Factor | Date<br>Prepared | Date<br>Analyzed | Prep<br>Method | Analytical<br>Method | Analyst |
|------------------|-------------|-----------|-------|--------|--------|--------------------|------------------|------------------|----------------|----------------------|---------|
| Dissolved Metals | - Mansfield | Lab       |       |        |        |                    |                  |                  |                |                      |         |
| Lead, Dissolved  | ND          |           | mg/l  | 0.0010 | 0.0003 | 1                  | 03/18/25 09:1    | 0 03/18/25 11:17 | . NA           | 3,200.8              | BLR     |



**Project Name:** SUNOCO PIPELINE LP (SPLP)

Lab Number: L2515301

**Project Number:** Not Specified **Report Date:** 03/18/25

> **Method Blank Analysis Batch Quality Control**

**Dilution Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared** Analyzed **Parameter Units** RLMDL Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG2041739-1 Lead, Dissolved ND mg/l 0.0010 0.0003 03/18/25 09:39 3,200.8 BLR 03/18/25 09:10

**Prep Information** 

Digestion Method: NA



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP) Not Specified

**Project Number:** 

Lab Number:

L2515301

Report Date:

| Parameter                                  | LCS<br>%Recovery | Qual     | LCSD<br>%Recovery | Qual | %Recovery<br>Limits | RPD | Qual | RPD Limits |
|--|------------------|----------|-------------------|------|---------------------|-----|------|------------|
| Dissolved Metals - Mansfield Lab Associate | d sample(s): 01  | Batch: W | /G2041739-2       |      |                     |     |      |            |
| Lead, Dissolved                            | 92               |          | =                 |      | 85-115              | -   |      |            |



### Matrix Spike Analysis Batch Quality Control

**Project Name:** SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| <u>Parameter</u>             | Native<br>Sample | MS<br>Added | MS<br>Found | MS<br>%Recovery | Qual    | MSD<br>Found | MSD<br>%Recovery | Recove<br>Qual Limits | ,         | RPD<br>Qual Limits |
|------------------------------|------------------|-------------|-------------|-----------------|---------|--------------|------------------|-----------------------|-----------|--------------------|
| Dissolved Metals - Mansfield | Lab Associated   | sample(s):  | 01 QC B     | atch ID: WG20   | 41739-3 | QC Sar       | mple: L251529    | 7-01 Client ID        | : MS Sam  | ple                |
| Lead, Dissolved              | ND               | 0.053       | 0.0462      | 87              |         | -            | -                | 70-130                | -         | 20                 |
| Dissolved Metals - Mansfield | Lab Associated   | sample(s):  | 01 QC B     | atch ID: WG20   | 41739-5 | WG2041       | 739-6 QC Sar     | mple: L2515305        | -01 Clier | nt ID: MS Sample   |
| Lead, Dissolved              | ND               | 0.053       | 0.0451      | 85              |         | 0.0478       | 90               | 70-130                | 6         | 20                 |



Lab Duplicate Analysis

Batch Quality Control

Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

Lab Number:

L2515301

Report Date:

| Parameter  | Native Sample   | Duplicate Sample       | Units       | RPD        | Qual RPD   | Limits |
|--|-----------------|------------------------|-------------|------------|------------|--------|
| Dissolved Metals - Mansfield Lab Associated sample(s): | 01 QC Batch ID: | WG2041739-4 QC Sample: | L2515297-01 | Client ID: | DUP Sample |        |
| Lead, Dissolved  | ND              | ND                     | mg/l        | NC         |            | 20     |



Project Name: SUNOCO PIPELINE LP (SPLP)

Project Number: Not Specified

**Lab Number:** L2515301 **Report Date:** 03/18/25

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

| Cooler | Custody Seal |
|--------|--------------|
| A      | Absent       |
| В      | Absent       |
| С      | Absent       |
| D      | Absent       |

| L2515301-01A Vial HCl preserved |                              |        | Initial | Final | Temp  |      |        | Frozen    |               |
|---------------------------------|------------------------------|--------|---------|-------|-------|------|--------|-----------|---------------|
| Container ID                    | Container Type               | Cooler | pН      | pН    | deg C | Pres | Seal   | Date/Time | Analysis(*)   |
| L2515301-01A                    | Vial HCI preserved           | В      | NA      |       | 2.2   | Υ    | Absent |           | 524.2(14)     |
| L2515301-01B                    | Vial HCl preserved           | В      | NA      |       | 2.2   | Υ    | Absent |           | 524.2(14)     |
| L2515301-01C                    | Vial HCl preserved           | В      | NA      |       | 2.2   | Υ    | Absent |           | 524.2(14)     |
| L2515301-01D                    | Vial Na2S2O3 preserved       | В      | NA      |       | 2.2   | Υ    | Absent |           | 504(14)       |
| L2515301-01E                    | Vial Na2S2O3 preserved       | В      | NA      |       | 2.2   | Υ    | Absent |           | 504(14)       |
| L2515301-01F                    | Plastic 250ml HNO3 preserved | В      | <2      | <2    | 2.2   | Υ    | Absent |           | PB-2008S(180) |



**Project Name:** Lab Number: SUNOCO PIPELINE LP (SPLP) L2515301 **Report Date: Project Number:** Not Specified 03/18/25

#### GLOSSARY

#### **Acronyms**

**EPA** 

LOQ

MS

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

**EMPC** - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case

estimate of the concentration.

Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of

analytes or a material containing known and verified amounts of analytes. LCSD

Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

> - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's

reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL

includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the

values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.



#### **Footnotes**

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### **Terms**

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benza(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I The lower value for the two columns has been reported due to obvious interference.
- J Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively



#### **Data Qualifiers**

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

- M Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- **NJ** Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.
- The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)



### REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.

### **LIMITATION OF LIABILITIES**

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Pace Analytical Services LLC

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 1 of 2

### Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

EPA 624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625.1: alpha-Terpineol

**EPA 8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: lodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene. **EPA 8270E:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

SM 2540D: TSS.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

MADEP-APH.

Nonpotable Water: EPA RSK-175 Dissolved Gases

Biological Tissue Matrix: EPA 3050B

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables)

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

Document Type: Form Pre-Qualtrax Document ID: 08-113

**Pace Analytical Services LLC** 

Facility: Northeast

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 27

Published Date: 01/24/2025

Page 2 of 2

### **Certification IDs:**

Westborough Facility - 8 Walkup Dr. Westborough, MA 01581

CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility - 320 Forbes Blvd. Mansfield, MA 02048

CT PH-0825, ANÁB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility - 120 Forbes Blvd. Mansfield, MA 02048

ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

| Pace Pace* Location Requested (City/State): CHAIN-OF-CUSTODY Analytical Request Document Westborough, MA Chain-of-Custody is a LEGAL STOCKMENT. Compiler of informed Highly  |                                       |  |               |   |                  |  |                            |            |                |           | LAB USC DRLY- Affa Workerder Lagin Later Here     |        |                           |                            |  |                  |   |  |     |
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| eet Address.   |                                       |  |               | Phone # (610) 458-1077x3064 / (610) 458-2300  E-Mail: SGrillo@gesonline.com; gesinbox@gesonline.com |                  |  |                            |            |                |           | 類   |        |                           |                            | ra.  | 112              | U   | 1  |     |
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