# PERFORMANCE EVALUATION

Scheduled Study

## LPTP16-S1

03-Feb-2016 Through 18-Mar-2016

**49670108**
RTC Labcode

**MT00945**
EPA Labcode

**Participating Laboratory:**

Energy Laboratories-Helena
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Thank you for participating in study LPTP16-S1. Additional information about this study may be found online at www.sigmaaldrich.com/pt.

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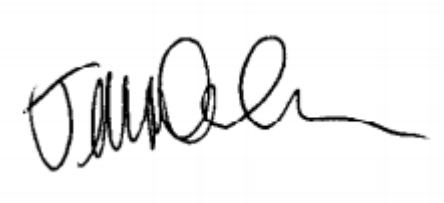
Sincerely,



Jennifer Duhon
Proficiency Testing Supervisor

## Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

RTC is accrediated to perform PT programs for the scope of accredation to ISO/IEC 17043 under ACLASS certificate AP-1469

## Minerals

### Method:EPA 300.0 2.1 (1993) [10053200]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Bromide [1,2]<br>1540 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | 10.4 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 49.7 | 35.9 to 63.5 | -8.52<br>*Evaluation Parameter - c:0.0848, d:0.3989* | Not Acceptable |
| Chloride [1,2]<br>1575 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | 153 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 766 | 545 to 988 | -8.32<br>*Evaluation Parameter - c:0.0892, d:5.3941* | Not Acceptable |
| Fluoride [1,2]<br>1730 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | 48.3 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 189 | 82.1 to 297 | -3.93<br>*Evaluation Parameter - c:0.1781, d:2.0366* | Not Acceptable |
| Nitrate as N [1,2]<br>1810 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | 26.7 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 132 | 98 to 166 | -9.24<br>*Evaluation Parameter - c:0.0676, d:2.4605* | Not Acceptable |
| Sulfate [1,2]<br>2000 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | 45.3 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 215 | 112 to 317 | -4.96<br>*Evaluation Parameter - c:0.1354, d:5.1265* | Not Acceptable |

## Miscellaneous Analytes

### Method:ASA 15-5 [990000317]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Soil Type [2] | 3 | 3 | 3 to 3 | 0 | Acceptable |
| 2999 / SPE014-100G - Lot LRAA9330 /Analyst:MB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | *Evaluation Parameter - a:0, b:3, c:0, d:0* | |

### Method:ASTM D2974-07A (2007) [30026450]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Loss on Ignition (550ºC) [1,2] | 5.5 Wt% | 5.03 | 2.77 to 7.29 | 0.62 | Acceptable |
| 41970 / SPE014-100G - Lot LRAA9330 /Analyst:SP/ Analysis Date: 2016-03-11 | *Evaluation Criteria - 1* ☐*Voluntary* | | | *Evaluation Parameter - a:1, b:0, c:0.15, d:0* | |

### Method:EPA 300.0 2.1 (1993) [10053200]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Nitrate+nitrite as N [1,2] | 26.7 mg/Kg | 142 | 78.1 to 206 | -5.41 | Not Acceptable |
| 1820 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | *Evaluation Criteria - 1* ☐*Voluntary* | | | *Evaluation Parameter - a:1, b:0, c:0.15, d:0* | |
| Nitrite as N [1,2] | <0.05 mg/Kg | 0 | 0 to 0 | 0 | Acceptable |
| 1840 / SPE013-30G - Lot LRAA8535 /Analyst:SW/ Analysis Date: 2016-02-24 | *Evaluation Criteria - 5* ☐*Voluntary* | | | *Evaluation Parameter - deviations:3* | |

### Method:EPA 6010B (1996) [10155609]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Silica as $SiO_2$ [1,2] | 553 mg/Kg | 2770 | 0 to 7780 | -1.33 | Acceptable |
| 1990 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | *Evaluation Criteria - 5* ☐*Voluntary* | | | *Evaluation Parameter - deviations:3* | |
| Sulfur [1,2] | 93.1 mg/Kg | 82.8 | 0 to 398 | 0.1 | Acceptable |

2017 / SPE001-30G - Lot LRAA8516
/Analyst:SD/ Analysis Date: 2016-02-25

*Evaluation Criteria - 5*
☐*Voluntary*

*Evaluation Parameter - deviations:3*

**Method:EPA 9045D 4 (2004) [10198455]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| pH [1,2] | 5.24 Units | 5.27 | 4.03 to 6.5 | -0.07 | Acceptable |

1900 / SPE001-30G - Lot LRAA8516
/Analyst:SH/ Analysis Date: 2016-02-18

*Evaluation Criteria - 5*
☐*Voluntary*

*Evaluation Parameter - deviations:3*

## Nutrients

### Method:EPA 350.1 2 (1993) [10063602]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Ammonia as N [1,2] | 1650 mg/Kg | 2310 | 1550 to 3070 | -2.6 | Acceptable |
| 1515 / SPE014-100G - Lot LRAA9330 /Analyst:CM/ Analysis Date: 2016-02-24 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.0931, d:39.0256* | |

### Method:SM 4500-Norg C 22nd ED (2011) [20119817]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Kjeldahl nitrogen, total (TKN) [1,2] | 1795 mg/Kg | 3370 | 1930 to 4800 | -3.29 | Not Acceptable |
| 1795 / SPE014-100G - Lot LRAA9330 /Analyst:CM/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.1361, d:21.2081* | |

## PAH

### Method:MADEP EPH 1.1 (2004) [90017202]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| EPH Aromatic C11-C22 [2]<br>6232 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 587 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 590 | 191 to 989 | -0.02<br>*Evaluation Parameter - a:1, b:0, c:0.1798, d:26.8656* | Acceptable |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 752 mg/kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 502 | 0 to 1210 | 1.06<br>*Evaluation Parameter - c:0.1827, d:143.3845* | Acceptable |
| Naphthalene [1,2]<br>5005 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 5.55 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 3.03 | 1.21 to 4.85 | 4.16<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:0* | Not Acceptable |
| Acenaphthene [1,2]<br>5500 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 6.75 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 5.05 | 2.02 to 8.08 | 1.68<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:0* | Acceptable |
| Acenaphthylene [1,2]<br>5505 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 4.17 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 3.95 | 0.97 to 6.93 | 0.22<br>*Evaluation Parameter - a:0.9, b:0, c:0.2146, d:0.0520* | Acceptable |
| Anthracene [1,2]<br>5555 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 0.607 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 0.66 | 0 to 1.39 | -0.22<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:0.1111* | Acceptable |
| Benzo(a)anthracene [1,2]<br>5575 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 0.603 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 0.88 | 0.39 to 1.38 | -1.68<br>*Evaluation Parameter - a:0.8, b:0, c:0.15, d:0* | Acceptable |
| Benzo(a)pyrene [1,2]<br>5580 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 1.69 mg/kg<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 2.43 | 0.02 to 4.84 | -0.92<br>*Evaluation Parameter - a:0.7, b:0, c:0.2302, d:0.0048* | Acceptable |
| Benzo(b)fluoranthene [1,2] | 6.18 mg/kg | 4.91 | 0.69 to 9.12 | 0.91 | Acceptable |

5585 / SPE007MA-40G - Lot LRAA9569
/Analyst:JS/ Analysis Date: 2016-03-17

*Evaluation Criteria - 1*
☐ *Voluntary*

*Evaluation Parameter - a:0.75, b:0, c:0.2067, d:0.05295*

**Method:MADEP EPH 1.1 (2004) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzo(g,h,i)perylene [1,2]<br>5590 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 0.785 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 0.74 | 0 to 1.56 | 0.15 | Acceptable<br>*Evaluation Parameter - a:0.75, b:0, c:0.2267, d:0.0487* |
| Benzo(k)fluoranthene [1,2]<br>5600 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 6.18 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 0.47 | 0 to 1.18 | 23.9 | Not Acceptable<br>*Evaluation Parameter - a:0.75, b:0, c:0.2151, d:0.1048* |
| Chrysene [1,2]<br>5855 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 0.915 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 1.34 | 0 to 4.44 | -0.41 | Acceptable<br>*Evaluation Parameter - a:0.75, b:0, c:0.2101, d:0.65663* |
| Dibenzo(a,h)anthracene [1,2]<br>5895 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 4.39 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 3.44 | 0 to 10.2 | 0.42 | Acceptable<br>*Evaluation Parameter - a:0.75, b:0, c:0.1827, d:1.43* |
| Fluoranthene [1,2]<br>6265 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 8.03 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 6.19 | 1.82 to 10.6 | 1.26 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.1909, d:0.2749* |
| Fluorene [1,2]<br>6270 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 4.94 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 3.44 | 0 to 8.09 | 0.97 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.1766, d:0.9419* |
| Indeno(1,2,3-cd) pyrene [1,2]<br>6315 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 4.39 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 0.8 | 0.03 to 1.57 | 13.91 | Not Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.2932, d:0.0231594* |
| 2-Methylnaphthalene [1,2]<br>6385 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 20.3 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 8.49 | 0 to 21.4 | 2.75 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:2.600* |
| Phenanthrene [1,2]<br>6615 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | 4.51 mg/kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 3.64 | 1.59 to 5.69 | 1.27 | Acceptable<br>*Evaluation Parameter - a:0.8, b:0, c:0.15, d:0* |

**Method:MADEP EPH 1.1 (2004) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Pyrene [1,2] | 4.74 mg/kg | 9.08 | 3.11 to 15 | -2.18 | Acceptable |
| 6665 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | *Evaluation Criteria - 1* ☐ *Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.2025, d:0.1512* |

## Group Analysis Summary

Acceptable : 16 / 19

Score : 84.21% - (Acceptable)

## Petroleum Hydrocarbons

### Method:EPA 602 [10102202]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzene [1,2]<br>4375 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 9.96 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 9.24 | 5.85 to 12.6 | 0.64<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Ethylbenzene [1,2]<br>4765 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 6.23 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 5.92 | 3.9 to 7.93 | 0.46<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | <2.0 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 0 | 0 to 0 | 0<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Naphthalene [1,2]<br>5005 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 1.29 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 0.78 | 0 to 4.25 | 0.44<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Toluene [1,2]<br>5140 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 30.3 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 30.5 | 16.8 to 44.2 | -0.04<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| m+p-Xylene [1,2]<br>5240 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 24 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 22.8 | 12.5 to 33.1 | 0.35<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| o-Xylene [1,2]<br>5250 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 8.96 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 10.7 | 5.89 to 15.5 | -1.08<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| Xylene, total [1,2]<br>5260 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 33 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 33.5 | 18.4 to 48.6 | -0.1<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |

### Method:EPA 8015B (1996) [10173601]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 446 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 402 | 119 to 685 | 0.47<br>*Evaluation Parameter - a:1, b:0, c:0.2285, d:2.4231* | Acceptable |
| Total Purgeable Hydrocarbons [1,2]<br>5207 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 562 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 468 | 173 to 763 | 0.96<br>*Evaluation Parameter - a:1.06282, b:21.3958, c:0.2285, d:2.4231* | Acceptable |

**Method:EPA 8021B (1996) [10174808]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzene [1,2]<br>4375 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 9.96 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 9.24 | 5.85 to 12.6 | 0.64<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Ethylbenzene [1,2]<br>4765 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 6.23 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 5.92 | 3.9 to 7.93 | 0.46<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | <1.0 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 0 | 0 to 0 | 0<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Naphthalene [1,2]<br>5005 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 1.29 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 0.78 | 0 to 4.25 | 0.44<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Toluene [1,2]<br>5140 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 30.3 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 30.5 | 16.8 to 44.2 | -0.04<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| m+p-Xylene [1,2]<br>5240 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 24 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 22.8 | 12.5 to 33.1 | 0.35<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| o-Xylene [1,2] | 8.96 ug/L | 10.7 | 5.89 to 15.5 | -1.08 | Acceptable |

| | | | | | |
|---|---|---|---|---|---|
| 5250 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.15, d:0* |
| Xylene, total [1,2] | 33 ug/L | 33.5 | 18.4 to 48.6 | -0.1 | Acceptable |
| 5260 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.15, d:0* |

**Method:MADEP VPH 1.1 (2004) [90017406]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzene [1,2] | 9.96 ug/L | 9.24 | 5.85 to 12.6 | 0.64 | Acceptable |
| 4375 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| VPH Aliphatic C5-C8 Unadjusted [1,2] | 295 ug/L | 242 | 146 to 337 | 1.66 | Acceptable |
| 5305 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| VPH Aliphatic C5-C8 [1,2] | 255 ug/L | 225 | 75 to 375 | 0.6 | Acceptable |
| 5304 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:0.9, b:0, c:0.2, d:0* |
| Ethylbenzene [1,2] | 6.23 ug/L | 5.92 | 3.9 to 7.93 | 0.46 | Acceptable |
| 4765 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| Methyl tert-butyl ether (MTBE) [1,2] | <1.0 ug/L | 0 | 0 to 0 | 0 | Acceptable |
| 5000 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| Naphthalene [1,2] | 1.29 ug/L | 0.78 | 0 to 4.25 | 0.44 | Acceptable |
| 5005 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| Toluene [1,2] | 30.3 ug/L | 30.5 | 16.8 to 44.2 | -0.04 | Acceptable |
| 5140 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.15, d:0* |
| VPH Aliphatic C9-C12 Unadjusted [1,2] | 186 ug/L | 126 | 42 to 210 | 2.14 | Acceptable |
| 5307 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:0.9, b:0, c:0.20, d:0* |

| | | | | | |
|---|---|---|---|---|---|
| VPH Aliphatic C9-C12 [1,2] | 102 ug/L | 69.8 | 0 to 430 | 0.27 | Acceptable |
| 5306 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | *Evaluation Parameter - deviations:3* | |

**Method:MADEP VPH 1.1 (2004) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| m+p-Xylene [1,2]<br>5240 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 24 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 22.8 | 12.5 to 33.1 | 0.35<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| o-Xylene [1,2]<br>5250 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 8.96 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 10.7 | 5.89 to 15.5 | -1.08<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| Xylene, total [1,2]<br>5260 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 33 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 33.5 | 18.4 to 48.6 | -0.1<br>*Evaluation Parameter - a:1, b:0, c:0.15, d:0* | Acceptable |
| VPH Aromatic C9-C10 [1,2]<br>5311 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 44.9 ug/L<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 91 | 0 to 1100 | -0.14<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Total Purgeable Hydrocarbons [1,2]<br>5207 / PE1798-2ML - Lot LRAA9842 /Analyst:TB/ Analysis Date: 2016-02-23 | 384 ug/L<br>*Evaluation Criteria - 1*<br>☐ *Voluntary* | 468 | 173 to 763 | -0.85<br>*Evaluation Parameter - a:1.06282, b:21.3958, c:0.2285, d:2.4231* | Acceptable |

## Petroleum Hydrocarbons - Soil

### Method:EPA 8015B (1996) [10173601]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 536 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 498 | 0 to 1010 | 0.22 | Acceptable<br>*Evaluation Parameter - c:0.1900, d:74.9808* |
| Total Purgeable Hydrocarbons [1,2]<br>5207 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 584 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 516 | 0 to 1030 | 0.39 | Acceptable<br>*Evaluation Parameter - c:0.1900, d:74.9808* |

### Method:EPA 8021B (1996) [10174808]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzene [1,2]<br>4375 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 7.88 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 7.85 | 4.32 to 11.4 | 0.03 | Acceptable<br>*Evaluation Parameter - c:0.15, d:0* |
| Ethylbenzene [1,2]<br>4765 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 12.4 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 12.3 | 10.1 to 14.6 | 0.13 | Acceptable<br>*Evaluation Parameter - deviations:3* |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | <0.50 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 0 | 0 to 0 | 0 | Acceptable<br>*Evaluation Parameter - deviations:3* |
| Naphthalene [1,2]<br>5005 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 0.874 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 0.95 | 0.44 to 1.47 | -0.46 | Acceptable<br>*Evaluation Parameter - deviations:3* |
| Toluene [1,2]<br>5140 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 73.2 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 73.8 | 67.6 to 80 | -0.29 | Acceptable<br>*Evaluation Parameter - deviations:3* |
| m+p-Xylene [1,2] | 48.4 mg/Kg | 49.2 | 43.3 to 55.1 | -0.41 | Acceptable |

| | | | | | |
|---|---|---|---|---|---|
| 5240 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| o-Xylene [1,2] | 19.1 mg/Kg | 19 | 10.5 to 27.6 | 0.04 | Acceptable |
| 5250 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 2* ☐*Voluntary* | | | | *Evaluation Parameter - c:0.15, d:0* |
| Xylene, total [1,2] | 67.5 mg/Kg | 67.4 | 27 to 108 | 0.01 | Acceptable |
| 5260 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 2* ☐*Voluntary* | | | | *Evaluation Parameter - c:0.2, d:0* |

**Method:MADEP EPH 1.1 (2004) [90017202]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| EPH Aliphatic C19-C36 [2] | 164 mg/kg | 200 | 11.5 to 388 | -0.57 | Acceptable |
| 6218 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.1798, d:26.8656* |
| Total EPH [2] | 1550 mg/kg | 2050 | 634 to 3460 | -1.06 | Acceptable |
| 6241 / SPE007MA-40G - Lot LRAA9569 /Analyst:JS/ Analysis Date: 2016-03-17 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:0.7700, b:-8.2807, c:0.1644, d:32.2339* |

**Method:MADEP VPH 1.1 (2004) [90017406]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Benzene [1,2] | 7.88 mg/Kg | 7.85 | 4.32 to 11.4 | 0.03 | Acceptable |
| 4375 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 2* ☐*Voluntary* | | | | *Evaluation Parameter - c:0.15, d:0* |
| VPH Aliphatic C5-C8 Unadjusted [1,2] | 322 mg/Kg | 296 | 176 to 416 | 0.65 | Acceptable |
| 5305 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 5* ☐*Voluntary* | | | | *Evaluation Parameter - deviations:3* |
| VPH Aliphatic C5-C8 [1,2] | 241 mg/Kg | 290 | 0 to 680 | -0.38 | Acceptable |
| 5304 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | *Evaluation Criteria - 1* ☐*Voluntary* | | | | *Evaluation Parameter - a:1, b:0, c:0.190, d:74.9808* |

| | | | | | |
|---|---|---|---|---|---|
| Ethylbenzene [1,2]<br>4765 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 12.4 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 12.3 | 10.1 to 14.6 | 0.13<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | <0.50 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 0 | 0 to 0 | 0<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Naphthalene [1,2]<br>5005 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 0.874 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 0.95 | 0.44 to 1.47 | -0.46<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Toluene [1,2]<br>5140 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 73.2 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 73.8 | 67.6 to 80 | -0.29<br>*Evaluation Parameter - deviations:3* | Acceptable |
| VPH Aliphatic C9-C12 Unadjusted [1,2]<br>5307 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 344 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 245 | 0 to 522 | 1.07<br>*Evaluation Parameter - deviations:3* | Acceptable |
| VPH Aliphatic C9-C12 [1,2]<br>5306 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 186 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 122 | 0 to 268 | 1.32<br>*Evaluation Parameter - deviations:3* | Acceptable |

**Method:MADEP VPH 1.1 (2004) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| m+p-Xylene [1,2]<br>5240 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 48.4 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 49.2 | 43.3 to 55.1 | -0.41<br>*Evaluation Parameter - deviations:3* | Acceptable |
| o-Xylene [1,2]<br>5250 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 19.1 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 19 | 10.5 to 27.6 | 0.04<br>*Evaluation Parameter - c:0.15, d:0* | Acceptable |
| Xylene, total [1,2]<br>5260 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 67.5 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 67.4 | 27 to 108 | 0.01<br>*Evaluation Parameter - c:0.2, d:0* | Acceptable |
| VPH Aromatic C9-C10 [1,2]<br>5311 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 77.3 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 70.6 | 13.6 to 128 | 0.35<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Total Purgeable Hydrocarbons [1,2]<br>5207 / SPE008-30G - Lot LRAA9305 /Analyst:TB/ Analysis Date: 2016-02-23 | 486 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 516 | 0 to 1030 | -0.17<br>*Evaluation Parameter - c:0.1900, d:74.9808* | Acceptable |

## Petroleum Hydrocarbons - Water

### Method:MADEP EPH 1.1 (2004) [90017202]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| EPH Aromatic C11-C22 [2]<br>6232 / PE1849-2ML - Lot LRAA8520 /Analyst:JS/ Analysis Date: 2016-03-17 | 472 ug/L<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 473 | 158 to 788 | -0.01 | Acceptable<br>*Evaluation Parameter - a:0.9, b:0, c:0.20, d:0* |
| EPH Aliphatic C19-C36 [2]<br>6218 / PE1849-2ML - Lot LRAA8520 /Analyst:JS/ Analysis Date: 2016-03-17 | <300 ug/L<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 184 | 73.6 to 294 | -5 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:0* |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 / PE1849-2ML - Lot LRAA8520 /Analyst:JS/ Analysis Date: 2016-03-17 | <300 ug/L<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 439 | 176 to 702 | -5 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.2, d:0* |
| Total EPH [2]<br>6241 / PE1849-2ML - Lot LRAA8520 /Analyst:JS/ Analysis Date: 2016-03-17 | 702 ug/L<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 931 | 233 to 1630 | -0.98 | Acceptable<br>*Evaluation Parameter - a:0.7700, b:-8.2807, c:0.1644, d:32.2339* |

## Trace Metals - Solids

### Method:EPA 6010B (1996) [10155609]

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Antimony, Sb [1,2]<br>1005 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 15.7 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 48 | 0 to 136 | -1.11<br>*Evaluation Parameter - c:0.4385, d:8.1700* | Acceptable |
| Arsenic, As [1,2]<br>1010 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 126 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 123 | 85.9 to 160 | 0.24<br>*Evaluation Parameter - c:0.0915, d:1.0653* | Acceptable |
| Barium, Ba [1,2]<br>1015 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 279 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 253 | 186 to 319 | 1.18<br>*Evaluation Parameter - c:0.0823, d:1.3346* | Acceptable |
| Beryllium, Be [1,2]<br>1020 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 193 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 192 | 145 to 239 | 0.06<br>*Evaluation Parameter - c:0.0782, d:0.6438* | Acceptable |
| Boron, B [1,2]<br>1025 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 132 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 139 | 83.5 to 195 | -0.38<br>*Evaluation Parameter - c:0.1333, d:0* | Acceptable |
| Cadmium, Cd [1,2]<br>1030 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 220 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 224 | 164 to 283 | -0.2<br>*Evaluation Parameter - c:0.0884, d:0.0629* | Acceptable |
| Calcium, Ca [1,2]<br>1035 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 3250 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 3090 | 2150 to 4030 | 0.51<br>*Evaluation Parameter - c:0.0730, d:87.3802* | Acceptable |
| Chromium, Cr (total) [1,2]<br>1040 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 182 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 179 | 126 to 231 | 0.17<br>*Evaluation Parameter - c:0.0937, d:0.8163* | Acceptable |
| Cobalt, Co [1,2]<br>1050 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 63.6 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 60.1 | 44.7 to 75.6 | 0.68<br>*Evaluation Parameter - c:0.0851, d:0.0292* | Acceptable |

**Method:EPA 6010B (1996) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Copper, Cu [1,2]<br>1055 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 79 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 78.9 | 58.2 to 99.7 | 0.01<br>*Evaluation Parameter - c:0.0770, d:0.8423* | Acceptable |
| Iron, Fe [1,2]<br>1070 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 4760 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 4280 | 0 to 10200 | 0.24<br>*Evaluation Parameter - c:0.1102, d:1500.6038* | Acceptable |
| Lead, Pb [1,2]<br>1075 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 151 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 145 | 106 to 183 | 0.47<br>*Evaluation Parameter - c:0.0725, d:2.4410* | Acceptable |
| Lithium, Li [2]<br>1080 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 112 mg/Kg<br>*Evaluation Criteria - 5*<br>☐ *Voluntary* | 94.8 | 61.2 to 128 | 1.54<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Magnesium, Mg [1,2]<br>1085 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 3650 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 3470 | 2360 to 4590 | 0.48<br>*Evaluation Parameter - c:0.0685, d:134.2111* | Acceptable |
| Manganese, Mn [1,2]<br>1090 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 344 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 335 | 252 to 418 | 0.32<br>*Evaluation Parameter - c:0.0639, d:6.3268* | Acceptable |
| Molybdenum, Mo [1,2]<br>1100 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 53.3 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 57.8 | 39 to 76.7 | -0.72<br>*Evaluation Parameter - c:0.0893, d:1.1242* | Acceptable |
| Nickel, Ni [1,2]<br>1105 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 145 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 143 | 105 to 182 | 0.16<br>*Evaluation Parameter - c:0.0819, d:1.0454* | Acceptable |
| Potassium, K [1,2]<br>1125 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 3530 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 3080 | 1940 to 4230 | 1.18<br>*Evaluation Parameter - c:0.0938, d:92.7318* | Acceptable |

**Method:EPA 6010B (1996) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Selenium, Se [1,2]<br>1140 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 40.5 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 42.4 | 23.7 to 61.2 | -0.3<br>*Evaluation Parameter - c:0.0935, d:2.2902* | Acceptable |
| Silver, Ag [1,2]<br>1150 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-22 | 79 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 81.6 | 55 to 108 | -0.29<br>*Evaluation Parameter - c:0.1047, d:0.3423* | Acceptable |
| Sodium, Na [1,2]<br>1155 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 4930 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 4580 | 3080 to 6090 | 0.7<br>*Evaluation Parameter - c:0.1028, d:30.5312* | Acceptable |
| Strontium, Sr [1,2]<br>1160 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 408 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 359 | 254 to 463 | 1.41<br>*Evaluation Parameter - c:0.0961, d:0.2863* | Acceptable |
| Thallium, Tl [1,2]<br>1165 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-23 | 55.2 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 52 | 32.7 to 71.2 | 0.5<br>*Evaluation Parameter - c:0.0961, d:1.4134* | Acceptable |
| Tin, Sn [1,2]<br>1175 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 108 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 123 | 71.8 to 174 | -0.88<br>*Evaluation Parameter - c:0.1134, d:3.0560* | Acceptable |
| Titanium, Ti [1,2]<br>1180 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 111 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 119 | 0 to 274 | -0.16<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Vanadium, V [1,2]<br>1185 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 77.5 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 72.3 | 43.1 to 102 | 0.53<br>*Evaluation Parameter - c:0.0624, d:5.2391* | Acceptable |
| Zinc, Zn [1,2]<br>1190 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 757 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 770 | 569 to 971 | -0.19<br>*Evaluation Parameter - c:0.0823, d:3.6814* | Acceptable |

**Method:EPA 6010B (1996) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Phosphorus as P, total [1,2]<br>1910 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 451 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 415 | 244 to 585 | 0.63 | Acceptable<br>*Evaluation Parameter - deviations:3* |
| Aluminum, Al [1,2]<br>1000 / SPE001-30G - Lot LRAA8516 /Analyst:SD/ Analysis Date: 2016-02-19 | 12700 mg/Kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 9510 | 4160 to 14900 | 1.79 | Acceptable<br>*Evaluation Parameter - a:1, b:0, c:0.1082, d:753.611* |

**Method:EPA 6020 (1994) [10156204]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Antimony, Sb [1,2]<br>1005 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 16.8 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 48 | 0 to 136 | -1.07 | Acceptable<br>*Evaluation Parameter - c:0.4385, d:8.1700* |
| Arsenic, As [1,2]<br>1010 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 124 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 123 | 85.9 to 160 | 0.08 | Acceptable<br>*Evaluation Parameter - c:0.0915, d:1.0653* |
| Barium, Ba [1,2]<br>1015 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 294 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 253 | 186 to 319 | 1.86 | Acceptable<br>*Evaluation Parameter - c:0.0823, d:1.3346* |
| Beryllium, Be [1,2]<br>1020 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 191 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 192 | 145 to 239 | -0.06 | Acceptable<br>*Evaluation Parameter - c:0.0782, d:0.6438* |
| Cadmium, Cd [1,2]<br>1030 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 234 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 224 | 164 to 283 | 0.51 | Acceptable<br>*Evaluation Parameter - c:0.0884, d:0.0629* |
| Calcium, Ca [1,2]<br>1035 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 3400 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 3090 | 2150 to 4030 | 0.99 | Acceptable<br>*Evaluation Parameter - c:0.0730, d:87.3802* |
| Chromium, Cr (total) [1,2] | 189 mg/Kg | 179 | 126 to 231 | 0.57 | Acceptable |

| | | | | | |
|---|---|---|---|---|---|
| 1040 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.0937, d:0.8163* | |
| Cobalt, Co [1,2] | 62.6 mg/Kg | 60.1 | 44.7 to 75.6 | 0.49 | Acceptable |
| 1050 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.0851, d:0.0292* | |
| Copper, Cu [1,2] | 79.9 mg/Kg | 78.9 | 58.2 to 99.7 | 0.14 | Acceptable |
| 1055 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.0770, d:0.8423* | |

**Method:EPA 6020 (1994) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Iron, Fe [1,2]<br>1070 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 4750 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 4280 | 0 to 10200 | 0.24 | Acceptable<br>*Evaluation Parameter - c:0.1102, d:1500.6038* |
| Lead, Pb [1,2]<br>1075 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 158 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 145 | 106 to 183 | 1.01 | Acceptable<br>*Evaluation Parameter - c:0.0725, d:2.4410* |
| Magnesium, Mg [1,2]<br>1085 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 3670 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 3470 | 2360 to 4590 | 0.54 | Acceptable<br>*Evaluation Parameter - c:0.0685, d:134.2111* |
| Manganese, Mn [1,2]<br>1090 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 354 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 335 | 252 to 418 | 0.69 | Acceptable<br>*Evaluation Parameter - c:0.0639, d:6.3268* |
| Molybdenum, Mo [1,2]<br>1100 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 55.1 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 57.8 | 39 to 76.7 | -0.43 | Acceptable<br>*Evaluation Parameter - c:0.0893, d:1.1242* |
| Nickel, Ni [1,2]<br>1105 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 149 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 143 | 105 to 182 | 0.47 | Acceptable<br>*Evaluation Parameter - c:0.0819, d:1.0454* |
| Potassium, K [1,2]<br>1125 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 3380 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 3080 | 1940 to 4230 | 0.79 | Acceptable<br>*Evaluation Parameter - c:0.0938, d:92.7318* |
| Selenium, Se [1,2]<br>1140 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 45.6 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 42.4 | 23.7 to 61.2 | 0.51 | Acceptable<br>*Evaluation Parameter - c:0.0935, d:2.2902* |
| Silver, Ag [1,2]<br>1150 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 87.1 mg/Kg<br>*Evaluation Criteria - 2*<br>☐ *Voluntary* | 81.6 | 55 to 108 | 0.62 | Acceptable<br>*Evaluation Parameter - c:0.1047, d:0.3423* |

**Method:EPA 6020 (1994) (Continued)**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Sodium, Na [1,2]<br>1155 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 4550 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 4580 | 3080 to 6090 | -0.06<br>*Evaluation Parameter - c:0.1028, d:30.5312* | Acceptable |
| Strontium, Sr [1,2]<br>1160 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 420 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 359 | 254 to 463 | 1.75<br>*Evaluation Parameter - c:0.0961, d:0.2863* | Acceptable |
| Thallium, Tl [1,2]<br>1165 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 55.2 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 52 | 32.7 to 71.2 | 0.5<br>*Evaluation Parameter - c:0.0961, d:1.4134* | Acceptable |
| Tin, Sn [1,2]<br>1175 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 128 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 123 | 71.8 to 174 | 0.29<br>*Evaluation Parameter - c:0.1134, d:3.0560* | Acceptable |
| Titanium, Ti [1,2]<br>1180 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 112 mg/Kg<br>*Evaluation Criteria - 5*<br>☐*Voluntary* | 119 | 0 to 274 | -0.14<br>*Evaluation Parameter - deviations:3* | Acceptable |
| Vanadium, V [1,2]<br>1185 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 76.7 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 72.3 | 43.1 to 102 | 0.45<br>*Evaluation Parameter - c:0.0624, d:5.2391* | Acceptable |
| Zinc, Zn [1,2]<br>1190 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-19 | 799 mg/Kg<br>*Evaluation Criteria - 2*<br>☐*Voluntary* | 770 | 569 to 971 | 0.43<br>*Evaluation Parameter - c:0.0823, d:3.6814* | Acceptable |
| Aluminum, Al [1,2]<br>1000 / SPE001-30G - Lot LRAA8516 /Analyst:DK/ Analysis Date: 2016-02-24 | 13300 mg/Kg<br>*Evaluation Criteria - 1*<br>☐*Voluntary* | 9510 | 4160 to 14900 | 2.13<br>*Evaluation Parameter - a:1, b:0, c:0.1082, d:753.611* | Acceptable |

**Method:EPA 7196A (1992) [10162400]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Chromium VI, Cr(VI) [1,2] | 50 mg/Kg | 102 | 29.2 to 175 | -2.13 | Acceptable |
| 1045 / SPE012-30G - Lot LRAA9500 /Analyst:CM/ Analysis Date: 2016-02-22 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.1547, d:8.5460* | |

**Method:EPA 7471B (1998) [10166402]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Mercury, Hg [1,2] | 4.49 mg/Kg | 4.59 | 2.34 to 6.84 | -0.13 | Acceptable |
| 1095 / SPE001-30G - Lot LRAA8516 /Analyst:RK/ Analysis Date: 2016-02-18 | *Evaluation Criteria - 2* ☐*Voluntary* | | | *Evaluation Parameter - c:0.1615, d:0.0077* | |

**Method:In House Method [0]**

| Analyte | Result Units | Assigned Value | Accept. Window | Z | Evaluation |
|---|---|---|---|---|---|
| Carbon, C [1,2] | 543 mg/Kg | 1040 | 0 to 8440 | -0.2 | Acceptable |
| 1553 / SPE001-30G - Lot LRAA8516 /Analyst:SP/ Analysis Date: 2016-03-10 | *Evaluation Criteria - 5* ☐*Voluntary* | | | *Evaluation Parameter - deviations:3* | |

# Sample Information

## GASOLINE IN WATER - PT

PE1798-2ML / Lot LRAA9842

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 Volatile Petroleum Hydrocarbons | ug/L | 402 | 324 | 81.4 |
| Benzene [1,2]<br>4375 Petroleum Hydrocarbons | ug/L | 8.55 | 9.24 | 1.13 |
| VPH Aliphatic C5-C8 Unadjusted [1,2]<br>5305 Petroleum Hydrocarbons | ug/L | 225 | 242 | 31.9 |
| VPH Aliphatic C5-C8 [1,2]<br>5304 Petroleum Hydrocarbons | ug/L | 250 | 225 | 67.1 |
| Ethylbenzene [1,2]<br>4765 Petroleum Hydrocarbons | ug/L | 5.21 | 5.92 | 0.67 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 Petroleum Hydrocarbons | ug/L | 0 | 0 | 0 |
| Naphthalene [1,2]<br>5005 Petroleum Hydrocarbons | ug/L | 3.89 | 0.78 | 1.16 |
| Toluene [1,2]<br>5140 Petroleum Hydrocarbons | ug/L | 30.5 | 30.1 | 2.92 |
| VPH Aliphatic C9-C12 Unadjusted [1,2]<br>5307 Petroleum Hydrocarbons | ug/L | 140 | 149 | 36.1 |
| VPH Aliphatic C9-C12 [1,2]<br>5306 Petroleum Hydrocarbons | ug/L | 225 | 69.8 | 120 |
| m+p-Xylene [1,2]<br>5240 Petroleum Hydrocarbons | ug/L | 22.8 | 23.9 | 2.68 |
| o-Xylene [1,2]<br>5250 Petroleum Hydrocarbons | ug/L | 10.7 | 8.68 | 1.15 |
| Xylene, total [1,2]<br>5260 Petroleum Hydrocarbons | ug/L | 33.5 | 32.5 | 3.98 |
| C10-C12 Aliphatic Hydrocarbons [2]<br>9397 Petroleum Hydrocarbons | µg/L | 40 | 0 | 0 |
| C10-C12 Aromatics Hydrocarbons [2]<br>9398 Petroleum Hydrocarbons | µg/L | 50 | 0 | 0 |
| C12-C13 Aromatic Hydrocarbons [2]<br>9400 Petroleum Hydrocarbons | µg/L | 47 | 0 | 0 |
| VPH Aliphatic C5-C6 [1,2]<br>5303 Petroleum Hydrocarbons | µg/L | 72 | 0 | 0 |
| VPH Aliphatic >C6-C8 [1,2]<br>35301 Petroleum Hydrocarbons | µg/L | 100 | 0 | 0 |
| VPH Aliphatic >C8-C10 [1,2]<br>5302 Petroleum Hydrocarbons | µg/L | 60 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| VPH Aromatic >C8-C10 [1,2]<br>5310 Petroleum Hydrocarbons | µg/L | 50 | 0 | 0 |
| VPH Aromatic C9-C10 [1,2]<br>5311 Petroleum Hydrocarbons | ug/L | 32 | 91 | 336 |
| Gasoline range organics (GRO), C5-C10 [1,2]<br>9408 Volatile Petroleum Hydrocarbons | ug/L | 402 | 268 | 298 |
| Total VPH [1,2]<br>9409 Petroleum Hydrocarbons | µg/L | | 0 | 0 |
| Total Purgeable Hydrocarbons [1,2]<br>5207 Petroleum Hydrocarbons | ug/L | 420 | 410 | 127 |
| Gasoline Range Organics, C6-C12 [1,2]<br>9408 Volatile Petroleum Hydrocarbons | ug/L | 402 | 0 | 0 |
| Gasoline range organics (GRO), C5-C12 [1,2]<br>9408 Volatile Petroleum Hydrocarbons | ug/L | 402 | 0 | 0 |
| Gasoline Range Organics, C6-C8 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | 225 | 0 | 0 |
| Gasoline Range Organics, C6-C9 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | | 0 | 0 |
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | 402 | 324 | 81.4 |
| Gasoline range organics (GRO), C5-C10 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | 402 | 268 | 298 |
| Gasoline Range Organics, C6-C12 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | 402 | 0 | 0 |
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 | ug/L | 402 | 324 | 81.4 |
| VPH Aliphatic C5-C8 Unadjusted [1,2]<br>5305 | ug/L | 225 | 242 | 31.9 |
| VPH Aliphatic C9-C12 Unadjusted [1,2]<br>5307 | ug/L | 140 | 149 | 36.1 |
| VPH Aliphatic C9-C12 [1,2]<br>5306 | ug/L | 225 | 69.8 | 120 |
| VPH Aromatic C9-C10 [1,2]<br>5311 | ug/L | 32 | 91 | 336 |
| Total Purgeable Hydrocarbons [1,2]<br>5207 | ug/L | 420 | 410 | 127 |
| Gasoline Range Organics, C6-C12 [1,2]<br>9408 | ug/L | 402 | 0 | 0 |
| Gasoline range organics (GRO), C5-C12 [1,2]<br>9408 | ug/L | 402 | 0 | 0 |
| Gasoline Range Organics, C6-C8 [1,2]<br>9408 | ug/L | 225 | 0 | 0 |
| Gasoline Range Organics, C6-C9 [1,2]<br>9408 | ug/L | | 0 | 0 |
| VPH Aliphatic C5-C8 [1,2]<br>5304 | ug/L | 250 | 225 | 67.1 |
| Ethylbenzene [1,2]<br>4765 | ug/L | 5.21 | 5.92 | 0.67 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 | ug/L | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Naphthalene [1,2]<br>5005 | ug/L | 3.89 | 0.78 | 1.16 |
| Toluene [1,2]<br>5140 | ug/L | 30.5 | 30.1 | 2.92 |
| m+p-Xylene [1,2]<br>5240 | ug/L | 22.8 | 23.9 | 2.68 |
| o-Xylene [1,2]<br>5250 | ug/L | 10.7 | 8.68 | 1.15 |
| Xylene, total [1,2]<br>5260 | ug/L | 33.5 | 32.5 | 3.98 |
| Gasoline range organics (GRO), C5-C10 [1,2]<br>9408 | ug/L | 402 | 268 | 298 |
| Gasoline range organics (GRO), C5-C12 [1,2]<br>9408 Petroleum Hydrocarbons | ug/L | 402 | 0 | 0 |

## Metals in Soil

SPE001-30G / Lot LRAA8516

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Bismuth, Bi [1,2]<br>1023 Trace Metals - Solids | mg/Kg | 0±0 | 0 | 0 |
| Carbon, C [1,2]<br>1553 Trace Metals - Solids | mg/Kg | 220±0 | 1040 | 2470 |
| Antimony, Sb [1,2]<br>1005 Trace Metals - Solids | mg/Kg | 96±0.49 | 48 | 33.5 |
| Arsenic, As [1,2]<br>1010 Trace Metals - Solids | mg/Kg | 141±0.718 | 123 | 7.24 |
| Barium, Ba [1,2]<br>1015 Trace Metals - Solids | mg/Kg | 218±1.11 | 253 | 43.6 |
| Beryllium, Be [1,2]<br>1020 Trace Metals - Solids | mg/Kg | 205±1.05 | 192 | 16.5 |
| Boron, B [1,2]<br>1025 Trace Metals - Solids | mg/Kg | 161±0.821 | 139 | 15.2 |
| Cadmium, Cd [1,2]<br>1030 Trace Metals - Solids | mg/Kg | 227±1.16 | 224 | 13.5 |
| Calcium, Ca [1,2]<br>1035 Trace Metals - Solids | mg/Kg | 2359±12 | 3090 | 221 |
| Chromium, Cr (total) [1,2]<br>1040 Trace Metals - Solids | mg/Kg | 174±0.887 | 179 | 12.1 |
| Cobalt, Co [1,2]<br>1050 Trace Metals - Solids | mg/Kg | 67±0.342 | 60.1 | 4.83 |
| Copper, Cu [1,2]<br>1055 Trace Metals - Solids | mg/Kg | 87±0.443 | 78.9 | 6.26 |
| Iron, Fe [1,2]<br>1070 Trace Metals - Solids | mg/Kg | 3950±6.22 | 4280 | 585 |
| Lead, Pb [1,2]<br>1075 Trace Metals - Solids | mg/Kg | 156±0.794 | 145 | 14.7 |
| Lithium, Li [2]<br>1080 Trace Metals - Solids | mg/Kg | 89.2±0.455 | 94.8 | 11.2 |
| Magnesium, Mg [1,2]<br>1085 Trace Metals - Solids | mg/Kg | 3689±18.8 | 3470 | 1570 |
| Manganese, Mn [1,2]<br>1090 Trace Metals - Solids | mg/Kg | 341±1.74 | 335 | 63.1 |
| Mercury, Hg [1,2]<br>1095 Trace Metals - Solids | mg/Kg | 5.2±0.027 | 4.59 | 0.27 |
| Molybdenum, Mo [1,2]<br>1100 Trace Metals - Solids | mg/Kg | 69.3±0.354 | 57.8 | 5.73 |
| Nickel, Ni [1,2]<br>1105 Trace Metals - Solids | mg/Kg | 155±0.79 | 143 | 11.1 |

| | | | | |
|---|---|---|---|---|
| Potassium, K [1,2]<br>1125 Trace Metals - Solids | mg/Kg | 2286±11.7 | 3080 | 308 |
| Selenium, Se [1,2]<br>1140 Trace Metals - Solids | mg/Kg | 48.2±0.246 | 42.4 | 4.37 |
| Silver, Ag [1,2]<br>1150 Trace Metals - Solids | mg/Kg | 89.2±0.455 | 81.6 | 6.67 |
| Sodium, Na [1,2]<br>1155 Trace Metals - Solids | mg/Kg | 4747±24.2 | 4580 | 347 |
| Strontium, Sr [1,2]<br>1160 Trace Metals - Solids | mg/Kg | 284±1.45 | 359 | 62.1 |
| Thallium, Tl [1,2]<br>1165 Trace Metals - Solids | mg/Kg | 59.2±0.302 | 52 | 5.68 |
| Tin, Sn [1,2]<br>1175 Trace Metals - Solids | mg/Kg | 135±0.69 | 123 | 13.4 |
| Titanium, Ti [1,2]<br>1180 Trace Metals - Solids | mg/Kg | 192±0.98 | 119 | 51.4 |
| Vanadium, V [1,2]<br>1185 Trace Metals - Solids | mg/Kg | 47.7±0.243 | 72.3 | 6.87 |
| Zinc, Zn [1,2]<br>1190 Trace Metals - Solids | mg/Kg | 834±4.25 | 770 | 63.4 |
| pH [1,2]<br>1900 Miscellaneous Analytes | Units | 4.90±0.02 | 5.27 | 0.41 |
| Phosphorus as P, total [1,2]<br>1910 Trace Metals - Solids | mg/Kg | 45 | 415 | 56.8 |
| Silica as $SiO_2$ [1,2]<br>1990 Miscellaneous Analytes | mg/Kg | 3800 | 2770 | 1670 |
| Sulfur [1,2]<br>2017 Miscellaneous Analytes | mg/Kg | 102 | 82.8 | 105 |
| Aluminum, Al [1,2]<br>1000 Trace Metals - Solids | mg/Kg | 9510±13.2 | 8780 | 3920 |
| Silicon, Si [1,2]<br>1145 Trace Metals - Solids | mg/Kg | 1270±6.48 | 1110 | 652 |
| Ammonia as N [1,2]<br>1515 | mg/Kg | 425 | 0 | 0 |
| Chloride [1,2]<br>1575 | mg/Kg | 450 | 0 | 0 |
| Phosphorus as P, Total [1,2]<br>1910 Trace Metals - Solids | mg/Kg | 311.2±1.59 | 0 | 0 |
| Fluoride [1,2]<br>1730 | mg/Kg | 400 | 0 | 0 |
| pH [1,2]<br>1900 | Units | 4.90±0.02 | 5.27 | 0.41 |
| Silica as $SiO_2$ [1,2]<br>1990 | mg/Kg | 3800 | 2770 | 1670 |
| Sulfate [1,2]<br>2000 | mg/Kg | 400 | 0 | 0 |
| Sulfur [1,2]<br>2017 | mg/Kg | 102 | 82.8 | 105 |
| Total cyanide [1,2]<br>1645 | mg/Kg | 87.2 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Carbon, Total [2] 2041 | wt% | 0 | 0 | 0 |

# DIESEL IN WATER-MA - PT

PE1849-2ML / Lot LRAA8520

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| EPH Aromatic C11-C22 [2]<br>6232 Petroleum Hydrocarbons | ug/L | 525±3.62 | 377 | 279 |
| EPH Aliphatic C19-C36 [2]<br>6218 Petroleum Hydrocarbons | ug/L | 184±2.09 | 0 | 0 |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 Petroleum Hydrocarbons | ug/L | 439±4.26 | 474 | 107 |
| Naphthalene [1,2]<br>5005 Petroleum Hydrocarbons | ug/L | 24.8±0.24 | 0 | 0 |
| Acenaphthene [1,2]<br>5500 Petroleum Hydrocarbons | ug/L | 42.7±0.414 | 0 | 0 |
| Acenaphthylene [1,2]<br>5505 Petroleum Hydrocarbons | ug/L | 34.9±0.338 | 0 | 0 |
| Anthracene [1,2]<br>5555 Petroleum Hydrocarbons | ug/L | 35.6±0.346 | 0 | 0 |
| Benzo(a)anthracene [1,2]<br>5575 Petroleum Hydrocarbons | ug/L | 14.2±0.137 | 0 | 0 |
| Benzo(a)pyrene [1,2]<br>5580 Petroleum Hydrocarbons | ug/L | 17.9±0.174 | 0 | 0 |
| Benzo(b)fluoranthene [1,2]<br>5585 Petroleum Hydrocarbons | ug/L | 32.4±0.314 | 0 | 0 |
| Benzo(g,h,i)perylene [1,2]<br>5590 Petroleum Hydrocarbons | ug/L | 19.4±0.188 | 0 | 0 |
| Benzo(k)fluoranthene [1,2]<br>5600 Petroleum Hydrocarbons | ug/L | 12.0±0.116 | 0 | 0 |
| Chrysene [1,2]<br>5855 Petroleum Hydrocarbons | ug/L | 17.2±0.166 | 0 | 0 |
| Dibenzo(a,h)anthracene [1,2]<br>5895 Petroleum Hydrocarbons | ug/L | 16.3±0.158 | 0 | 0 |
| Fluoranthene [1,2]<br>6265 Petroleum Hydrocarbons | ug/L | 39.5±0.383 | 0 | 0 |
| Fluorene [1,2]<br>6270 Petroleum Hydrocarbons | ug/L | 31.9±0.31 | 0 | 0 |
| Indeno(1,2,3-cd) pyrene [1,2]<br>6315 Petroleum Hydrocarbons | ug/L | 13.0±0.126 | 0 | 0 |
| 2-Methylnaphthalene [1,2]<br>6385 Petroleum Hydrocarbons | ug/L | 31.9±0.309 | 0 | 0 |
| Phenanthrene [1,2]<br>6615 Petroleum Hydrocarbons | ug/L | 40.0±0.388 | 0 | 0 |
| Pyrene [1,2]<br>6665 Petroleum Hydrocarbons | ug/L | 19.2±0.186 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Diesel Range Organics (DRO) [1,2]<br>9369 Petroleum Hydrocarbons | ug/L | 1220±11.8 | 0 | 0 |
| Total EPH [2]<br>6241 Petroleum Hydrocarbons | ug/L | 1220±11.8 | 1420 | 19.1 |
| Unadjusted C11-C22 Aromatic Hydrocarbons [1,2]<br>6234 Petroleum Hydrocarbons - Water | ug/L | 602 | 0 | 0 |
| EPH Aromatic C11-C22 [2]<br>6232 Petroleum Hydrocarbons - Water | ug/L | 525±3.62 | 377 | 279 |
| EPH Aliphatic C19-C36 [2]<br>6218 Petroleum Hydrocarbons - Water | ug/L | 184±2.09 | 0 | 0 |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 Petroleum Hydrocarbons - Water | ug/L | 439±4.26 | 474 | 107 |
| Naphthalene [1,2]<br>5005 Petroleum Hydrocarbons - Water | ug/L | 24.8±0.24 | 0 | 0 |
| Acenaphthene [1,2]<br>5500 Petroleum Hydrocarbons - Water | ug/L | 42.7±0.414 | 0 | 0 |
| Acenaphthylene [1,2]<br>5505 Petroleum Hydrocarbons - Water | ug/L | 34.9±0.338 | 0 | 0 |
| Anthracene [1,2]<br>5555 Petroleum Hydrocarbons - Water | ug/L | 35.6±0.346 | 0 | 0 |
| Benzo(a)anthracene [1,2]<br>5575 Petroleum Hydrocarbons - Water | ug/L | 14.2±0.137 | 0 | 0 |
| Benzo(a)pyrene [1,2]<br>5580 Petroleum Hydrocarbons - Water | ug/L | 17.9±0.174 | 0 | 0 |
| Benzo(b)fluoranthene [1,2]<br>5585 Petroleum Hydrocarbons - Water | ug/L | 32.4±0.314 | 0 | 0 |
| Benzo(g,h,i)perylene [1,2]<br>5590 Petroleum Hydrocarbons - Water | ug/L | 19.4±0.188 | 0 | 0 |
| Benzo(k)fluoranthene [1,2]<br>5600 Petroleum Hydrocarbons - Water | ug/L | 12.0±0.116 | 0 | 0 |
| Chrysene [1,2]<br>5855 Petroleum Hydrocarbons - Water | ug/L | 17.2±0.166 | 0 | 0 |
| Dibenzo(a,h)anthracene [1,2]<br>5895 Petroleum Hydrocarbons - Water | ug/L | 16.3±0.158 | 0 | 0 |
| Fluoranthene [1,2]<br>6265 Petroleum Hydrocarbons - Water | ug/L | 39.5±0.383 | 0 | 0 |
| Fluorene [1,2]<br>6270 Petroleum Hydrocarbons - Water | ug/L | 31.9±0.31 | 0 | 0 |
| Indeno(1,2,3-cd) pyrene [1,2]<br>6315 Petroleum Hydrocarbons - Water | ug/L | 13.0±0.126 | 0 | 0 |
| 2-Methylnaphthalene [1,2]<br>6385 Petroleum Hydrocarbons - Water | ug/L | 31.9±0.309 | 0 | 0 |
| Phenanthrene [1,2]<br>6615 Petroleum Hydrocarbons - Water | ug/L | 40.0±0.388 | 0 | 0 |
| Pyrene [1,2]<br>6665 Petroleum Hydrocarbons - Water | ug/L | 19.2±0.186 | 0 | 0 |
| Diesel Range Organics (DRO) [1,2]<br>9369 Petroleum Hydrocarbons - Water | ug/L | 1220±11.8 | 0 | 0 |
| Total EPH [2]<br>6241 Petroleum Hydrocarbons - Water | ug/L | 1220±11.8 | 1420 | 19.1 |

## CHROMIUM VI IN SOIL - PT

SPE012-30G / Lot LRAA9500

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Chromium VI, Cr(VI) [1,2]<br>1045 Trace Metals - Solids | mg/Kg | 120±0.601 | 102 | 2.47 |

# VOAS IN SOIL - MEDIUM LEVEL - PT

SPE002H-25G / Lot LRAA9345

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Acetone [1,2]<br>4315 Medium Level Volatile Ketone/Ethers | ug/Kg | 18900±71.3 | 20200 | 5220 |
| Acetonitrile [1,2]<br>4320 Volatiles - Medium Level - Solids | ug/Kg | 12498±121 | 0 | 0 |
| Acrolein (Propenal) [1,2]<br>4325 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| T-amylmethylether (TAME) [1,2]<br>4370 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Benzene [1,2]<br>4375 Medium Level Volatile Aromatics | ug/Kg | 5303±51.4 | 5330 | 361 |
| Bromobenzene [1,2]<br>4385 Volatiles - Medium Level - Solids | ug/Kg | 3569±34.6 | 3570 | 337 |
| Bromochloromethane [1,2]<br>4390 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Bromodichloromethane [1,2]<br>4395 Medium Level Volatile Halocarbons | ug/Kg | 8379±81.3 | 8740 | 154 |
| Bromoform [1,2]<br>4400 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| 2-Butanone (Methyl ethyl ketone, MEK) [1,2]<br>4410 Medium Level Volatile Ketone/Ethers | ug/Kg | 11558±112 | 13800 | 2370 |
| n-Butylbenzene [1,2]<br>4435 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| sec-Butylbenzene [1,2]<br>4440 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| tert-Butylbenzene [1,2]<br>4445 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Carbon disulfide [1,2]<br>4450 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Carbon tetrachloride [1,2]<br>4455 Medium Level Volatile Halocarbons | ug/Kg | 3995±38.8 | 3980 | 302 |
| Chlorobenzene [1,2]<br>4475 Medium Level Volatile Aromatics | ug/Kg | 4722±45.8 | 4920 | 219 |
| Chloroethane [1,2]<br>4485 Volatiles - Medium Level - Solids | ug/Kg | 6952±67.4 | 7600 | 945 |
| 2-Chloroethyl vinyl ether [1,2]<br>4500 Volatiles - Medium Level - Solids | ug/Kg | 13316±129 | 12700 | 462 |
| Chloroform [1,2]<br>4505 Medium Level Volatile Halocarbons | ug/Kg | 3089±30 | 3100 | 25.4 |
| 2-Chlorotoluene [1,2]<br>4535 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |

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|---|---|---|---|---|
| 4-Chlorotoluene [1,2]<br>4540 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Cyclohexane [1,2]<br>4555 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,2-Dibromo-3-chloropropane (DBCP) [1,2]<br>4570 Medium Level Volatile Halocarbons | ug/Kg | 7055±68.4 | 6820 | 653 |
| Dibromochloromethane [1,2]<br>4575 Medium Level Volatile Halocarbons | ug/Kg | 4202±40.8 | 4360 | 361 |
| 1,2-Dibromoethane (EDB, Ethylene dibromide) [1,2]<br>4585 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| Dibromomethane [1,2]<br>4595 Medium Level Volatile Halocarbons | ug/Kg | 6244±60.6 | 6430 | 398 |
| 1,2-Dichlorobenzene [1,2]<br>4610 Medium Level Volatile Aromatics | ug/Kg | 8436±81.8 | 8540 | 736 |
| 1,3-Dichlorobenzene [1,2]<br>4615 Medium Level Volatile Aromatics | ug/Kg | 2837±27.5 | 2910 | 205 |
| 1,4-Dichlorobenzene [1,2]<br>4620 Medium Level Volatile Aromatics | ug/Kg | 4188±40.6 | 4320 | 439 |
| Dichlorodifluoromethane [1,2]<br>4625 Volatiles - Medium Level - Solids | ug/Kg | 4362±42.3 | 2310 | 519 |
| 1,1-Dichloroethane [1,2]<br>4630 Medium Level Volatile Halocarbons | ug/Kg | 7279±70.6 | 7250 | 539 |
| 1,2-Dichloroethane [1,2]<br>4635 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| 1,1-Dichloroethylene [1,2]<br>4640 Medium Level Volatile Halocarbons | ug/Kg | 5522±53.6 | 5680 | 1030 |
| cis-1,2-Dichloroethylene [1,2]<br>4645 Medium Level Volatile Halocarbons | ug/Kg | 7349±71.3 | 7230 | 884 |
| 1,2-Dichloropropane [1,2]<br>4655 Medium Level Volatile Halocarbons | ug/Kg | 4475±43.4 | 4590 | 489 |
| 1,3-Dichloropropane [1,2]<br>4660 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 2,2-Dichloropropane [1,2]<br>4665 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,1-Dichloropropene [1,2]<br>4670 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| cis-1,3-Dichloropropene [1,2]<br>4680 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| trans-1,3-Dichloropropene [1,2]<br>4685 Volatiles - Medium Level - Solids | ug/Kg | 7555±73.3 | 7530 | 1320 |
| trans-1,2-Dichloroethylene [1,2]<br>4700 Medium Level Volatile Halocarbons | ug/Kg | 7919±76.8 | 8070 | 617 |
| Ethylbenzene [1,2]<br>4765 Medium Level Volatile Aromatics | ug/Kg | 3817±37 | 3840 | 329 |
| Hexachlorobutadiene [1,2]<br>4835 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Hexachloroethane [1,2]<br>4840 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 2-Hexanone [1,2]<br>4860 Medium Level Volatile Ketone/Ethers | ug/Kg | 14000±136 | 17000 | 3020 |

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|---|---|---|---|---|
| Isopropylbenzene [1,2]<br>4900 Volatiles - Medium Level - Solids | ug/Kg | 4437±43 | 4520 | 366 |
| Methyl acetate [1,2]<br>4940 Volatiles - Medium Level - Solids | ug/Kg | 5984±58 | 0 | 0 |
| Methyl bromide (Bromomethane) [1,2]<br>4950 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Methyl chloride (Chloromethane) [1,2]<br>4960 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Methylcyclohexane [1,2]<br>4965 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Methylene chloride (Dichloromethane) [1,2]<br>4975 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| 4-Methyl-2-pentanone (MIBK) [1,2]<br>4995 Medium Level Volatile Ketone/Ethers | ug/Kg | 14940±145 | 15200 | 1380 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 Medium Level Volatile Ketone/Ethers | ug/Kg | 5382±52.2 | 5420 | 580 |
| Naphthalene [1,2]<br>5005 Medium Level Volatile Aromatics | ug/Kg | 6361±61.7 | 6760 | 1230 |
| n-Propylbenzene (1-Phenylpropane) [1,2]<br>5090 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Styrene [1,2]<br>5100 Medium Level Volatile Aromatics | ug/Kg | 3802±36.9 | 4100 | 252 |
| 1,1,1,2-Tetrachloroethane [1,2]<br>5105 Medium Level Volatile Halocarbons | ug/Kg | 3638±35.3 | 3830 | 322 |
| 1,1,2,2-Tetrachloroethane [1,2]<br>5110 Medium Level Volatile Halocarbons | ug/Kg | 5155±50 | 4940 | 402 |
| Tetrachloroethylene (Perchloroethylene) [1,2]<br>5115 Medium Level Volatile Halocarbons | ug/Kg | 5095±49.2 | 5180 | 346 |
| Toluene [1,2]<br>5140 Medium Level Volatile Aromatics | ug/Kg | 5615±54.5 | 5780 | 643 |
| 1,2,3-Trichlorobenzene [1,2]<br>5150 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,2,4-Trichlorobenzene [1,2]<br>5155 Medium Level Volatile Aromatics | ug/Kg | 7400±71.8 | 7390 | 534 |
| 1,1,1-Trichloroethane [1,2]<br>5160 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| 1,1,2-Trichloroethane [1,2]<br>5165 Medium Level Volatile Halocarbons | ug/Kg | 6096±59.1 | 6240 | 609 |
| Trichloroethene (Trichloroethylene) [1,2]<br>5170 Medium Level Volatile Halocarbons | ug/Kg | 3623±35.2 | 3950 | 114 |
| Trichlorofluoromethane [1,2]<br>5175 Volatiles - Medium Level - Solids | ug/Kg | 5390±52.3 | 5130 | 610 |
| 1,2,3-Trichloropropane [1,2]<br>5180 Medium Level Volatile Halocarbons | ug/Kg | 0±0 | 0 | 0 |
| Trichlorotrifluoroethane (Freon 113) [1,2]<br>5185 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,2,4-Trimethylbenzene [1,2]<br>5210 Volatiles - Medium Level - Solids | ug/Kg | 12385±120 | 12900 | 760 |
| 1,3,5-Trimethylbenzene [1,2]<br>5215 Volatiles - Medium Level - Solids | ug/Kg | 3932±38.1 | 3960 | 378 |

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|---|---|---|---|---|
| Vinyl acetate [1,2]<br>5225 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Vinyl chloride [1,2]<br>5235 Volatiles - Medium Level - Solids | ug/Kg | 7562±73.4 | 7360 | 830 |
| m+p-Xylene [1,2]<br>5240 Volatiles - Medium Level - Solids | ug/Kg | 6890±66.8 | 7240 | 518 |
| o-Xylene [1,2]<br>5250 Volatiles - Medium Level - Solids | ug/Kg | 7876±76.4 | 8300 | 620 |
| Xylene, total [1,2]<br>5260 Medium Level Volatile Aromatics | ug/Kg | 14766±143 | 15500 | 1210 |
| Di-isopropylether (DIPE) [1,2]<br>9375 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,4-Dioxane [1,2]<br>4735 Volatiles - Medium Level - Solids | ug/Kg | 0 | 0 | 0 |
| Acetone [1,2]<br>4315 | ug/Kg | 18900±71.3 | 20200 | 5220 |
| Acetonitrile [1,2]<br>4320 | ug/Kg | 12498±121 | 0 | 0 |
| Acrolein (Propenal) [1,2]<br>4325 | ug/Kg | 0±0 | 0 | 0 |
| T-amylmethylether (TAME) [1,2]<br>4370 | ug/Kg | 0±0 | 0 | 0 |
| Benzene [1,2]<br>4375 | ug/Kg | 5303±51.4 | 5330 | 361 |
| Bromobenzene [1,2]<br>4385 | ug/Kg | 3569±34.6 | 3570 | 337 |
| Bromodichloromethane [1,2]<br>4395 | ug/Kg | 8379±81.3 | 8740 | 154 |
| Bromoform [1,2]<br>4400 | ug/Kg | 0±0 | 0 | 0 |
| 2-Butanone (Methyl ethyl ketone, MEK) [1,2]<br>4410 | ug/Kg | 11558±112 | 13800 | 2370 |
| Carbon disulfide [1,2]<br>4450 | ug/Kg | 0±0 | 0 | 0 |
| Carbon tetrachloride [1,2]<br>4455 | ug/Kg | 3995±38.8 | 3980 | 302 |
| Chlorobenzene [1,2]<br>4475 | ug/Kg | 4722±45.8 | 4920 | 219 |
| Chloroethane [1,2]<br>4485 | ug/Kg | 6952±67.4 | 7600 | 945 |
| 2-Chloroethyl vinyl ether [1,2]<br>4500 | ug/Kg | 13316±129 | 12700 | 462 |
| Chloroform [1,2]<br>4505 | ug/Kg | 3089±30 | 3100 | 25.4 |
| 1,2-Dibromo-3-chloropropane (DBCP) [1,2]<br>4570 | ug/Kg | 7055±68.4 | 6820 | 653 |
| Dibromochloromethane [1,2]<br>4575 | ug/Kg | 4202±40.8 | 4360 | 361 |
| 1,2-Dibromoethane (EDB, Ethylene dibromide) [1,2]<br>4585 | ug/Kg | 0±0 | 0 | 0 |

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|---|---|---|---|---|
| Dibromomethane [1,2]<br>4595 | ug/Kg | 6244±60.6 | 6430 | 398 |
| 1,2-Dichlorobenzene [1,2]<br>4610 | ug/Kg | 8436±81.8 | 8540 | 736 |
| 1,3-Dichlorobenzene [1,2]<br>4615 | ug/Kg | 2837±27.5 | 2910 | 205 |
| 1,4-Dichlorobenzene [1,2]<br>4620 | ug/Kg | 4188±40.6 | 4320 | 439 |
| Dichlorodifluoromethane [1,2]<br>4625 | ug/Kg | 4362±42.3 | 2310 | 519 |
| 1,1-Dichloroethane [1,2]<br>4630 | ug/Kg | 7279±70.6 | 7250 | 539 |
| 1,2-Dichloroethane [1,2]<br>4635 | ug/Kg | 0±0 | 0 | 0 |
| 1,1-Dichloroethylene [1,2]<br>4640 | ug/Kg | 5522±53.6 | 5680 | 1030 |
| cis-1,2-Dichloroethylene [1,2]<br>4645 | ug/Kg | 7349±71.3 | 7230 | 884 |
| 1,2-Dichloropropane [1,2]<br>4655 | ug/Kg | 4475±43.4 | 4590 | 489 |
| cis-1,3-Dichloropropene [1,2]<br>4680 | ug/Kg | 0±0 | 0 | 0 |
| trans-1,3-Dichloropropene [1,2]<br>4685 | ug/Kg | 7555±73.3 | 7530 | 1320 |
| trans-1,2-Dichloroethylene [1,2]<br>4700 | ug/Kg | 7919±76.8 | 8070 | 617 |
| Ethylbenzene [1,2]<br>4765 | ug/Kg | 3817±37 | 3840 | 329 |
| Hexachloroethane [1,2]<br>4840 | ug/Kg | 0±0 | 0 | 0 |
| 2-Hexanone [1,2]<br>4860 | ug/Kg | 14000±136 | 17000 | 3020 |
| Isopropylbenzene [1,2]<br>4900 | ug/Kg | 4437±43 | 4520 | 366 |
| Methyl bromide (Bromomethane) [1,2]<br>4950 | ug/Kg | 0±0 | 0 | 0 |
| Methyl chloride (Chloromethane) [1,2]<br>4960 | ug/Kg | 0±0 | 0 | 0 |
| Methylene chloride (Dichloromethane) [1,2]<br>4975 | ug/Kg | 0±0 | 0 | 0 |
| 4-Methyl-2-pentanone (MIBK) [1,2]<br>4995 | ug/Kg | 14940±145 | 15200 | 1380 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 | ug/Kg | 5382±52.2 | 5420 | 580 |
| Naphthalene [1,2]<br>5005 | ug/Kg | 6361±61.7 | 6760 | 1230 |
| Styrene [1,2]<br>5100 | ug/Kg | 3802±36.9 | 4100 | 252 |
| 1,1,1,2-Tetrachloroethane [1,2]<br>5105 | ug/Kg | 3638±35.3 | 3830 | 322 |

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|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane [1,2]<br>5110 | ug/Kg | 5155±50 | 4940 | 402 |
| Tetrachloroethylene (Perchloroethylene) [1,2]<br>5115 | ug/Kg | 5095±49.2 | 5180 | 346 |
| Toluene [1,2]<br>5140 | ug/Kg | 5615±54.5 | 5780 | 643 |
| 1,2,4-Trichlorobenzene [1,2]<br>5155 | ug/Kg | 7400±71.8 | 7390 | 534 |
| 1,1,1-Trichloroethane [1,2]<br>5160 | ug/Kg | 0±0 | 0 | 0 |
| 1,1,2-Trichloroethane [1,2]<br>5165 | ug/Kg | 6096±59.1 | 6240 | 609 |
| Trichloroethene (Trichloroethylene) [1,2]<br>5170 | ug/Kg | 3623±35.2 | 3950 | 114 |
| Trichlorofluoromethane [1,2]<br>5175 | ug/Kg | 5390±52.3 | 5130 | 610 |
| 1,2,3-Trichloropropane [1,2]<br>5180 | ug/Kg | 0±0 | 0 | 0 |
| 1,2,4-Trimethylbenzene [1,2]<br>5210 | ug/Kg | 12385±120 | 12900 | 760 |
| 1,3,5-Trimethylbenzene [1,2]<br>5215 | ug/Kg | 3932±38.1 | 3960 | 378 |
| Vinyl acetate [1,2]<br>5225 | ug/Kg | 0±0 | 0 | 0 |
| Vinyl chloride [1,2]<br>5235 | ug/Kg | 7562±73.4 | 7360 | 830 |
| m+p-Xylene [1,2]<br>5240 | ug/Kg | 6890±66.8 | 7240 | 518 |
| o-Xylene [1,2]<br>5250 | ug/Kg | 7876±76.4 | 8300 | 620 |
| Xylene, total [1,2]<br>5260 | ug/Kg | 14766±143 | 15500 | 1210 |
| Di-isopropylether (DIPE) [1,2]<br>9375 | ug/Kg | 0±0 | 0 | 0 |
| Acetone [1,2]<br>4315 Volatiles - Medium Level - Solids | ug/Kg | 18900±71.3 | 20200 | 5220 |
| Benzene [1,2]<br>4375 Volatiles - Medium Level - Solids | ug/Kg | 5303±51.4 | 5330 | 361 |
| Bromodichloromethane [1,2]<br>4395 Volatiles - Medium Level - Solids | ug/Kg | 8379±81.3 | 8740 | 154 |
| Bromoform [1,2]<br>4400 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 2-Butanone (Methyl ethyl ketone, MEK) [1,2]<br>4410 Volatiles - Medium Level - Solids | ug/Kg | 11558±112 | 13800 | 2370 |
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|---|---|---|---|---|
| 1,2-Dibromo-3-chloropropane (DBCP) [1,2]<br>4570 Volatiles - Medium Level - Solids | ug/Kg | 7055±68.4 | 6820 | 653 |
| Dibromochloromethane [1,2]<br>4575 Volatiles - Medium Level - Solids | ug/Kg | 4202±40.8 | 4360 | 361 |
| 1,2-Dibromoethane (EDB, Ethylene dibromide) [1,2]<br>4585 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Dibromomethane [1,2]<br>4595 Volatiles - Medium Level - Solids | ug/Kg | 6244±60.6 | 6430 | 398 |
| 1,2-Dichlorobenzene [1,2]<br>4610 Volatiles - Medium Level - Solids | ug/Kg | 8436±81.8 | 8540 | 736 |
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| 1,4-Dichlorobenzene [1,2]<br>4620 Volatiles - Medium Level - Solids | ug/Kg | 4188±40.6 | 4320 | 439 |
| 1,1-Dichloroethane [1,2]<br>4630 Volatiles - Medium Level - Solids | ug/Kg | 7279±70.6 | 7250 | 539 |
| 1,2-Dichloroethane [1,2]<br>4635 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,1-Dichloroethylene [1,2]<br>4640 Volatiles - Medium Level - Solids | ug/Kg | 5522±53.6 | 5680 | 1030 |
| cis-1,2-Dichloroethylene [1,2]<br>4645 Volatiles - Medium Level - Solids | ug/Kg | 7349±71.3 | 7230 | 884 |
| 1,2-Dichloropropane [1,2]<br>4655 Volatiles - Medium Level - Solids | ug/Kg | 4475±43.4 | 4590 | 489 |
| trans-1,2-Dichloroethylene [1,2]<br>4700 Volatiles - Medium Level - Solids | ug/Kg | 7919±76.8 | 8070 | 617 |
| Ethylbenzene [1,2]<br>4765 Volatiles - Medium Level - Solids | ug/Kg | 3817±37 | 3840 | 329 |
| 2-Hexanone [1,2]<br>4860 Volatiles - Medium Level - Solids | ug/Kg | 14000±136 | 17000 | 3020 |
| Methylene chloride (Dichloromethane) [1,2]<br>4975 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 4-Methyl-2-pentanone (MIBK) [1,2]<br>4995 Volatiles - Medium Level - Solids | ug/Kg | 14940±145 | 15200 | 1380 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 Volatiles - Medium Level - Solids | ug/Kg | 5382±52.2 | 5420 | 580 |
| Naphthalene [1,2]<br>5005 Volatiles - Medium Level - Solids | ug/Kg | 6361±61.7 | 6760 | 1230 |
| Styrene [1,2]<br>5100 Volatiles - Medium Level - Solids | ug/Kg | 3802±36.9 | 4100 | 252 |
| 1,1,1,2-Tetrachloroethane [1,2]<br>5105 Volatiles - Medium Level - Solids | ug/Kg | 3638±35.3 | 3830 | 322 |
| 1,1,2,2-Tetrachloroethane [1,2]<br>5110 Volatiles - Medium Level - Solids | ug/Kg | 5155±50 | 4940 | 402 |
| Tetrachloroethylene (Perchloroethylene) [1,2]<br>5115 Volatiles - Medium Level - Solids | ug/Kg | 5095±49.2 | 5180 | 346 |
| Toluene [1,2]<br>5140 Volatiles - Medium Level - Solids | ug/Kg | 5615±54.5 | 5780 | 643 |
| 1,2,4-Trichlorobenzene [1,2]<br>5155 Volatiles - Medium Level - Solids | ug/Kg | 7400±71.8 | 7390 | 534 |

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|---|---|---|---|---|
| 1,1,1-Trichloroethane [1,2]<br>5160 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| 1,1,2-Trichloroethane [1,2]<br>5165 Volatiles - Medium Level - Solids | ug/Kg | 6096±59.1 | 6240 | 609 |
| Trichloroethene (Trichloroethylene) [1,2]<br>5170 Volatiles - Medium Level - Solids | ug/Kg | 3623±35.2 | 3950 | 114 |
| 1,2,3-Trichloropropane [1,2]<br>5180 Volatiles - Medium Level - Solids | ug/Kg | 0±0 | 0 | 0 |
| Xylene, total [1,2]<br>5260 Volatiles - Medium Level - Solids | ug/Kg | 14766±143 | 15500 | 1210 |

# GASOLINE IN SOIL - PT

SPE008-30G / Lot LRAA9305

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Gasoline Range Organics, C6-C10 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | 547.26±5.31 | 498 | 157 |
| Benzene [1,2]<br>4375 Petroleum Hydrocarbons - Soil | mg/Kg | 13.2 | 7.85 | 0.27 |
| VPH Aliphatic C5-C8 Unadjusted [1,2]<br>5305 Petroleum Hydrocarbons - Soil | mg/Kg | 428±4.15 | 296 | 40 |
| VPH Aliphatic C5-C8 [1,2]<br>5304 Petroleum Hydrocarbons - Soil | mg/Kg | 290±2.81 | 200 | 54.3 |
| Ethylbenzene [1,2]<br>4765 Petroleum Hydrocarbons - Soil | mg/Kg | 9.09 | 12.3 | 0.75 |
| Methyl tert-butyl ether (MTBE) [1,2]<br>5000 Petroleum Hydrocarbons - Soil | mg/Kg | 0±0 | 0 | 0 |
| Naphthalene [1,2]<br>5005 Petroleum Hydrocarbons - Soil | mg/Kg | 3.10 | 0.95 | 0.17 |
| Toluene [1,2]<br>5140 Petroleum Hydrocarbons - Soil | mg/Kg | 43.3 | 73.8 | 2.07 |
| VPH Aliphatic C9-C12 Unadjusted [1,2]<br>5307 Petroleum Hydrocarbons - Soil | mg/Kg | 205±1.99 | 245 | 92.4 |
| VPH Aliphatic C9-C12 [1,2]<br>5306 Petroleum Hydrocarbons - Soil | mg/Kg | 85.1 | 122 | 48.4 |
| m+p-Xylene [1,2]<br>5240 Petroleum Hydrocarbons - Soil | mg/Kg | 36.8 | 49.2 | 1.97 |
| o-Xylene [1,2]<br>5250 Petroleum Hydrocarbons - Soil | mg/Kg | 13.6 | 19 | 0.52 |
| Xylene, total [1,2]<br>5260 Petroleum Hydrocarbons - Soil | mg/Kg | 50.9 | 67.4 | 1.07 |
| C10-C12 Aliphatic Hydrocarbons [2]<br>9397 Petroleum Hydrocarbons - Soil | mg/Kg | 150 | 0 | 0 |
| C10-C12 Aromatics Hydrocarbons [2]<br>9398 Petroleum Hydrocarbons - Soil | mg/Kg | 15 | 0 | 0 |
| C12-C13 Aromatic Hydrocarbons [2]<br>9400 Petroleum Hydrocarbons - Soil | mg/Kg | 0 | 0 | 0 |
| VPH Aliphatic C5-C6 [1,2]<br>5303 Petroleum Hydrocarbons - Soil | mg/Kg | 48 | 0 | 0 |
| VPH Aliphatic >C6-C8 [1,2]<br>35301 Petroleum Hydrocarbons - Soil | mg/L | 120 | 0 | 0 |
| VPH Aliphatic >C8-C10 [1,2]<br>5302 Petroleum Hydrocarbons - Soil | mg/Kg | 132 | 0 | 0 |
| VPH Aromatic >C8-C10 [1,2]<br>5310 Petroleum Hydrocarbons - Soil | m/Kg | | 0 | 0 |
| VPH Aromatic C9-C10 [1,2]<br>5311 Petroleum Hydrocarbons - Soil | mg/Kg | 78.3 | 70.6 | 19 |

| | | | | |
|---|---|---|---|---|
| Gasoline range organics (GRO), C5-C10 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | 504±4.89 | 0 | 0 |
| Total VPH [1,2]<br>9409 Petroleum Hydrocarbons - Soil | mg/Kg | 500 | 0 | 0 |
| Total Purgeable Hydrocarbons [1,2]<br>5207 Petroleum Hydrocarbons - Soil | mg/Kg | 689±6.68 | 516 | 90.7 |
| Gasoline Range Organics, C6-C12 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | 746±7.24 | 0 | 0 |
| Gasoline range organics (GRO), C4-C12 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | 689±6.68 | 0 | 0 |
| Gasoline Range Organics (GRO) [1,2]<br>9408 Volatile Petroleum Hydrocarbons | mg/kg | 689±6.68 | 603 | 190 |
| Gasoline Range Organics, C6-C12 [1,2]<br>9408 GRO/BTEX in Soil | mg/Kg | 746±7.24 | 0 | 0 |
| Gasoline Range Organics (GRO) [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/kg | 689±6.68 | 603 | 190 |
| Gasoline Range Organics, C6-C8 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | 120 | 0 | 0 |
| Gasoline Range Organics, C6-C9 [1,2]<br>9408 Petroleum Hydrocarbons - Soil | mg/Kg | | 0 | 0 |

# ANIONS IN SOIL - PT

SPE013-30G / Lot LRAA8535

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Bromide [1,2]<br>1540 Minerals | mg/Kg | 53.0±0.27 | 49.7 | 3.97 |
| Chloride [1,2]<br>1575 Minerals | mg/Kg | 760±3.88 | 766 | 87.2 |
| Fluoride [1,2]<br>1730 Minerals | mg/Kg | 407±2.08 | 189 | 96 |
| Nitrate as N [1,2]<br>1810 Minerals | mg/Kg | 142±0.72 | 132 | 16.6 |
| Nitrate+nitrite as N [1,2]<br>1820 Miscellaneous Analytes | mg/Kg | 142±0.72 | 128 | 16.6 |
| Nitrite as N [1,2]<br>1840 Miscellaneous Analytes | mg/Kg | 0.00±0.00 | 0 | 0 |
| Orthophosphate as P [1,2]<br>1870 Miscellaneous Analytes | mg/Kg | 185±0.94 | 71.9 | 39.9 |
| Sulfate [1,2]<br>2000 Minerals | mg/Kg | 204±1.04 | 215 | 33.6 |
| Bromide [1,2]<br>1540 Miscellaneous Analytes | mg/Kg | 53.0±0.27 | 49.7 | 3.97 |
| Chloride [1,2]<br>1575 Miscellaneous Analytes | mg/Kg | 760±3.88 | 766 | 87.2 |
| Fluoride [1,2]<br>1730 Miscellaneous Analytes | mg/Kg | 407±2.08 | 189 | 96 |
| Nitrate as N [1,2]<br>1810 Miscellaneous Analytes | mg/Kg | 142±0.72 | 132 | 16.6 |
| Sulfate [1,2]<br>2000 Miscellaneous Analytes | mg/Kg | 204±1.04 | 215 | 33.6 |

# DIESEL IN SOIL BY MA METHODS - PT

SPE007MA-40G / Lot LRAA9569

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Unadjusted C11-C22 Aromatic Hydrocarbons [1,2]<br>6234 Petroleum Hydrocarbons - Soil | mg/kg | 440 | 0 | 0 |
| EPH Aromatic C11-C22 [2]<br>6232 PAH | mg/kg | 590 | 403 | 176 |
| EPH Aliphatic C19-C36 [2]<br>6218 Petroleum Hydrocarbons - Soil | mg/kg | 200 | 133 | 48.6 |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 PAH | mg/kg | 852 | 502 | 297 |
| Naphthalene [1,2]<br>5005 PAH | mg/kg | 3.03±0.0294 | 0 | 0 |
| Acenaphthene [1,2]<br>5500 PAH | mg/kg | 5.05±0.049 | 0 | 0 |
| Acenaphthylene [1,2]<br>5505 PAH | mg/kg | 4.39±0.0426 | 0 | 0 |
| Anthracene [1,2]<br>5555 PAH | mg/kg | 0.661±0.0064 | 0 | 0 |
| Benzo(a)anthracene [1,2]<br>5575 PAH | mg/kg | 1.10±0.0152 | 0 | 0 |
| Benzo(a)pyrene [1,2]<br>5580 PAH | mg/kg | 3.47±0.0337 | 0 | 0 |
| Benzo(b)fluoranthene [1,2]<br>5585 PAH | mg/kg | 6.54±0.0634 | 0 | 0 |
| Benzo(g,h,i)perylene [1,2]<br>5590 PAH | mg/kg | 0.991±0.0096 | 0 | 0 |
| Benzo(k)fluoranthene [1,2]<br>5600 PAH | mg/kg | 0.622±0.006 | 0 | 0 |
| Chrysene [1,2]<br>5855 PAH | mg/kg | 1.79±0.0173 | 0 | 0 |
| Dibenzo(a,h)anthracene [1,2]<br>5895 PAH | mg/kg | 4.59±0.0445 | 0 | 0 |
| Fluoranthene [1,2]<br>6265 PAH | mg/kg | 6.19±0.06 | 0 | 0 |
| Fluorene [1,2]<br>6270 PAH | mg/kg | 3.44±0.0334 | 0 | 0 |
| Indeno(1,2,3-cd) pyrene [1,2]<br>6315 PAH | mg/kg | 0.800±0.0078 | 0 | 0 |
| 2-Methylnaphthalene [1,2]<br>6385 PAH | mg/kg | 8.49 | 0 | 0 |
| Phenanthrene [1,2]<br>6615 PAH | mg/kg | 4.55±0.0274 | 0 | 0 |
| Pyrene [1,2]<br>6665 PAH | mg/kg | 9.08±0.0881 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Diesel Range Organics (DRO) [1,2]<br>9369 Petroleum Hydrocarbons - Soil | mg/Kg | 2670±25.9 | 0 | 0 |
| Total EPH [2]<br>6241 Petroleum Hydrocarbons - Soil | mg/kg | 2670 | 0 | 0 |
| EPH Aromatic C11-C22 [2]<br>6232 Petroleum Hydrocarbons - Soil | mg/kg | 590 | 403 | 176 |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 Petroleum Hydrocarbons - Soil | mg/kg | 852 | 502 | 297 |
| Unadjusted C11-C22 Aromatic Hydrocarbons [1,2]<br>6234 | mg/kg | 440 | 0 | 0 |
| EPH Aromatic C11-C22 [2]<br>6232 | mg/kg | 590 | 403 | 176 |
| EPH Aliphatic C19-C36 [2]<br>6218 | mg/kg | 200 | 133 | 48.6 |
| C9-C18 Aliphatic Hydrocarbons [2]<br>6222 | mg/kg | 852 | 502 | 297 |
| Naphthalene [1,2]<br>5005 | mg/kg | 3.03±0.0294 | 0 | 0 |
| Acenaphthene [1,2]<br>5500 | mg/kg | 5.05±0.049 | 0 | 0 |
| Acenaphthylene [1,2]<br>5505 | mg/kg | 4.39±0.0426 | 0 | 0 |
| Anthracene [1,2]<br>5555 | mg/kg | 0.661±0.0064 | 0 | 0 |
| Benzo(a)anthracene [1,2]<br>5575 | mg/kg | 1.10±0.0152 | 0 | 0 |
| Benzo(a)pyrene [1,2]<br>5580 | mg/kg | 3.47±0.0337 | 0 | 0 |
| Benzo(b)fluoranthene [1,2]<br>5585 | mg/kg | 6.54±0.0634 | 0 | 0 |
| Benzo(g,h,i)perylene [1,2]<br>5590 | mg/kg | 0.991±0.0096 | 0 | 0 |
| Benzo(k)fluoranthene [1,2]<br>5600 | mg/kg | 0.622±0.006 | 0 | 0 |
| Chrysene [1,2]<br>5855 | mg/kg | 1.79±0.0173 | 0 | 0 |
| Dibenzo(a,h)anthracene [1,2]<br>5895 | mg/kg | 4.59±0.0445 | 0 | 0 |
| Fluoranthene [1,2]<br>6265 | mg/kg | 6.19±0.06 | 0 | 0 |
| Fluorene [1,2]<br>6270 | mg/kg | 3.44±0.0334 | 0 | 0 |
| Indeno(1,2,3-cd) pyrene [1,2]<br>6315 | mg/kg | 0.800±0.0078 | 0 | 0 |
| 2-Methylnaphthalene [1,2]<br>6385 | mg/kg | 8.49 | 0 | 0 |
| Phenanthrene [1,2]<br>6615 | mg/kg | 4.55±0.0274 | 0 | 0 |
| Pyrene [1,2]<br>6665 | mg/kg | 9.08±0.0881 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Diesel Range Organics (DRO) [1,2]<br>9369 | mg/Kg | 2670±25.9 | 0 | 0 |
| Total EPH [2]<br>6241 | mg/kg | 2670 | 0 | 0 |

## NUTRIENTS IN SOIL - PT

SPE014-100G / Lot LRAA9330

| Analytes | Units | Gravimetric Value | Study Mean | Study Std. Dev. |
|---|---|---|---|---|
| Ammonia as N [1,2]<br>1515 Nutrients | mg/Kg | 2590±13.2 | 2310 | 222 |
| Chemical oxygen demand (COD) [1,2]<br>1565 Miscellaneous Analytes | mg/kg | 10240±42 | 15000 | 2370 |
| Kjeldahl nitrogen, total (TKN) [1,2]<br>1795 Nutrients | mg/Kg | 949±4.84 | 3370 | 1090 |
| Phosphorus as P, total [1,2]<br>1910 Nutrients | mg/Kg | 1020±5.22 | 1010 | 248 |
| Total organic carbon (TOC) [1,2]<br>2040 Miscellaneous Analytes | mg/kg | 5280±16.7 | 0 | 0 |
| Loss on Ignition (550ºC) [1,2]<br>41970 Miscellaneous Analytes | Wt% | 5.03±0.0255 | 4.82 | 2.93 |
| Soil Type [2]<br>2999 Miscellaneous Analytes | | 3 | 0 | 0 |
| Chemical oxygen demand (COD) [1,2]<br>1565 Nutrients | mg/kg | 10240±42 | 15000 | 2370 |
| Total organic carbon (TOC) [1,2]<br>2040 Nutrients | mg/kg | 5280±16.7 | 0 | 0 |
| Loss on Ignition (550ºC) [1,2]<br>41970 | Wt% | 5.03±0.0255 | 4.82 | 2.93 |
| Soil Type [2]<br>2999 | | 3 | 0 | 0 |
| Loss on Ignition (440ºC) [2]<br>31970 Nutrients | Wt% | 3.1 | 0 | 0 |

## Definitions and Interpretation of Statistical Analysis:

**Assigned Value:** Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a given purpose. See ISO/IEC 17043 for additional information. In general the assigned value is the value used to assess proficiency and may or may not be the made to value (gravimetric value).

**Accept. Window:** The range of values that constitute acceptable performance for a laboratory participating in this PT study.

**Z:** A Z-Score tells how a single data point compares to normal data. A Z-Score says not only whether a point was above or below average, but how unusual the measurement is. Generally, a method result with a Z-Score less than |2| is considered to be in control, a Z-Score between |2| and |3| is considered 'Questionable', but still within control and a Z greater than |3| is considered not acceptable and the method is out of control. For WS studies, a z-score greater than |2| is unacceptable. Calculated as **Z = (Reported Value - Assigned Value) / Proficiency Std. Dev.**

**Proficiency Std. Dev.:** Standard deviation calculated based on **Evaluation Criteria.**

**Study Mean:** Statistical study mean calculated using a robust statisitical model (RTC employs the 'Biweight Program'). Robust statistical techniques to minimize the influence that extreme results can have on estimates of the mean and standard deviation. NOTE - These techniques assign less weight to extreme results, rather than eliminate them from a data set.

**Study Std. Dev.:** Standard deviation calculated from study data using robust statisicals (Biweight).

**Gravimetric Value:** The 'prepared to' value, determined by gravimetric means. The uncertainty associated to this value is standard uncertainty and based on RTC's gravimetric tolerances.

## Evaluation Criteria:

**1 - Regression Equation** - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d.

**2 - Study Robust Mean and c,d regression** - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation calculated from robust study mean and variables c & d as proficiency value = robust mean and proficiency standard deviation = c * proficiency value + d.

**3 - Fixed Limits** - Acceptance windows based on span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * percentage.

**4 - Adjustable Fixed Limits** - Acceptance windows base on a span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * lowPercentage where gravimetric < break and gravimetric +/-

gravimetric * highPercentage where gravimetric >= break.

**5 - Study Statistics** - Acceptance windows based on a number of standard deviations span from the study mean as study mean +/- (deviations * standard deviation).

**6 - Log Transform Statistics** - Acceptance windows based on lognormal distributed data. Acceptance windows = mean(lognormal) +/- span * standard deviation(lognormal).

**7 - Reserved**

**8 - Regression Equation 2SD** - Acceptance windows based on EPA equation of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d. Generally reserved for drinking water studies.

**Proficiency Test Item Preparation, Homogeneity and Stability Assessment** - RTC uses proprietary and published methods for the manufacture, homogeneity and stability testing of proficiency test items. RTC's proficiency test materials meet requirements of ISO Guide 34. For more information contact RTC. Additionally RTC complies with TNI Volume 3 'General Requirements for Environmental Proficiency Test Providers', EL-V3-2009, 2009 for all TNI Fields of Proficiency Testing analytes.

**Metrological Traceability** - All preparations are made using balances calibrated annually traceable to NIST standards. Where appropriate analytical measurements are traceable through an unbroken chain to NIST standards, or a Certified Reference Material manufactured under ISO Guide 34 in conjunction with ISO/IEC 17025.

**Statistical Analysis** - RTC uses robust statistics to calculate study means and standard deviations - Reference - Kafadar, K, A Biweight Approach to the One-Sample Problem, Journal of the American Statistical Association, Vol. 77, No. 378, June, 1982, pp. 416-424.

**Additional Information** - Go to www.rt-corp.com/reporting for additional information on summary statistics for specific methods, advice on the interpretation of the statistical analysis, and additional comments/recommendations. If you failed an analyte it may be required to perform a corrective action and/or retest. RTC recommends that you contact your accreditation body for specific instruction.

Program analyte accrediting footnotes

[1] NELAC Compliant, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert. AP-1469

[2] ISO 17043 Accredited, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert AP-1469

Authorizing Officer: 

Date: 4/8/2016

Patrick Brumfield, ASQ CQA

QA Manager

**This section of the report is for informational purposes only. If you are unsure about specific accreditation requirements, please contact your state coordinator.**

# UNACCEPTABLE ANALYTES

RTC Lab Code: **49670108**

**SPE013-30G**

**ANIONS IN SOIL - PT**

| Analytes | MethodNumber | MethodName |
|---|---|---|
| Bromide [1,2] | 10053200 | EPA 300.0 2.1 (1993) |
| Chloride [1,2] | 10053200 | EPA 300.0 2.1 (1993) |
| Fluoride [1,2] | 10053200 | EPA 300.0 2.1 (1993) |
| Nitrate as N [1,2] | 10053200 | EPA 300.0 2.1 (1993) |
| Nitrate+nitrite as N [1,2] | 10053200 | EPA 300.0 2.1 (1993) |
| Sulfate [1,2] | 10053200 | EPA 300.0 2.1 (1993) |

**SPE007MA-40G**

**DIESEL IN SOIL BY MA METHODS - PT**

| Analytes | MethodNumber | MethodName |
|---|---|---|
| Naphthalene [1,2] | 90017202 | MADEP EPH 1.1 (2004) |
| Benzo(k)fluoranthene [1,2] | 90017202 | MADEP EPH 1.1 (2004) |
| Indeno(1,2,3-cd) pyrene [1,2] | 90017202 | MADEP EPH 1.1 (2004) |

**SPE014-100G**

**NUTRIENTS IN SOIL - PT**

| Analytes | MethodNumber | MethodName |
|---|---|---|
| Kjeldahl nitrogen, total (TKN) [1,2] | 20119817 | SM 4500-Norg C 22nd ED (2011) |

## PASS RATE

| | |
|---|---|
| Number of Reported Results: | 153 |
| Number of Passing Results: | 143 |
| Pass Rate: | 93.46% |