400801



# Groundwater Monitoring Report – November 2016

**CSXF Bramlette Road Site**

**SCDHEC Site ID Number 00801**

**Greenville, South Carolina**

**S&ME Project No. 1264-08-105**

S&ME

Prepared for:

**Duke Energy**

**Mail Code NCRH15**

**410 South Wilmington Street**

**Raleigh, North Carolina 27601**

Prepared by:

**S&ME, Inc.**

**301 Zima Park Road**

**Spartanburg, South Carolina 29301**

**February 20, 2017**

24a

February 20, 2017

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Attention: Mr. Lucas Berresford
berresjl@dhec.sc.gov

Reference: **Groundwater Monitoring Report – November 2016**
**CSXF Bramlette Road Site**
**SCDHEC Site ID Number 00801**
Greenville, South Carolina
S&ME Project Number 1264-08-105

Dear Mr. Berresford:

S&ME, Inc. is pleased to submit this *Groundwater Monitoring Report- November 2016* for the referenced site. We trust this information is responsive to your needs at this time. Please contact us if you have questions or need additional information.

Sincerely,

**S&ME, Inc.**


John Whitehead, P.G.
Senior Geologist
jwhitehead@smeinc.com

cc: Kevin Boland, CSX
Daniel Schmitt, CSX
Matt Adkins, CSX
Andrew Shull, Duke Energy
Chris Gilbert, Duke Energy

*T:\Projects\2008\ENV\6408105 Bramlette Road MGP Site\2016\november sampling event\november 2016 groundwater monitoring report.docx*

1. Site Name: CSXF Bramlette Road Site

2. Site ID#: SCDHEC Site ID# 00801

3. Site Location: 400 South Bramlette Road, Greenville, South Carolina

4. Contact: Andrew Shull, P.E.
Duke Energy
Mail Code NCRH15
410 South Wilmington Street
Raleigh, North Carolina 27601
Phone: 919.546.2104
Email: andrew.shull@duke-energy.com

5. Site Owner: CSX Transportation

6. Previous Samplings: September 1996; June 1999; November 2000; May and November 2001 through 2016

7. Current Sampling: November 14, 15, and 16, 2016

8. Sampled By: S&ME, Inc.
301 Zima Park Road
Spartanburg, South Carolina 29301

9. Wells Sampled: MW-1, MW-2, MW-3, MW-5, MW-6A, MW-15, MW-16, MW-18, MW-19, MW-20, MW-22, MW-23, MW-24, MW-25R.

10. Analytical Laboratory: Duke Energy Analytical Laboratory
(SC DHEC Laboratory ID #99005)
13339 Hagers Ferry Road
Huntersville, North Carolina 28078-7929
McGuire Nuclear Complex - MG03A2

Subcontract to:

Test America
(SC Certification Number 84009)
2960 Foster Creighton Drive
Nashville, Tennessee 37204

11. Analyses: Groundwater
Volatile Organic Compounds (VOCs) by EPA SW-846 Method 8260B
Alkalinity by SM2320B
Iron (ferrous) by Method SM 3500F+2D
Manganese by EPA SW-846 Method 6010C
Nitrate and Sulfate by EPA SW-846 Method 300.0

12. Tables: Table 1 – Groundwater Sampling Field Data – November 2016
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Table 3 – Monitored Natural Attenuation (MNA) Parameters – November 2016

13. Figures: Figure 1 – Groundwater Flow Map – November 2016
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Figure 6 – Selected Cross-Section B – B'
Figure 7 – Selected Cross-Section C – C'
Figure 8 – Selected Cross-Section D – D'
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Chart 1 – Temporal Groundwater Elevations
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Chart 3 – Temporal Naphthalene Concentrations in Shallow Wells

14. Appendices: Appendix III – Groundwater Level Measurements
Sample Collection Summary Sheets
Appendix IV – Analytical Laboratory Report(s)

15. Discussion:

- Remedial excavation activities at the former Bramlette Road MGP Site concluded in December 2002.

- Two wells remain on the former MGP property parcel: MW-15 and MW-16. Fourteen wells are located on the CSX/Vaughn Landfill property parcel: MW-1, MW-2, MW-3, MW-3D, MW-5, MW-6A, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, MW-24, and MW-25R.

- The monitoring wells were sampled on November 14, 15 and 16, 2016 by using a combination of low flow pumps, disposable bailers, and dedicated bailers. The samples were transported to the analytical laboratory via an overnight courier and received by the laboratory on November 15, 16, and 17, 2016.

- Chart 1 portrays that groundwater elevations at the CSX/Vaughn Landfill and Bramlette Road MGP Site have historically been generally consistent over time with seasonal fluctuations. Water levels at each well dropped since the last sampling event conducted in May 2016. Since May 2016, the Upstate of South Carolina has experienced drought conditions with below normal rainfall amounts.

- Groundwater potentiometric contours (across the shallow and mid-depth saprolite wells) are provided on Figure 1. During the November 2016 sampling event, groundwater flow within the saprolite followed previously observed patterns. That is from the north/northeast toward the south/southwest and the Reedy River and consistent with historical observations.

- As background, benzene and naphthalene (as indicator parameters) have been historically detected in shallow wells MW-1, MW-2, MW-3, MW-6A, and MW-21; and mid-depth saprolite wells MW-3D, MW-19, and MW-20 over the period-of-record monitoring covered in this report (since May 1999).

- Table 1 summarizes the groundwater field data for the monitoring event; Table 2 summarizes historical VOC detections since 2008. VOCs were not detected in wells MW-3, MW-5, MW-16, MW-18, MW-22, MW-23, MW-24, and MW-25R. S&ME did not collect a sample from MW-21 due to the presence of approximately 0.01-foot of a non-aqueous substance in the well. Additionally, S&ME did not purge monitoring well MW-6A prior to sample collection.

- Concentration maps were constructed for benzene (Figure 2) and naphthalene (Figure 3). Please note that no iso-concentration contour lines were drawn. In addition and as requested by SCDHEC, cross section maps with benzene and naphthalene concentrations are included as Figures 5 through 9.

- Temporal benzene and naphthalene concentrations in the above noted shallow wells are provided in Chart 2 and Chart 3, respectively. Prior to the November 2013 sampling event, naphthalene concentrations were based on Method 8270 results. Beginning with the November 2013 sampling event, the naphthalene concentrations are from the Method 8260 results.

- Table 3 summarizes the monitored natural attenuation (MNA) parameters and values during the November 2016 monitoring. Test America did not analyze the sample from MW-6A for alkalinity.

16. Actions

- The Voluntary Cleanup Contract (VCC) between Duke Energy and the South Carolina Department of Health and Environmental Control (SC DHEC) has been finalized.

- An access agreement between CSX and Duke Energy has been finalized.

- Duke Energy will conduct work in accordance with the VCC and as required by the SCDHEC.

# Appendices

# Appendix I – Tables

**Table 1 – Groundwater Sampling Field Data – November 2016**

**Table 2 – Summary of 8260 Compounds**

**Table 3 - Monitored Natural Attenuation (MNA) Parameters – November 2016**

**TABLE 1**

**GROUNDWATER SAMPLING FIELD DATA - NOVEMBER 2016**

**CSXF BRAMLETTE ROAD SITE**

**GREENVILLE, SOUTH CAROLINA**

**S&ME Project 1264-08-105**

| Well | Date Sampled | Measured Well Depth (feet) | Depth to Water (feet) | Odor (subjective) | Well Volume (gallons) | Purge Method | Evacuated Volume (gallons) | Complete Evacuation (yes/no) | Temperature ( C) | Specific Conductance (umho/cm) | pH (su) | Turbidity (NTU) | Dissolved Oxygen (mg/L) | ORP (mV) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | November 15, 2016 | 16.92 | 8.80 | strong | 1.4 | Low Flow Pump | 2.5 | no | 19.10 | 404 | 6.11 | 0.65 | 0.81 | -99.1 |
| MW-2 | November 16, 2016 | 18.20 | 13.97 | none | 0.7 | Low Flow Pump | 1.0 | no | 19.90 | 511 | 6.30 | 8.20 | 5.36 | -69.2 |
| MW-3 | November 15, 2016 | 16.68 | 11.82 | strong | 0.9 | Low Flow Pump | | no | 17.91 | 1026 | 6.32 | 1.88 | 0.58 | -124.1 |
| MW-3D | November 15, 2016 | 23.42 | 12.72 | strong | 1.9 | Low Flow Pump | 1.5 | no | 16.77 | 272 | 5.98 | 1.48 | 0.70 | -77.8 |
| MW-5 | November 14, 2016 | 15.92 | 12.46 | moderate | 0.6 | Low Flow Pump | 0.5 | no | 21.71 | 138 | 5.36 | 3.57 | 0.49 | -33.7 |
| MW-6A | November 14, 2016 | 17.45 | 12.70 | strong | 0.8 | Disposable Bailer | 0.0 | no | sample collected from initial bailer | | | | | |
| MW-15 | November 16, 2015 | 57.51 | 11.50 | none | 8.1 | Disposable Bailer | 7.5 | yes | 17.24 | 141 | 7.11 | 58.4 | 3.9 | 49.4 |
| MW-16 | November 16, 2016 | 17.92 | 11.29 | none | 1.2 | Low Flow Pump | 1.0 | no | 19.04 | 1017 | 6.19 | 5.48 | 0.97 | -66.9 |
| MW-18 | November 14, 2016 | 27.28 | 15.38 | moderate | 2.1 | Low Flow Pump | 1.0 | no | 18.27 | 287 | 5.63 | 0.75 | 0.67 | -46.1 |
| MW-19 | November 15, 2016 | 21.86 | 8.88 | strong | 2.3 | Low Flow Pump | 2.5 | no | 19.05 | 408 | 6.11 | 1.62 | 0.83 | -101.4 |
| MW-20 | November 15, 2016 | 28.04 | 12.98 | strong | 2.6 | Low Flow Pump | | no | 17.19 | 253 | 5.95 | 1.50 | 0.80 | -66.1 |
| MW-21 | November 14, 2016 | 20.58 | 15.64 | strong | 0.9 | Low Flow Pump | 0.0 | no | well not sampled | | | | | |
| MW-22 | November 14, 2016 | 35.36 | 12.51 | none | 4.0 | Low Flow Pump | 1.0 | no | 19.49 | 192 | 5.42 | 7.63 | 1.67 | 144.8 |
| MW-23 | November 14, 2016 | 45.36 | 5.66 | none | 7.6 | Dedicated Bailer | 7.5 | yes | 16.84 | 181 | 5.96 | 240 | 6.54 | 25.3 |
| MW-24 | November 14, 2016 | 10.30 | 7.43 | none | 0.5 | Dedicated Bailer | | yes | 19.09 | 211 | 5.89 | 236 | 3.15 | 25.2 |
| MW-25R | November 16, 2016 | 15.90 | 4.07 | none | 2.1 | Low Flow Pump | 1.3 | no | 23.18 | 170 | 6.28 | 77.8 | 0.60 | -53.7 |

**NOTES:**

1. Depths measured relative to top of well casing.
2. C = degress Celcius
3. su = standard units
4. umho/cm = micromhos per centimeter
5. NTU = Nephelometric Turbidity Unit
6. mg/L = milligrams per liter
7. mV = milliVolts

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 05/30/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | **56.4** | **21.9** | **44.6** | <1 | <1 | **42.6** | **7.42** | **1650** | <1 | **2.23** | **3.58** | <1 | **34.9** | **67.7** |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | **52.4** | **22.2** | **45** | <1 | <1 | **49.5** | **8.9** | **1980** | **2.9** | **2.72** | **3.33** | <1 | **27.3** | **78.3** |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | **53.8** | **22** | **20.6** | <1 | <1 | **39.8** | **8.87** | **2310** | <1 | **2.3** | **3.36** | <1 | **10.5** | **63.8** |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | **53.4** | **22.3** | **41.8** | <1 | <1 | **40.4** | **8.47** | **2500** | <1 | **2.08** | **3.14** | <1 | **14.6** | **67.4** |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | **53.8** | **22.1** | **43.1** | <1 | <1 | **48.5** | **9.04** | **14.8** | <1 | **2.47** | **3.34** | <1 | **24.1** | **77.7** |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | **52.8** | **21.9** | **15.3** | <1 | <1 | **35.3** | **7.03** | **1810** | **3.23** | **2.01** | **3.27** | <1 | **11.4** | **60.6** |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/12/2014 | **40.6** | **24.9** | **27.7** | <20 | <20 | **33** | <20 | **1690** | <20 | <20 | <20 | <20 | <20 | <40 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | **29.1** | **18.2** | **52.8** | <10 | <10 | **24.1** | <20 | **1650** | <10 | <10 | <10 | <10 | **15.5** | **40.2** |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2016 | **28.9** | **31.8** | **52.3** | <10 | <10 | **27.2** | <10 | **1500** | <10 | <10 | <10 | <10 | **22.0** | **44.1** |
| | | | | | | | | | | | | | | | |
| MW-2 | 05/30/2008 | **17.9** | **3.74** | **456** | <1 | <1 | **143** | **5.54** | **1290** | **143** | **1.63** | **1.1** | <1 | <1 | **32.9** |
| | 11/20/2008 | **37** | **7.54** | **539** | <1 | <1 | **131** | **7.43** | **4810** | <1 | **2.83** | **1** | <1 | **1.34** | **43.2** |
| | 05/15/2009 | **2.57** | <1 | **45.3** | <1 | <1 | **8.75** | <1 | **123** | <1 | <1 | <1 | <1 | <1 | **3.13** |
| | 11/19/2009 | <1 | <1 | **9.43** | <1 | <1 | <1 | <1 | **14.1** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | **1.29** | <1 | **26.3** | <1 | <1 | **4.71** | <1 | **77.5** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2010 | **22.4** | **5.86** | **445** | <1 | <1 | **97.1** | **7.7** | **1270** | <1 | **2.44** | <1 | <1 | <1 | **31.4** |
| | 5/18/2011 | **6.33** | **1.24** | **84.9** | <1 | <1 | **12.4** | **1.05** | **374** | <1 | <1 | <1 | <1 | <1 | **5.71** |
| | 11/17/2011 | **32.4** | **6.93** | **570** | <1 | <1 | **103** | **8.27** | **2050** | <1 | **2.65** | <1 | <1 | <1 | **42.8** |
| | 5/18/2012 | **11.6** | <5 | **207** | <5 | <5 | **18.2** | <5 | **681** | <5 | <5 | <5 | <5 | <5 | <15 |
| | 11/15/2012 | **20.9** | **3.76** | **3.1** | <1 | <1 | **41.5** | **6.28** | **8.51** | <1 | **2** | <1 | <1 | <1 | **32.9** |
| | 5/15/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2013 | **8.43** | **3.39** | **305** | <1 | <1 | **32.5** | **4.33** | **1290** | <1 | **1.25** | <1 | <1 | <1 | **22** |
| | 5/14/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/12/2014 | <1 | <1 | **2.11** | <1 | <1 | <1 | <1 | **6.29** | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | **2.98** | **8.01** | **306** | <1 | <1 | **28.3** | **5.14** | **493** | <1 | **1.57** | <1 | <1 | <1 | **19.3** |
| | 11/16/2016 | **1.4** | **5.93** | **333** | <1 | <1 | **23.2** | **2.46** | **258** | <1 | <1 | <1 | <1 | <1 | **14.4** |
| | | | | | | | | | | | | | | | |
| MW-3 | 05/30/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | **2.28** | <1 | <1 | <1 | <1 | <1 | <1 | **137** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | **14.7** | **4.59** | **48.4** | <1 | <1 | **28.9** | **2.08** | **1560** | <1 | <1 | **1.76** | <1 | **7.23** | **24.5** |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | **4.62** | **1.51** | **1.65** | <1 | <1 | **2.33** | | 148 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | **2.54** | <1 | <1 | <1 | <1 | **1.38** | | **78.1** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | **19.6** | **5.92** | **69.2** | <1 | <1 | **45.8** | **2.25** | **952** | <1 | <1 | **1.25** | <1 | <1 | **22.4** |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2013 | **4.04** | **1.4** | **1.47** | <1 | <1 | **1.34** | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2014 | **4.74** | **1.80** | **1.61** | <1 | <1 | **1.38** | <1 | **14.5** | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | **9.97** | **4.35** | **77.6** | <1 | <1 | **34.9** | **1.27** | **94.6** | <1 | <1 | <1 | <1 | **6.06** | **21.7** |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3D | 05/30/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | **108** | **37** | **740** | <1 | <1 | **515** | **17.5** | **8040** | **3.21** | **3.45** | **17** | <1 | **60.8** | **393** |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | **106** | **35.8** | **714** | <1 | <1 | **472** | **12.6** | **8220** | **6.49** | **3.09** | **18.1** | <1 | **64.3** | **334** |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | **104** | **35.3** | **624** | <1 | <1 | **504** | **17.7** | **9580** | <1 | **3.37** | **19.4** | <1 | **44.2** | **367** |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | **105** | **35.1** | **644** | <1 | <1 | **564** | **19.3** | **7610** | <1 | **3.64** | **15.4** | <1 | **45.7** | na |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | **103** | **33.2** | **574** | <1 | <1 | **523** | **15.4** | **12200** | <1 | **2.99** | **16.7** | <1 | **45.7** | **382** |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | **83.8** | **27.6** | **524** | <1 | <1 | **465** | **14.2** | **6440** | <1 | **2.23** | **16.3** | <1 | **37.6** | **342** |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2014 | **73.0** | **25.5** | **469** | <1 | <1 | **475** | **11.6** | **6760** | <1 | **2.21** | **27.8** | <1 | **26.4** | **336** |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | **93.6** | **34.4** | **415** | <1 | <1 | **530** | **14.5** | **13500** | <1 | **2.31** | **20.1** | <1 | **28.1** | **403** |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2016 | **63.8** | **127** | **296** | <10 | <10 | **331** | <10 | **4710** | <10 | <10 | **10.6** | <10 | **19.6** | **259** |
| | | | | | | | | | | | | | | | |
| MW-5 | 05/30/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **52.2** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | 1.68 | <3 |
| | | | | | | | | | | | | | | | |
| MW-6A | 05/29/2008 | **9.31** | **3.13** | **2.44** | <1 | <1 | **7.97** | <1 | **607** | <1 | <1 | <1 | **1.31** | **7.42** | **23.2** |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **22.3** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | **3.72** | **1.05** | **3.18** | <1 | <1 | **3.8** | <1 | **147** | <1 | <1 | <1 | <1 | **3.99** | **9.72** |
| | 11/18/2009 | **2.04** | <1 | **3.28** | <1 | <1 | **2.09** | <1 | **50.4** | <1 | <1 | <1 | <1 | **2.1** | **6.38** |
| | 05/12/2010 | **3.36** | <1 | **8.22** | <1 | <1 | **4.74** | <1 | **94.1** | <1 | <1 | <1 | <1 | **3.43** | **9.2** |
| | 11/17/2010 | **4.57** | **1.53** | **13.9** | <1 | <1 | **6.23** | <1 | **245** | <1 | <1 | <1 | <1 | **13.8** | **18.1** |
| | 5/18/2011 | **3.66** | <1 | **11.7** | <1 | <1 | **6.62** | <1 | **183** | <1 | <1 | <1 | <1 | **8.86** | **13.7** |
| | 11/17/2011 | <1 | <1 | **1.78** | <1 | <1 | **1.16** | <1 | **39.4** | <1 | <1 | <1 | <1 | **1.7** | <3 |
| | 5/18/2012 | **1.54** | <1 | **3.65** | <1 | <1 | **2.73** | <1 | **57.6** | <1 | <1 | <1 | <1 | **2.14** | **4.99** |
| | 11/14/2012 | **1.84** | <1 | **7.74** | <1 | <1 | **3.31** | <1 | **103** | <1 | <1 | <1 | <1 | **4.43** | **8.6** |
| | 5/15/2013 | **5.64** | **1.11** | **20.7** | <1 | <1 | **8.03** | <1 | **180** | <1 | <1 | <1 | <1 | **5.1** | **16.2** |
| | 11/13/2013 | **4.9** | **1.67** | **12.2** | <1 | <1 | **5.78** | <1 | **96.8** | <1 | <1 | <1 | <1 | **7.67** | **19.4** |
| | 5/14/2014 | **7.7** | **2.7** | **26.5** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **4.2** | **20.4** |
| | 11/11/2014 | **17.1** | **5.28** | **39.8** | <1 | <1 | **17.2** | **1.39** | **97.3** | <1 | <1 | <1 | <1 | **38.1** | **60.6** |
| | 5/13/2015 | **5.77** | <1 | **20.1** | <1 | <1 | **8.22** | <1 | **94.8** | <1 | <1 | <1 | <1 | **3.65** | **18.9** |
| | 11/10/2015 | **7.69** | **3.93** | **9.13** | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | **18.1** |
| | 5/25/2016 | **11.9** | **8.09** | **12.7** | <1 | <1 | **7.78** | <1 | <5 | <1 | <1 | <1 | <1 | **15.4** | **35.5** |
| | 11/14/2016 | **94.8** | **76.7** | **303** | <1 | <1 | **19.7** | **2.90** | **3810** | **1.10** | <1 | **2.85** | <1 | **346** | **354** |

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-15 | 05/29/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | <1 | <1 | <1 | <1 | **1.94** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2009 | <1 | <1 | <1 | <1 | **2.56** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | <1 | <1 | <1 | <1 | **2.17** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | <1 | <1 | <1 | <1 | **2.78** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | <1 | <1 | <1 | <1 | **1.6** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/12/2013 | <1 | <1 | <1 | <1 | **1.98** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/12/2014 | <1 | <1 | <1 | <1 | **2.14** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2015 | <1 | <1 | <1 | <1 | **1.45** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/16/2016 | <1 | <1 | <1 | <1 | **1.77** | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | | | | | | | | | | | | | | | |
| MW-16 | 05/29/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/12/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/16/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | | | | | | | | | | | | | | | |
| MW-18 | 05/29/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/14/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/12/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-19 | 05/29/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | **134** | **48.6** | **143** | <1 | <1 | **164** | **19.6** | **7040** | **4.19** | **5.11** | <1 | <1 | **180** | **256** |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2009 | **112** | **43.4** | **138** | <1 | <1 | **153** | **19** | **5000** | **3.55** | **5.26** | **4.2** | <1 | **176** | **239** |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | **121** | **43** | **107** | <1 | <1 | **168** | **19** | **5410** | <1 | **4.57** | **4.97** | <1 | **166** | **243** |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2011 | **121** | **44** | **111** | <1 | <1 | **170** | **19.9** | **6150** | <1 | **4.89** | **4.02** | <1 | **165** | **255** |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2012 | **115** | **41.7** | **119** | <1 | <1 | **170** | **19.1** | **7.13** | **3.54** | **4.86** | **5.3** | <1 | **147** | **246** |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | **122** | **44.4** | **84** | <1 | <1 | **157** | **16.2** | **5150** | **4.15** | **4.69** | **4.62** | <1 | **128** | **225** |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/12/2014 | **88.6** | **40.1** | **62.2** | <20 | <20 | **63.9** | <20 | **3900** | <20 | <20 | <20 | <20 | **53.3** | **165** |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | **73.6** | **42.9** | **107** | <20 | <20 | **110** | <20 | **3850** | <20 | <20 | <20 | <20 | **84.9** | **178** |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2016 | **38.2** | **66.6** | **42.5** | <10 | <10 | **54.0** | <10 | **4970** | <10 | <10 | <10 | <10 | **34.5** | **76.6** |
| MW-20 | 05/29/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | **115** | **39.5** | **839** | <1 | <1 | **473** | **17.3** | **9120** | **4.47** | **4.01** | **3.72** | <1 | **93.9** | **395** |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | **109** | **35.8** | **838** | <1 | <1 | **450** | **12.5** | **6830** | **7.94** | **3.24** | **3.02** | <1 | **82.3** | **352** |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | **108** | **36.2** | **736** | <1 | <1 | **450** | **16.7** | **9580** | <1 | **3.75** | **4.95** | <1 | **76.9** | **361** |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | **88.4** | **29.2** | **616** | <1 | <1 | **344** | **15.3** | **6410** | **3.18** | **3.03** | **2.53** | <1 | **75.1** | **368** |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | **98** | **30.3** | **748** | <1 | <1 | **488** | **13.8** | **12700** | <1 | **3.04** | **5.29** | <1 | **70.7** | **369** |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2013 | **85.4** | **28.4** | **713** | <1 | <1 | **405** | **13.2** | **7280** | <1 | **2.41** | **4.26** | <1 | **71.4** | **369** |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2014 | **86.9** | **31.0** | **750** | <1 | <1 | **383** | **11.1** | **6130** | <1 | **2.34** | **4.23** | <1 | **68.1** | **404** |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | **92** | **33.7** | **687** | <1 | <1 | **359** | **10.7** | **12800** | **4.23** | **1.08** | **2.86** | <1 | **54.5** | **400** |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/15/2016 | **63.8** | **140** | **414** | <10 | <10 | 275 | <10 | **5040** | <10 | <10 | <10 | <10 | **41.7** | **268** |
| MW-21 | 05/29/2008 | **13** | **4.75** | **44.8** | <1 | <1 | **15.6** | **1.82** | **863** | <1 | <1 | <1 | <1 | **15.9** | **34.8** |
| | 11/19/2008 | **5.39** | **1.98** | **10.1** | <1 | <1 | **6.45** | <1 | **392** | <1 | <1 | <1 | <1 | **7.39** | **14.5** |
| | 05/15/2009 | **1.49** | <1 | **2.53** | <1 | <1 | **1.08** | <1 | **63.7** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2009 | **2.17** | <1 | **10.7** | <1 | <1 | **2.87** | <1 | **27.9** | <1 | <1 | <1 | <1 | **1.93** | **3.88** |
| | 05/12/2010 | **1.53** | <1 | **8.47** | <1 | <1 | **2.18** | <1 | **16.2** | <1 | <1 | <1 | <1 | **1.65** | **3.13** |
| | 11/17/2010 | **6.97** | **2.11** | **33** | <1 | <1 | **10.5** | <1 | **326** | <1 | <1 | <1 | <1 | **10.7** | **21.8** |
| | 5/18/2011 | **4.9** | <1 | **10.9** | <1 | <1 | **5.21** | <1 | **62.4** | <1 | <1 | <1 | <1 | **1** | **7.8** |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **62.3** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | <1 | <1 | **1.99** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2012 | **6.27** | **2.49** | **39.8** | <1 | <1 | **5.31** | <1 | **205** | <1 | <1 | <1 | <1 | **1.92** | **17.3** |
| | 5/15/2013 | <1 | <1 | **2.41** | <1 | <1 | <1 | <1 | **9.89** | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2013 | **3.28** | **1.47** | **19.4** | <1 | <1 | **3.3** | <1 | **59** | <1 | <1 | <1 | <1 | **2.97** | **9.07** |
| | 5/14/2014 | <1 | <1 | **4.7** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2014 | **9.75** | **3.37** | **82.7** | <1 | <1 | **13.8** | **1.29** | <5 | <1 | <1 | <1 | <1 | **8.36** | **25.7** |
| | 5/13/2015 | <1 | <1 | **1.51** | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/10/2015 | **2.89** | **1.09** | **25.7** | <1 | <1 | **5.07** | <1 | **6.08** | <1 | <1 | <1 | <1 | <1 | **7.92** |
| | 5/25/2016 | **2.56** | **1.73** | **21.8** | <1 | <1 | **5.07** | <1 | **54.7** | <1 | <1 | <1 | <1 | **2.00** | **9.31** |
| | 11/14/2016 | well not sampled | | | | | | | | | | | | | |

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-22 | 05/29/2008 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2009 | **1.22** | <1 | <1 | <1 | <1 | <1 | <1 | <5 | **2.89** | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/11/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/10/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns | ns |
| | 11/14/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | | | | | | | | | | | | | | | |
| MW-23 | 05/29/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | <1 | <1 | <1 | **1** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | <1 | <1 | <1 | **1.05** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2012 | <1 | <1 | <1 | **1.58** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/16/2013 | <1 | <1 | <1 | **1.65** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | <1 | <1 | <1 | **1.1** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2014 | <1 | <1 | <1 | **1.18** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/10/2015 | <1 | <1 | <1 | **1.74** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | <1 | <1 | <1 | **1.44** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | | | | | | | | | | | | | | | |
| MW-24 | 05/29/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/17/2011 | <1 | <1 | <1 | **1.35** | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/14/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/10/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |

**Table 2**
**Summary of 8260 Compounds**
**CSXF Bramlette Road Site**
**Greenville, South Carolina**
**S&ME Project Number 1264-08-105**

| Well ID | Sample Date | 1,2,4-Trimethylbenzene 95-63-6 | 1,3,5-Trimethylbenzene 108-67-8 | Benzene 71-43-2 | Chloroform 67-66-3 | cis-1,2-Dichloroethene 156-59-2 | Ethylbenzene 100-41-4 | Isopropylbenzene 98-82-8 | Naphthalene 91-20-3 | n-Butylbenzene 104-51-8 | n-Propylbenzene 103-65-1 | p-Isopropyltoluene 99-87-6 | Styrene 100-42-5 | Toluene 108-88-3 | Xylenes, Total 1330-20-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25R | 05/29/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/19/2008 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/15/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2009 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 05/12/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/18/2010 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/17/2011 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/18/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/14/2012 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/15/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/13/2013 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/14/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/12/2014 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 5/13/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <2 |
| | 11/11/2015 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 5/25/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |
| | 11/16/2016 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <5 | <1 | <1 | <1 | <1 | <1 | <3 |

Results are expressed in micrograms per liter (ug/l).
ns - not sampled during this event

**TABLE 3**

**MONITORED NATURAL ATTENUATION (MNA) PARAMETERS - NOVEMBER 2016**

**CSXF BRAMLETTE ROAD SITE**

**GREENVILLE, SOUTH CAROLINA**

**S&ME Project 1264-08-105**

| Well | Sample Date | Alkalinity | Iron (Ferrous) | Manganese | Nitrate (as N) | Sulfate |
|---|---|---|---|---|---|---|
| | | (mg/L) | (mg/L) | (mg/L) | (mg/L) | (mg/L) |
| MW-1 | November 15, 2016 | **132** | **27.5** | **2.81** | < 0.100 | < 1.0 |
| MW-2 | November 16, 2016 | **214** | **17.50** | **1.35** | < 0.100 | < 1.0 |
| MW-3 | November 15, 2016 | **364** | **28.0** | **0.749** | < 0.100 | **1.31** |
| MW-3D | November 15, 2016 | **81.6** | **11.20** | **0.147** | < 0.100 | < 1.0 |
| MW-5 | November 14, 2016 | **56.1** | **9.63** | **1.00** | < 0.100 | **2.74** |
| MW-6A | November 14, 2016 | not analyzed | **11.7** | **0.599** | < 0.100 | **9.59** |
| MW-15 | November 16, 2015 | **27.1** | **0.538** | **0.0974** | **6.48** | **1.96** |
| MW-16 | November 16, 2016 | **326** | **28.0** | **0.340** | < 0.100 | **184** |
| MW-18 | November 14, 2016 | **118** | **2.41** | **0.0203** | < 0.100 | **7.74** |
| MW-19 | November 15, 2016 | **133** | **27.70** | **2.430** | < 0.100 | <1.0 |
| MW-20 | November 15, 2016 | **70.3** | **11.9** | **0.178** | < 0.100 | <1.0 |
| MW-21 | November 14, 2016 | well not sampled | | | | |
| MW-22 | November 14, 2016 | **33.3** | < 0.100 | **0.633** | **3.38** | **5.46** |
| MW-23 | November 14, 2016 | **16.1** | < 0.100 | **0.873** | **3.93** | **18.2** |
| MW-24 | November 14, 2016 | **44.9** | **6.47** | **1.82** | **0.106** | **16.1** |
| MW-25R | November 16, 2016 | **46.6** | **4.86** | **0.118** | **0.118** | **11.2** |

**Notes:**

1. Detected concentrations in bold text.
2. mg/L = milligrams per liter
3. The ferrous iron analysis is a field parameter with a hold time of 15 minutes. The analysis is conducted at Duke Energy's request.

# Appendix II – Figures

**Figure 1 – Groundwater Flow Map – November 2016**

**Figure 2 – Benzene Concentration Map – November 2016**

**Figure 3 – Naphthalene Concentration Map – November 2016**

**Figure -4 – Cross-Section Locations**

**Figure 5 – Selected Cross-Section A – A′**

**Figure 6 – Selected Cross-Section B – B′**

**Figure 7 – Selected Cross-Section C – C′**

**Figure 8 – Selected Cross-Section D – D′**

**Figure 9 – Selected Cross-Section E – E′**

**Chart 1 – Temporal Groundwater Elevations**

**Chart 2 – Temporal Benzene Concentrations in Shallow Wells**

**Chart 3 – Temporal Naphthalene Concentrations in Shallow Wells**

NOTES

1. DRAWING INFORMATION COMPILED FROM A VARIETY OF DUKE ENERGY DRAWINGS AND PUBLICLY AVAILABLE RESOURCES.
2. WELLS GAUGED ON NOVEMBER 14, 2016.
3. GROUNDWATER POTENTIOMETRIC CONTOURS DEVELOPED WITH SURFER SOFTWARE USING GROUNDWATER ELEVATIONS IN SHALLOW AND MID-DEPTH SAPROLITE WELLS. POTENTIOMETRIC SURFACE SHOWN DOES NOT REFLECT EFFECTS OF WETLANDS OR LANDFILL ON GROUNDWATER RECHARGE OR DISCHARGE; NOR IS STAGE OF REEDY RIVER CONSIDERED.

REEDY RIVER (FLOWING SOUTH)

SWAMP RABBIT TRAIL

NORTH

NEARBY PARCELS FROM GREENVILLE COUNTY GIS

CSX OFFICE

WETLANDS & WATER

VAUGHN LANDFILL

FORMER BRAMLETTE ROAD MGP SITE

LEGACY CHARTER SCHOOL

E. BRAMLETTE ROAD

W. WASHINGTON STREET

MW18 917.09 (SHALLOW)
MW5 917.12 (SHALLOW)
MW22 917.15 (MID-DEPTH SAPROLITE)
MW24 917.82 (SHALLOW)
MW23 918.09 (DEEP SAPROLITE)
MW6A 918.62 (SHALLOW)
MW21 918.45 (SHALLOW)
MW3D 921.89 (MID-DEPTH SAPROLITE)
MW20 921.91 (MID-DEPTH SAPROLITE)
MW3 922.92 (SHALLOW)
MW19 924.68 (MID-DEPTH SAPROLITE)
MW1 924.73 (SHALLOW)
MW2 919.95 (SHALLOW)
MW25R 926.01 (SHALLOW)
MW16 926.74 (SHALLOW)
MW15 927.15 (DEEP SAPROLITE)

LEGEND

MW-23 MONITORING WELL CLASSIFICATION (SHALLOW, MID-DEPTH SAPROLITE, OR DEEP SAPROLITE MONITORED) — DEEP SAPROLITE

LEGEND

- SHALLOW GROUNDWATER MONITORING WELL
- MID-DEPTH SAPROLITE GROUNDWATER MONITORING WELL
- DEEP SAPROLITE GROUNDWATER MONITORING WELL
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

GRAPHIC SCALE (FEET)
1 INCH = 160 FT.
160 0 80 160

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| | |
|---|---|
| SCALE: AS SHOWN | DATE: November 29, 2016 |
| PROJECT NO. 1264-08-105 | DRAWN BY: J. Whitehead |
| | CHECKED BY: R. Bonds |

S&ME
301 Zima Park Road
Spartanburg, South Carolina 29301
Phone 864.574.2360
Fax 864.576.8730
WWW.SMEINC.COM

# GROUNDWATER FLOW MAP - NOVEMBER 2016
# CSXF BRAMLETTE ROAD SITE

## GREENVILLE, SOUTH CAROLINA

FIGURE NO. 1

NOTES

1. DRAWING INFORMATION COMPILED FROM A VARIETY OF DUKE ENERGY DRAWINGS AND PUBLICLY AVAILABLE RESOURCES.
2. WELLS SAMPLED NOVEMBER 14, 15, and 16, 2016.
3. CONCENTRATIONS ARE EXPRESSED IN MICROGRAMS PER LITER (ug/l).

REEDY RIVER (FLOWING SOUTH)

SWAMP RABBIT TRAIL

NORTH

NEARBY PARCELS FROM GREENVILLE COUNTY GIS

CSX OFFICE

WETLANDS & WATER

VAUGHN LANDFILL

FORMER BRAMLETTE ROAD MGP SITE

LEGACY CHARTER SCHOOL

E. BRAMLETTE ROAD

W. WASHINGTON STREET

| | | |
|---|---|---|
| MW18 | <1 | SHALLOW |
| MW5 | <1 | SHALLOW |
| MW22 | <1 | MID-DEPTH SAPROLITE |
| MW24 | <1 | SHALLOW |
| MW23 | <1 | DEEP SAPROLITE |
| MW6A | 303 | SHALLOW |
| MW21 | NS | SHALLOW |
| 296 MW3D | | MID-DEPTH SAPROLITE |
| 414 MW20 | | MID-DEPTH SAPROLITE |
| MW3 | <1 | SHALLOW |
| 333 MW2 | | SHALLOW |
| MW19 | 42.5 | MID-DEPTH SAPROLITE |
| MW1 | 52.3 | SHALLOW |
| MW25R | <1 | SHALLOW |
| MW16 | <1 | SHALLOW |
| MW15 | <1 | DEEP SAPROLITE |

LEGEND

MW-23

MONITORING WELL CLASSIFICATION (SHALLOW, MID-DEPTH SAPROLITE, OR DEEP SAPROLITE MONITORED)

LEGEND

- SHALLOW GROUNDWATER MONITORING WELL
- MID-DEPTH SAPROLITE GROUNDWATER MONITORING WELL
- DEEP SAPROLITE GROUNDWATER MONITORING WELL

NS - NOT SAMPLED DURING THIS EVENT

GRAPHIC SCALE (FEET)

1 INCH = 160 FT.

160 0 80 160

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| | |
|---|---|
| SCALE: AS SHOWN | DATE: November 29, 2016 |
| PROJECT NO. 1264-08-105 | DRAWN BY: J. Whitehead |
| | CHECKED BY: R. Bonds |

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Fax 864.576.8730
WWW.SMEINC.COM

# BENZENE CONCENTRATION MAP - NOVEMBER 2016
# CSXF BRAMLETTE ROAD SITE

## GREENVILLE, SOUTH CAROLINA

FIGURE NO. 2

NOTES

1. DRAWING INFORMATION COMPILED FROM A VARIETY OF DUKE ENERGY DRAWINGS AND PUBLICLY AVAILABLE RESOURCES.
2. WELLS SAMPLED NOVEMBER 14, 15, and 16, 2016.
3. CONCENTRATIONS ARE EXPRESSED IN MICROGRAMS PER LITER (ug/l).

REEDY RIVER (FLOWING SOUTH)

SWAMP RABBIT TRAIL

NORTH

NEARBY PARCELS FROM GREENVILLE COUNTY GIS

CSX OFFICE

WETLANDS & WATER

VAUGHN LANDFILL

FORMER BRAMLETTE ROAD MGP SITE

LEGACY CHARTER SCHOOL

E. BRAMLETTE ROAD

W. WASHINGTON STREET

| | | |
|---|---|---|
| MW18 | SHALLOW | <5 |
| MW5 | SHALLOW | <5 |
| MW22 | MID-DEPTH SAPROLITE | <5 |
| MW24 | SHALLOW | <5 |
| MW23 | DEEP SAPROLITE | <5 |
| MW6A | SHALLOW | 3810 |
| MW21 | SHALLOW | NS |
| MW3D | MID-DEPTH SAPROLITE | 4710 |
| MW20 | MID-DEPTH SAPROLITE | 5040 |
| MW3 | SHALLOW | <5 |
| MW2 | SHALLOW | 258 |
| MW19 | MID-DEPTH SAPROLITE | 4970 |
| MW1 | SHALLOW | 1500 |
| MW25R | SHALLOW | <5 |
| MW16 | SHALLOW | <5 |
| MW15 | DEEP SAPROLITE | <5 |

LEGEND

MW-23

MONITORING WELL CLASSIFICATION (SHALLOW, MID-DEPTH SAPROLITE, OR DEEP SAPROLITE MONITORED)

LEGEND

- SHALLOW GROUNDWATER MONITORING WELL
- MID-DEPTH SAPROLITE GROUNDWATER MONITORING WELL
- DEEP SAPROLITE GROUNDWATER MONITORING WELL

NS - NOT SAMPLED DURING THIS EVENT

GRAPHIC SCALE (FEET)

1 INCH = 160 FT.

160 0 80 160

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| | |
|---|---|
| SCALE: AS SHOWN | DATE: November 29, 2016 |
| PROJECT NO. 1264-08-105 | DRAWN BY: J. Whitehead |
| | CHECKED BY: R. Bonds |

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# NAPHTHALENE CONCENTRATION MAP - NOVEMBER 2016
## CSXF BRAMLETTE ROAD SITE

## GREENVILLE, SOUTH CAROLINA

FIGURE NO. 3

NOTES

1. DRAWING INFORMATION COMPILED FROM A VARIETY OF DUKE ENERGY DRAWINGS AND PUBLICLY AVAILABLE RESOURCES.

REEDY RIVER (FLOWING SOUTH)

SWAMP RABBIT TRAIL

NORTH

NEARBY PARCELS FROM GREENVILLE COUNTY GIS

CSX OFFICE

WETLANDS & WATER

VAUGHN LANDFILL

FORMER BRAMLETTE ROAD MGP SITE

LEGACY CHARTER SCHOOL

E. BRAMLETTE ROAD

W. WASHINGTON STREET

A A'

B B'

C C'

D D'

E E'

MW1 SHALLOW

MW2 SHALLOW

MW3 SHALLOW

MW3D MID-DEPTH SAPROLITE

MW5 SHALLOW

MW6A SHALLOW

MW15 DEEP SAPROLITE

MW16 SHALLOW

MW18 SHALLOW

MW19 MID-DEPTH SAPROLITE

MW20 MID-DEPTH SAPROLITE

MW21 SHALLOW

MW22 MID-DEPTH SAPROLITE

MW23 DEEP SAPROLITE

MW24 SHALLOW

MW25R SHALLOW

LEGEND

MW-23 MONITORING WELL CLASSIFICATION (SHALLOW, MID-DEPTH SAPROLITE, OR DEEP SAPROLITE MONITORED)

LEGEND

- SHALLOW GROUNDWATER MONITORING WELL
- MID-DEPTH SAPROLITE GROUNDWATER MONITORING WELL
- DEEP SAPROLITE GROUNDWATER MONITORING WELL

GRAPHIC SCALE (FEET)

1 INCH = 160 FT.

160 0 80 160

c:\projects\2008\env\6408105 bramlette road mgp site\2016 november sampling event\6408105 gw report figures (november 2016).dwg

| | |
|---|---|
| SCALE: AS SHOWN | DATE: November 29, 2016 |
| PROJECT NO. 1264-08-105 | DRAWN BY: J. Whitehead |
| | CHECKED BY: R. Bonds |

S&ME
301 Zima Park Road
Spartanburg, South Carolina 29301
Phone 864.574.2360
Fax 864.576.8730
WWW.SMEINC.COM

# CROSS SECTION LOCATIONS
# CSXF BRAMLETTE ROAD SITE

## GREENVILLE, SOUTH CAROLINA

FIGURE NO. 4

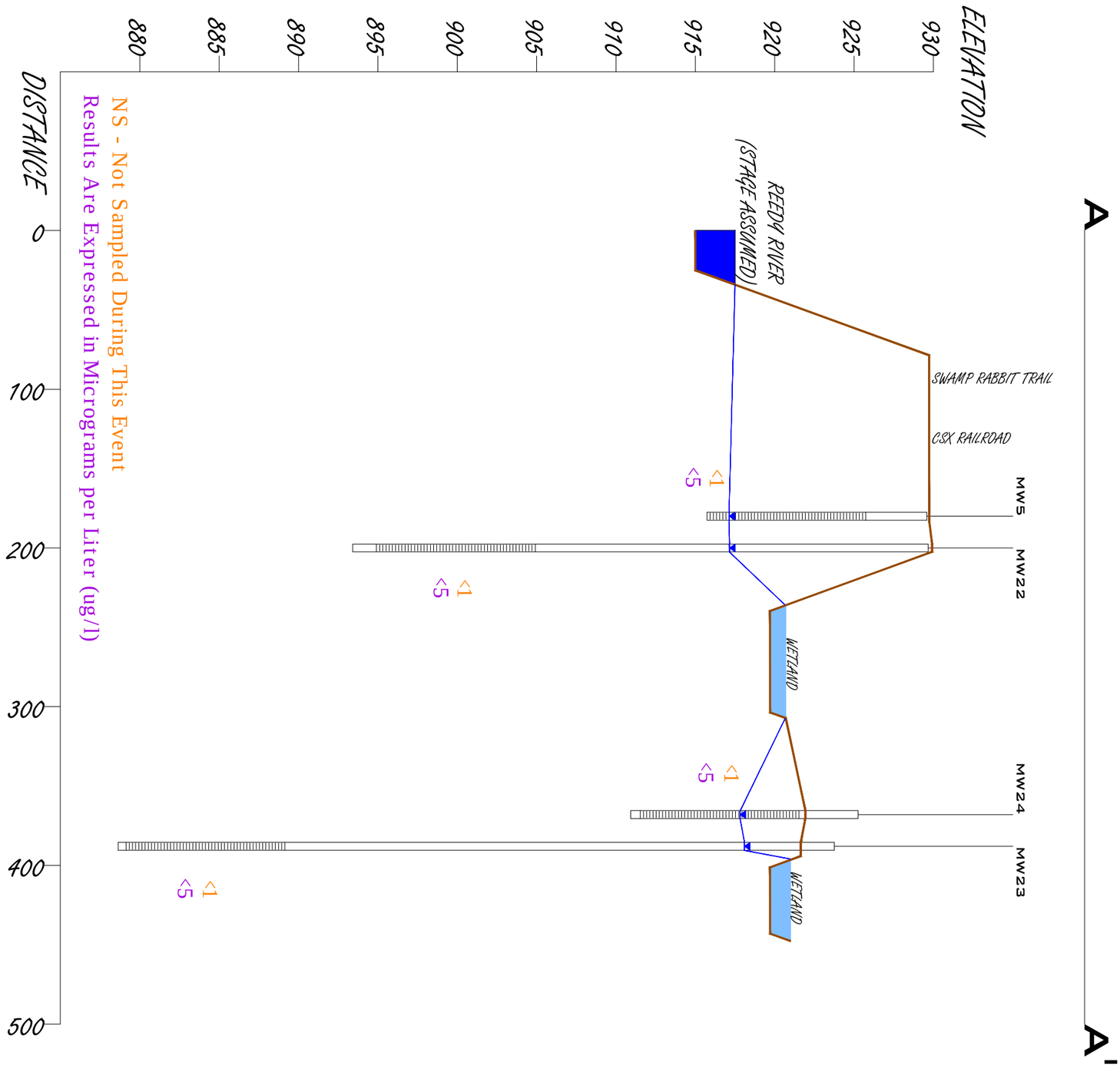



FIGURE 5 - SELECTED CROSS-SECTION A - A'; CSXF BRAMLETTE ROAD SITE; SCALE AS SHOWN BENZENE CONCENTRATIONS (ORANGE) & NAPHTHALENE CONCENTRATIONS (PURPLE) FROM NOVEMBER 2016. GROUND SURFACE, LANDFILL, REEDY RIVER, & WETLAND LOCATIONS AND TOPOGRAPHY ARE HIGHLY CONCEPTUALIZED.

B B'

ELEVATION

935
930
925
920
915
910
905
900

SWAMP RABBIT TRAIL
CSX RAILROAD
MW18
MW6A
MW21
LANDFILL
WETLAND
REEDY RIVER
(STAGE ASSUMED)
LANDFILL DEBRIS
LANDFILL DEBRIS
CLAY W/ COAL TAR
FINE SANDY SILT
SILTY FINE TO COARSE SAND
WEATHERED ROCK

NS
303
3810
NS
<1
<5

NS - Not Sampled During This Event
Results Are Expressed in Micrograms per Liter (ug/l)

DISTANCE
0
100
200
300
400
500

FIGURE 6 - SELECTED CROSS-SECTION B - B'; CSXF BRAMLETTE ROAD SITE; SCALE AS SHOWN BENZENE CONCENTRATIONS (ORANGE) & NAPHTHALENE CONCENTRATIONS (PURPLE) FROM NOVEMBER 2016. GROUND SURFACE, LANDFILL, REEDY RIVER, & WETLAND LOCATIONS AND TOPOGRAPHY ARE HIGHLY CONCEPTUALIZED.

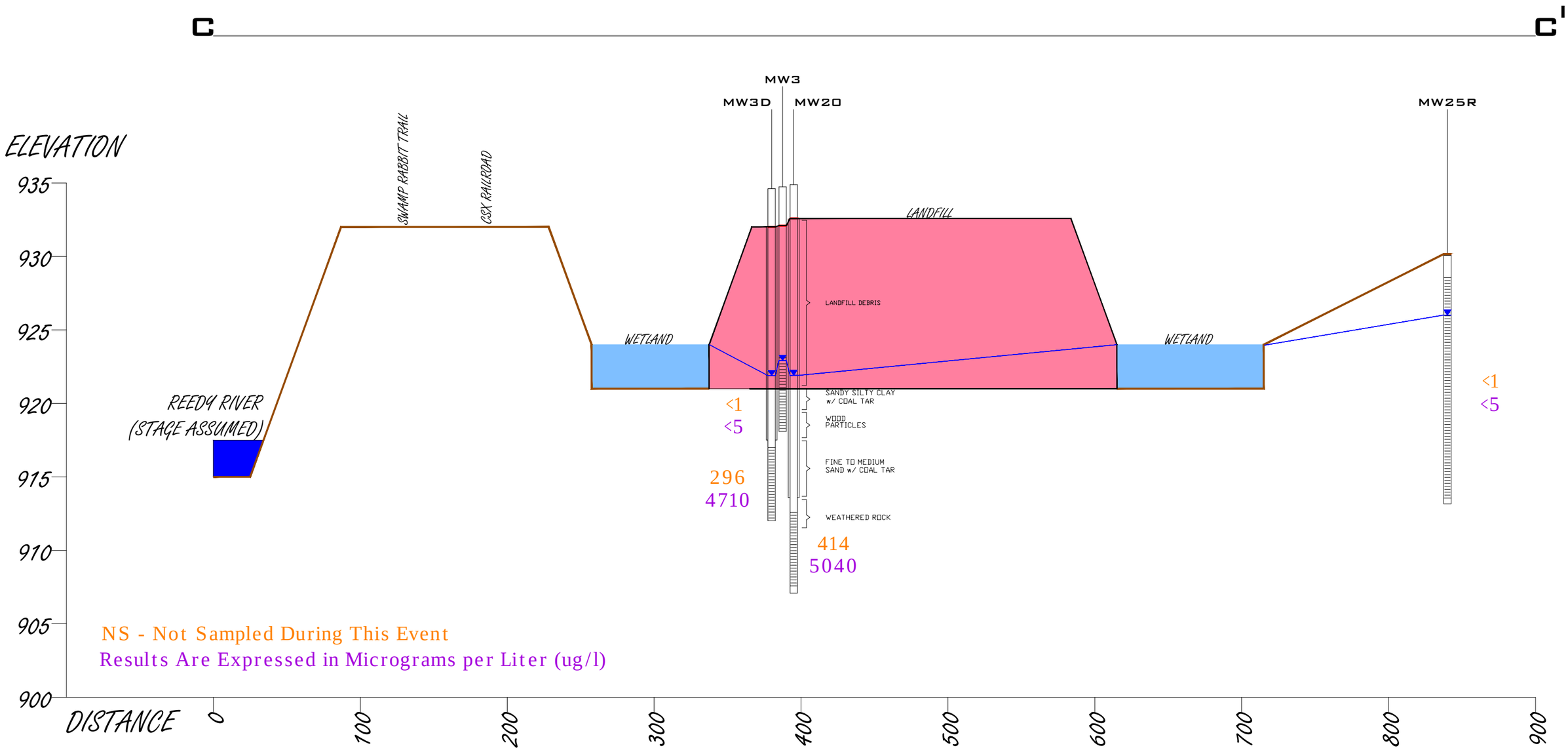



FIGURE 7 - SELECTED CROSS-SECTION C - C'; CSXF BRAMLETTE ROAD SITE; SCALE AS SHOWN BENZENE CONCENTRATIONS (ORANGE) & NAPHTHALENE CONCENTRATIONS (PURPLE) FROM NOVEMBER 2016. GROUND SURFACE, LANDFILL, REEDY RIVER, & WETLAND LOCATIONS AND TOPOGRAPHY ARE HIGHLY CONCEPTUALIZED.

D D'

ELEVATION

940
935
930
925
920
915
910
905
900
895
890
885
880
875

MW2 MW19 MW1 MW16 MW15

SWAMP RABBIT TRAIL
CSX RAILROAD
WETLAND
LANDFILL
LANDFILL DEBRIS
SANDY CLAYEY SILT w/ COAL TAR
SOFT SANDY CLAYEY SILT STRONG ODOR
SOFT SANDY CLAYEY SILT
FINE TO MEDIUM SAND w/ COAL TAR
REEDY RIVER (STAGE ASSUMED)

333
258

52.3
1500

42.5
4970

<1
<5

<1
<5

DISTANCE 0 100 200 300 400 500 600 700 800 900 1000 1100

FIGURE 8 - SELECTED CROSS-SECTION D -D'; CSXF BRAMLETTE ROAD SITE; SCALE AS SHOWN
BENZENE CONCENTRATIONS (ORANGE) & NAPHTHALENE CONCENTRATIONS (PURPLE) FROM NOVEMBER 2016. GROUND SURFACE, LANDFILL, REEDY RIVER, & WETLAND LOCATIONS AND TOPOGRAPHY ARE HIGHLY CONCEPTUALIZED.

NS - Not Sampled During This Event
Results Are Expressed in Micrograms per Liter (ug/l)

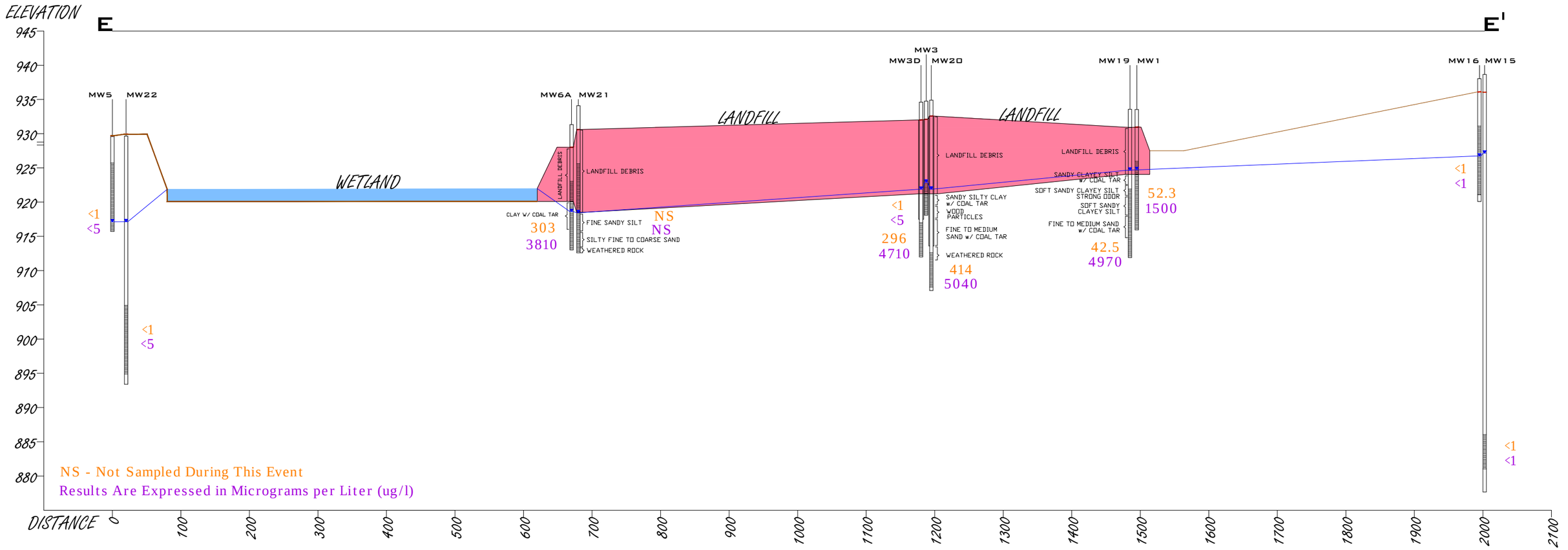



FIGURE 9 - SELECTED CROSS-SECTION E -E'; CSXF BRAMLETTE ROAD SITE; SCALE AS SHOWN
BENZENE CONCENTRATIONS (ORANGE) & NAPHTHALENE CONCENTRATIONS (PURPLE) FROM NOVEMBER 2016.
GROUND SURFACE, LANDFILL, REEDY RIVER, & WETLAND LOCATIONS AND TOPOGRAPHY
ARE HIGHLY CONCEPTUALIZED.

**Chart 1**
**Temporal Groundwater Elevations**
**CSXF Bramlette Road Site**

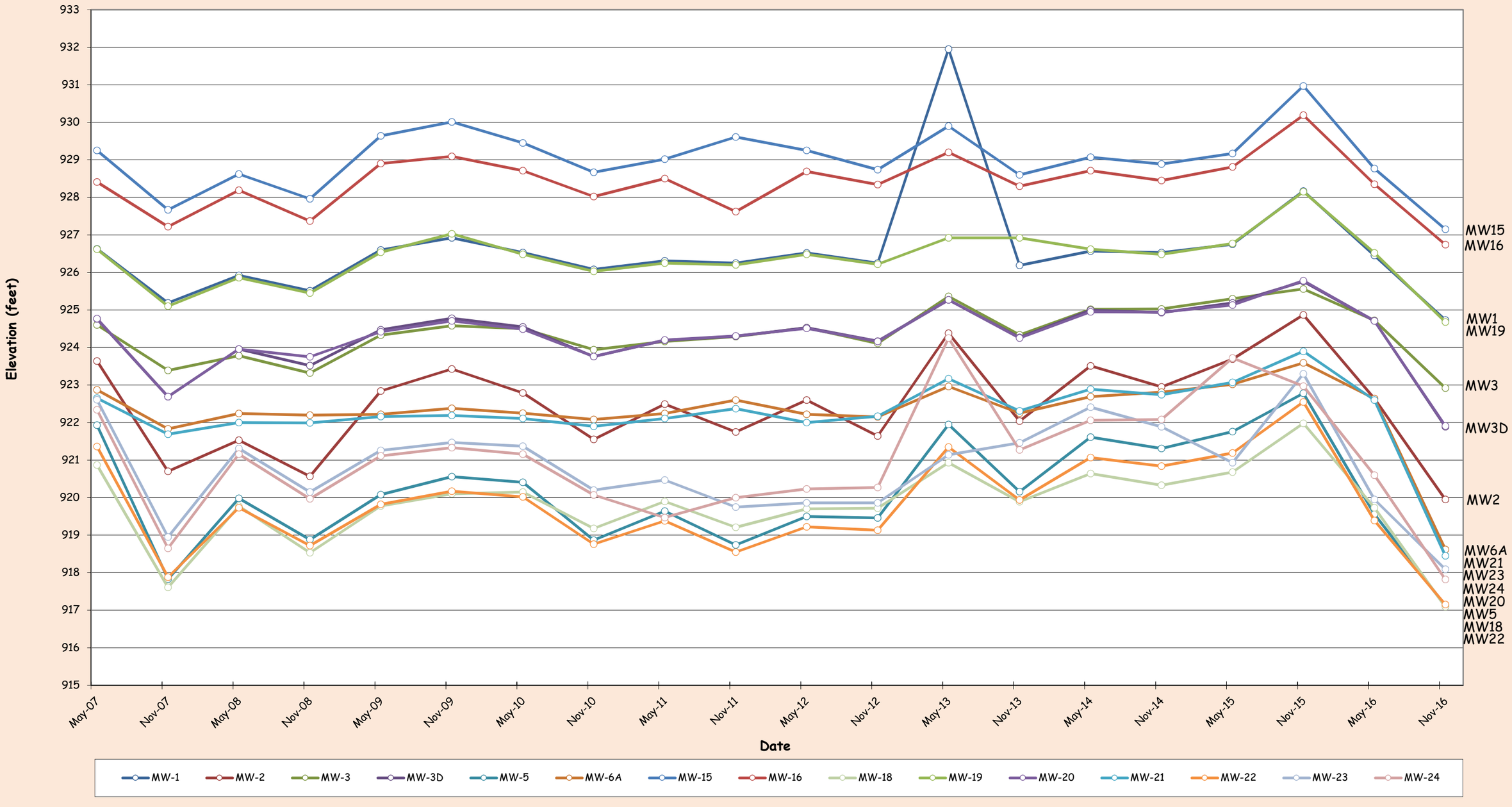
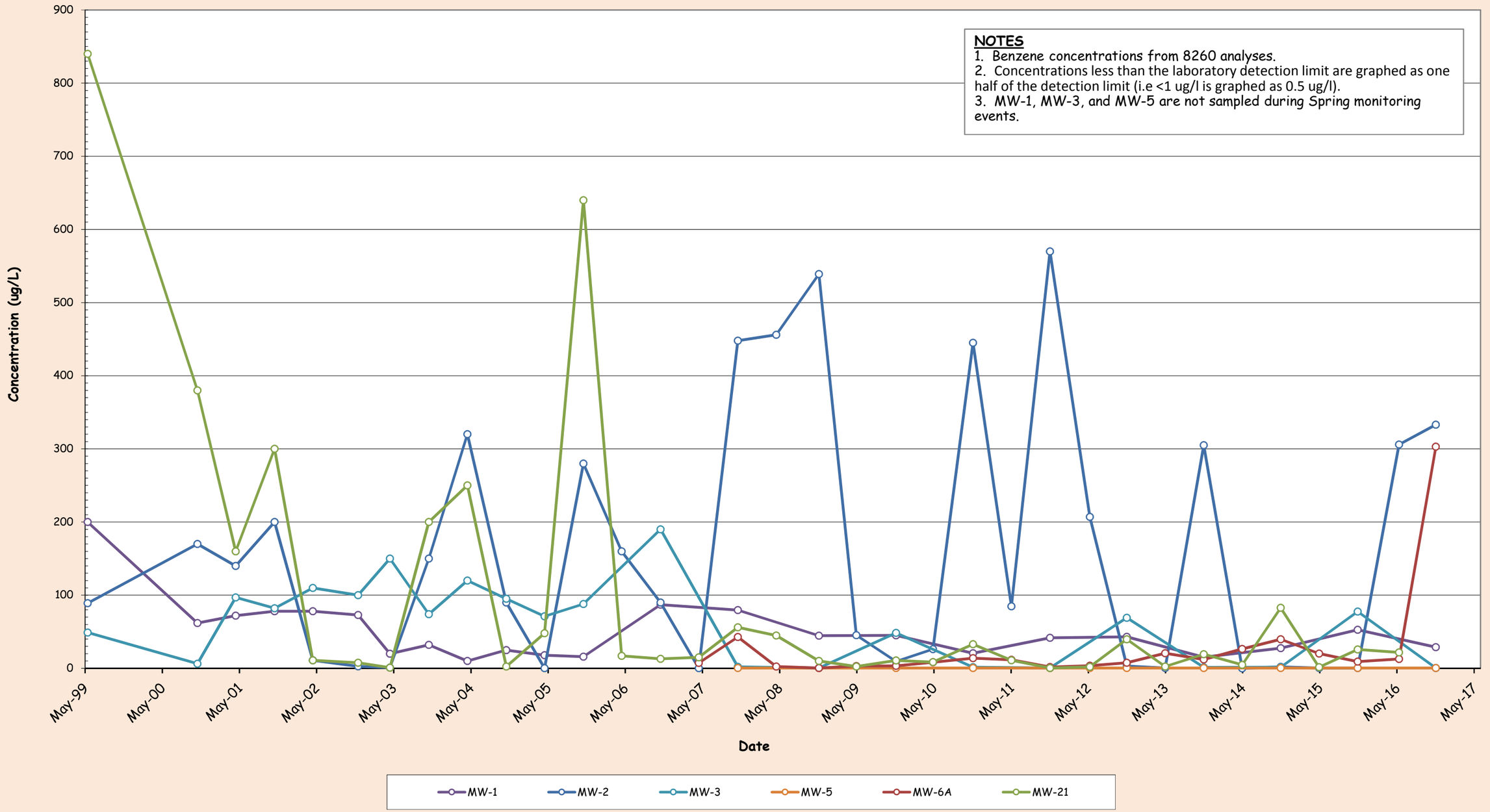
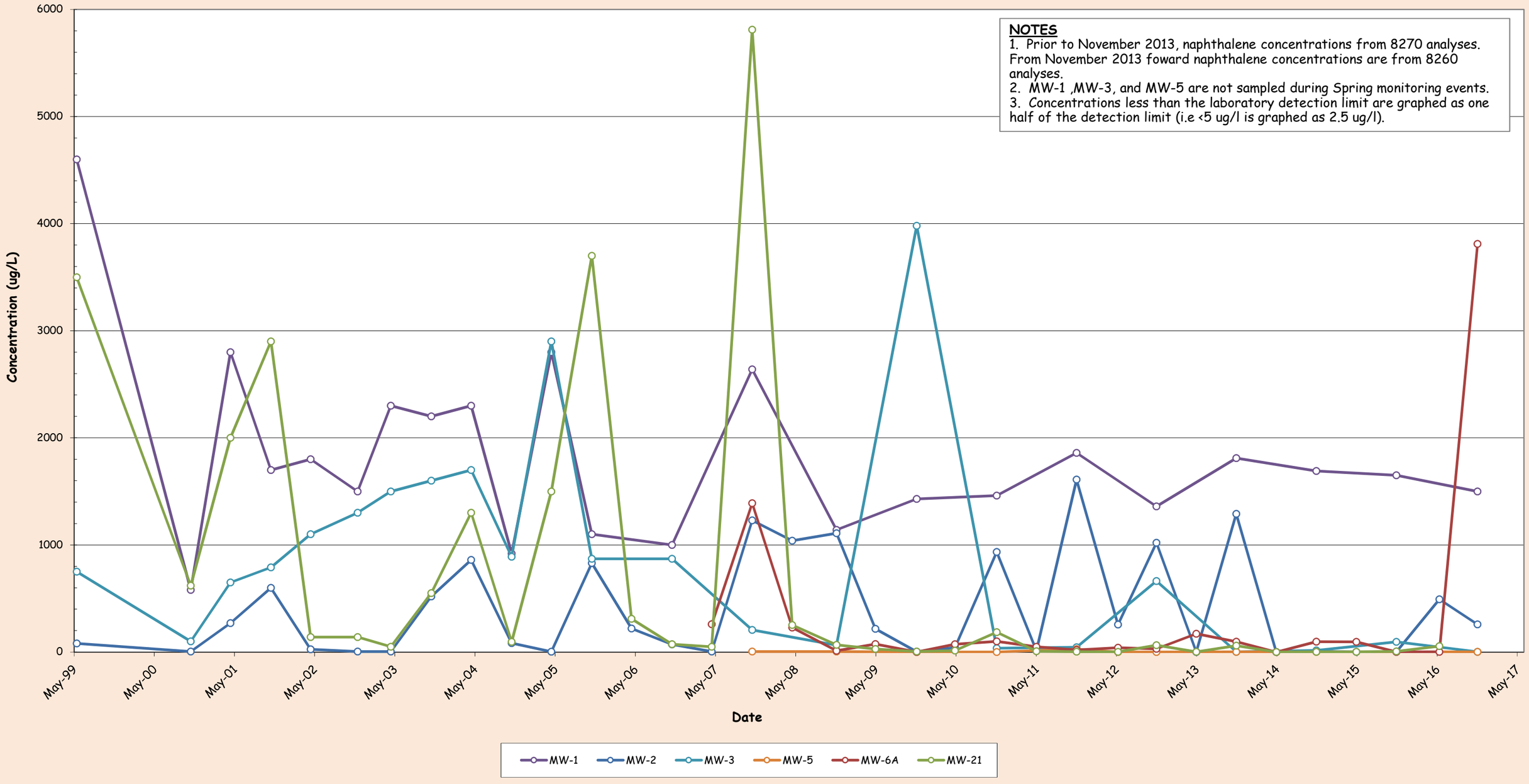


**Chart 2**
**Temporal Benzene Concentrations in Shallow Wells**
**CSXF Bramlette Road Site**



## Chart 3
### Temporal Naphthalene Concentrations in Shallow Wells
### CSXF Bramlette Road Site




**NOTES**

1. Prior to November 2013, naphthalene concentrations from 8270 analyses. From November 2013 foward naphthalene concentrations are from 8260 analyses.
2. MW-1 ,MW-3, and MW-5 are not sampled during Spring monitoring events.
3. Concentrations less than the laboratory detection limit are graphed as one half of the detection limit (i.e <5 ug/l is graphed as 2.5 ug/l).

# Appendix III

# Groundwater Level Measurements

# Sample Collection Summary Sheets

JOB NAME: BRAMLETTE RD. MGP

JOB NUMBER: 1264-08-105

DATE: 11/14/16

| WELL NO. | TAPE DEPTH TO WATER | COMMENTS |
|---|---|---|
| MW-1 | 8.80 | |
| MW-2 | 13.97 | |
| MW-3 | 11.82 | |
| MW-3D | 12.72 | |
| MW-5 | 12.46 | |
| MW-6A | 12.70 | |
| MW-15 | 11.50 | |
| MW-16 | 11.29 | |
| MW-18 | 15.38 | |
| MW-19 | 8.88 | |
| MW-20 | 12.98 | |
| MW-21 | 15.64 | |
| MW-22 | 12.51 | |
| MW-23 | 5.66 | |
| MW-24 | 7.43 | |
| MW-25R | 4.07 | |
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| | | |
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| | | |
| | | |
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| | | |
| | | |
| | | |

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd, MGP
2. Project No.: 1264-08-105
3. Sampled By: Gorsky/Klemm
4. Weather: Sunny, cool
5. Location: Greenville, S.C.
6. Well #: MW-1

Water Level Information:
1. Date: 11.15.16 2. Time: 14:52 3. Static WL: 6.80 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 3'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.15.16 2. Time Evac Started: 15:35 3. Time Evac. Finished: 16:00
4. Method of Evacuation: PERISTALTIC 5. Tot. Depth: 16.92 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 8.12
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 15:40 | 15:45 | 15:50 | 15:55 | 16:00 | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 19.37 | 19.20 | 19.13 | 19.11 | 19.10 | | |
| pH (Standard Units) | 6.11 | 6.09 | 6.10 | 6.11 | 6.11 | | |
| Spec. Cond. (umhos) | 0.401 | 0.403 | 0.404 | 0.405 | 0.404 | | |
| Turbidity (NTU) | 1.52 | 1.45 | 0.95 | 0.83 | 0.65 | | |
| D.O. (mg/L) | 1.61 | 1.17 | 0.96 | 0.80 | 0.81 | | |
| ORP (mV) | -87.5 | -91.5 | -94.5 | -97.1 | -99.1 | | |
| Odor (subjective) | STRONG. | STRONG. | STRONG. | STRONG. | STRONG. | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 2.5

Sampling Information
1. Date: 11.15.16 2. Time: 16:02
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis/Gourley
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-2

Water Level Information:
1. Date: 11.16.16 2. Time: 09:23 3. Static WL: 13.97 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.16.16 2. Time Evac Started: 9:30 0944 3. Time Evac. Finished: 1014
4. Method of Evacuation: PERISTALTIC 5. Tot. Depth: 18.2 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 4.23
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 0949 | 0954 | 0959 | 1004 | 1009 | 1014 | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 19.15 | 19.80 | 19.75 | 19.82 | 19.81 | 19.90 | |
| pH (Standard Units) | 6.21 | 6.24 | 6.25 | 6.27 | 6.29 | 6.30 | |
| Spec. Cond. (umhos) | 0.494 | 0.496 | 0.500 | 0.500 | 0.499 | 0.511 | |
| Turbidity (NTU) | 119 | 52.1 | 19.8 | 14.5 | 10.9 | 8.20 | |
| D.O. (mg/L) | 5.54 | 4.40 | 4.64 | 4.97 | 5.10 | 5.36 | |
| ORP (mV) | -72.3 | -63.4 | -63.2 | -64.4 | -65.9 | -69.2 | |
| Odor (subjective) | none | none | none | none | none | none | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 1

Sampling Information
1. Date: 11/16/16 2. Time: 1018
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: Collected Field Blank @ 1030

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Gentry/Klemm
4. Weather: Sunny, Cool
5. Location: Greenville, S.C.
6. Well #: MW-3

Water Level Information:
1. Date: 11.15.16
2. Time: 11:59
3. Static WL: 11.82 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface:
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.15.16
2. Time Evac Started: 13:04
3. Time Evac. Finished: 13:25
4. Method of Evacuation: Peristaltic Pump
5. Tot. Depth: 16.68 Ft. Below M. P.
6. Casing Diameter (in.): 2
7. Height of water Column (Ft.): 4.86
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual
Buffer pH 4.01: 3.93 Actual
Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 13:10 | 13:20 | 13:25 | | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 17.80 | 17.90 | 17.91 | | | | |
| pH (Standard Units) | 6.22 | 6.29 | 6.32 | | | | |
| Spec. Cond. (umhos) | 1.004 | 1.025 | 1.026 | | | | |
| Turbidity (NTU) | 3.40 | 2.47 | 1.88 | | | | |
| D.O. (mg/L) | 1.42 | 0.60 | 0.58 | | | | |
| ORP (mV) | -111.0 | -121.3 | -124.1 | | | | |
| Odor (subjective) | STRONG | STRONG | STRONG | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.):

Sampling Information
1. Date: 11.15.16
2. Time: 13:27
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes
6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: ≈150 mL/min

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: COREY / KLEMM
4. Weather: IDEAL
5. Location: Greenville, S.C.
6. Well #: S-D

Water Level Information:
1. Date: 11.15.16 2. Time: 11:58 3. Static WL: 12.72 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface:
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.15.16 2. Time Evac Started: 12:05 3. Time Evac. Finished: 12:45
4. Method of Evacuation: PERISTALTIC 5. Tot. Depth: 23.42 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 10.7
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 12:10 | 12:15 | 12:20 | 12:25 | 12:30 | 12:35 | 12:45 | 12:45 |
|---|---|---|---|---|---|---|---|---|
| Water Temp (C) | 16.76 | 16.63 | 16.67 | 16.70 | 16.71 | 16.69 | 16.62 | 16.77 |
| pH (Standard Units) | 6.02 | 5.98 | 6.01 | 6.03 | 6.02 | 6.01 | 5.98 | 5.92 |
| Spec. Cond. (umhos) | 0.296 | 0.303 | 0.304 | 0.301 | 0.295 | 0.283 | 0.274 | 0.272 |
| Turbidity (NTU) | 9.35 | 4.75 | 2.77 | 1.43 | 1.48 | 1.06 | 1.43 | 1.48 |
| D.O. (mg/L) | 3.66 | 1.97 | 1.40 | 1.21 | 1.04 | 0.89 | 0.77 | 0.70 |
| ORP (mV) | -83.5 | -80.0 | -80.0 | -82.4 | -80.9 | -80.3 | -75.5 | -77.8 |
| Odor (subjective) | STRONG | STRONG | STRONG | STRONG | STRONG | STRONG | STRONG | STRONG |
| Other: | | | | | | | | |

Total Volume Purged (gal.): 1.5

Sampling Information
1. Date: 11.15.16 2. Time: 12:47
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis/Goreday
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-5

Water Level Information:
1. Date: 11/14/16 2. Time: 1212 3. Static WL: 12.46 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 3"
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16 2. Time Evac Started: 1212 3. Time Evac. Finished: 1227
4. Method of Evacuation: Peristaltic Pump 5. Tot. Depth: 15.92 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 3.46
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 1217 | 1222 | 1227 | | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 21.79 | 21.67 | 21.71 | | | | |
| pH (Standard Units) | 5.22 | 5.30 | 5.36 | | | | |
| Spec. Cond. (umhos) | 0.111 | 0.128 | 0.138 | | | | |
| Turbidity (NTU) | 14.4 | 9.66 | 3.57 | | | | |
| D.O. (mg/L) | 0.46 | 0.48 | 0.49 | | | | |
| ORP (mV) | -1.2 | -29.0 | -33.7 | | | | |
| Odor (subjective) | moderate | moderate | moderate | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 0.5

Sampling Information
1. Date: 11/14/16 2. Time: 1230
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Jacus / Goretoy
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-6A

Water Level Information:
1. Date: 11/14/16
2. Time: 1510 ~~12.70~~
3. Static WL: 12.70 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: .8'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16
2. Time Evac Started: 1510
3. Time Evac. Finished: 1512
4. Method of Evacuation: Bailer
5. Tot. Depth: 17.45 Ft. Below M. P.
6. Casing Diameter (in.): 2
7. Height of water Column (Ft.): 4.75
8. Decon Procedure: ~~Dedicated Tubing~~

Meter Callibration:
Buffer pH 7.00: 6.95 Actual
Buffer pH 4.01: 3.93 Actual
Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | | | | | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | | | | | | | |
| pH (Standard Units) | | | | | | | |
| Spec. Cond. (umhos) | | | | | | | |
| Turbidity (NTU) | | | | | | | |
| D.O. (mg/L) | | | | | | | |
| ORP (mV) | | | | | | | |
| Odor (subjective) | Strong | | | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 0

Sampling Information
1. Date: 11/14/16
2. Time: 1515
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes
6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: collected sample from first 3 inch bailers due to strong odor and sheen.

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis/Gentry
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-15

Water Level Information:
1. Date: 11/16/16 2. Time: 1104 3. Static WL: 11.50 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 0
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/16/16 2. Time Evac Started: 1104 3. Time Evac. Finished: 1106
4. Method of Evacuation: Bailer 5. Tot. Depth: 57.51 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 46.01
8. Decon Procedure: ~~Dedicated Tubing~~

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Time | 1106 | | | | | | |
| Water Temp (C) | 17.24 | | | | | | |
| pH (Standard Units) | 7.11 | | | | | | |
| Spec. Cond. (umhos) | 0.141 | DRY | | | | | |
| Turbidity (NTU) | 58.4 | | | | | | |
| D.O. (mg/L) | 3.50 | | | | | | |
| ORP (mV) | 49.4 | | | | | | |
| Odor (subjective) | none | | | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 7.5

Sampling Information
1. Date: 11/16/16 2. Time: 1150
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Docus/Goretoy
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-16

Water Level Information:
1. Date: 11/16/16 2. Time: 1110 3. Static WL: 11.29 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/16/16 2. Time Evac Started: 1108 3. Time Evac. Finished: 1128
4. Method of Evacuation: Peristaltic Pump 5. Tot. Depth: 17.92 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 6.63
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 1113 | 1118 | 1123 | 1128 | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 18.97 | 18.99 | 19.02 | 19.04 | | | |
| pH (Standard Units) | 5.99 | 6.09 | 6.15 | 6.19 | | | |
| Spec. Cond. (umhos) | 0.994 | 1.011 | 1.015 | 1.017 | | | |
| Turbidity (NTU) | 42.0 | 18.7 | 10.7 | 5.48 | | | |
| D.O. (mg/L) | 0.96 | 0.93 | 0.96 | 0.97 | | | |
| ORP (mV) | -56.3 | -61.6 | -66.4 | -66.9 | | | |
| Odor (subjective) | none | none | none | none | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 1

Sampling Information
1. Date: 11/16/16 2. Time: 1130
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis / Goreley
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-1B

Water Level Information:
1. Date: 11/14/16 2. Time: 1540 3. Static WL: 15.38 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 3'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16 2. Time Evac Started: 1540 3. Time Evac. Finished: 1600
4. Method of Evacuation: Peristaltic Pump 5. Tot. Depth: 27.28 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 11.90
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 1545 | 1550 | 1555 | 1600 | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 17.97 | 18.09 | 18.26 | 18.27 | | | |
| pH (Standard Units) | 5.87 | 5.57 | 5.61 | 5.63 | | | |
| Spec. Cond. (umhos) | 0.315 | 0.298 | 0.290 | 0.287 | | | |
| Turbidity (NTU) | 1.44 | 1.06 | 0.85 | 0.75 | | | |
| D.O. (mg/L) | 2.84 | 1.01 | 0.68 | 0.67 | | | |
| ORP (mV) | -53.7 | -45.1 | -45.2 | -46.1 | | | |
| Odor (subjective) | moderate | moderate | moderate | moderate | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 1.0

Sampling Information
1. Date: 11/14/16 2. Time: 1603
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Goreley / Klemm
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-19

Water Level Information:
1. Date: 11.15.16 2. Time: 14:51 3. Static WL: 8.88 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 0
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.15.16 2. Time Evac Started: 14:58 3. Time Evac. Finished: 15:25
4. Method of Evacuation: PERISTALTIC 5. Tot. Depth: 21.86 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 12.98
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: ~~6.95~~ Actual Buffer pH 4.01: ~~3.95~~ Actual Cond 1000 uS: ~~1000~~ Actual

Record of Well Development:

| Time | 15:05 | 15:10 | 15:15 | 15:20 | 15:25 | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 19.21 | 19.16 | 19.10 | 19.09 | 19.05 | | |
| pH (Standard Units) | 5.99 | 5.99 | 6.05 | 6.09 | 6.11 | | |
| Spec. Cond. (umhos) | 0.407 | 0.408 | 0.408 | 0.408 | 0.408 | | |
| Turbidity (NTU) | 6.90 | 3.26 | 2.32 | 1.71 | 1.62 | | |
| D.O. (mg/L) | 1.46 | 1.14 | 1.02 | 0.83 | 0.83 | | |
| ORP (mV) | -90.3 | -92.8 | -97.2 | -100.3 | -101.4 | | |
| Odor (subjective) | STRONG | STRONG | STRONG | STRONG | STRONG | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 2.5

Sampling Information
1. Date: 11.15.16 2. Time: 15:27
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: ~~500~~ 400 mL/MIN

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Goretoy / Klemm
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-20

Water Level Information:
1. Date: 11.15.16 2. Time: 12:00 3. Static WL: 12.98 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11.15.16 2. Time Evac Started: 13:49 3. Time Evac. Finished: 14:25
4. Method of Evacuation: Peristaltic Pump 5. Tot. Depth: 28.04 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 15.06
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: ~~6.95~~ Actual Buffer pH 4.01: ~~3.93~~ Actual Cond 1000 uS: ~~1000~~ Actual

Record of Well Development:

| Time | 13:55 | 14:05 | 14:15 | 14:20 | 14:25 | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 16.99 | 17.18 | 17.12 | 17.14 | 17.19 | | |
| pH (Standard Units) | 6.25 | 5.85 | 5.93 | 5.94 | 5.95 | | |
| Spec. Cond. (umhos) | 0.262 | 0.259 | 0.254 | 0.253 | 0.253 | | |
| Turbidity (NTU) | 1.60 | 1.16 | [illegible] | 1.01 | 1.50 | | |
| D.O. (mg/L) | 2.10 | 1.32 | 0.96 | 0.84 | 0.80 | | |
| ORP (mV) | -53.2 | -46.5 | -59.3 | -63.5 | -66.1 | | |
| Odor (subjective) | SLIGHT | " " | " " | " " | " " | | |
| Other: | | | 1.16 | | | | |

Total Volume Purged (gal.): _____ TURBITITY.

Sampling Information
1. Date: 11.15.16 2. Time: 14:27
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: ≈ 150 mL/MIN.

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Dacus/Gormley
4. Weather: Sunny/Cool
5. Location: Greenville, S.C.
6. Well #: MW-21

Water Level Information:
1. Date: 11/14/16 2. Time: 1505 3. Static WL: 15.64 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 2. Time Evac Started: 3. Time Evac. Finished:
4. Method of Evacuation: Bailer 5. Tot. Depth: 20.58 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 4.94
8. Decon Procedure: ~~Dedicated Tubing~~

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | | | | | | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | | | | | | | |
| pH (Standard Units) | | | | | | | |
| Spec. Cond. (umhos) | | | | | | | |
| Turbidity (NTU) | | | | | | | |
| D.O. (mg/L) | | | | | | | |
| ORP (mV) | | | | | | | |
| Odor (subjective) | | | | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 0

Sampling Information
1. Date: 2. Time:
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: Free Product (Black Tar) present, therefore, did not collect sample. Approx 0.01' thick

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Dacus/Goreday
4. Weather: Sunny, Cool
5. Location: Greenville, S.C.
6. Well #: MW-22

Water Level Information:
1. Date: 11/14/16 2. Time: 0940 3. Static WL: 12.51 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16 2. Time Evac Started: 1120 3. Time Evac. Finished: 1150
4. Method of Evacuation: Peristaltic Pump 5. Tot. Depth: 35.36 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 22.85
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 1125 | 1130 | 1135 | 1140 | 1145 | 1150 | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 18.77 | 18.62 | 18.54 | 18.93 | 19.37 | 19.49 | |
| pH (Standard Units) | 6.23 | 5.55 | 5.42 | 5.40 | 5.42 | 5.42 | |
| Spec. Cond. (umhos) | 0.201 | 0.198 | 0.196 | 0.195 | 0.193 | 0.192 | |
| Turbidity (NTU) | 48.0 | 22.4 | 18.5 | 13.6 | 10.9 | 7.63 | |
| D.O. (mg/L) | 5.57 | 2.19 | 1.86 | 1.73 | 1.67 | 1.67 | |
| ORP (mV) | 109.5 | 135.9 | 144.1 | 146.3 | 143.1 | 144.6 | |
| Odor (subjective) | none | none | none | none | none | none | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 1.0

Sampling Information
1. Date: 11/14/16 2. Time: 1152
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Dacus/Gordley
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-23

Water Level Information:
1. Date: 11/14/16 2. Time: 1355 3. Static WL: 5.66 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16 2. Time Evac Started: 1356 3. Time Evac. Finished: 1403
4. Method of Evacuation: Bailer 5. Tot. Depth: 45.36 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 39.7
8. Decon Procedure: ~~Dedicated Tubing~~

Meter Callibration:
Buffer pH 7.00: 6.95 (Actual) Buffer pH 4.01: 3.93 (Actual) Cond 1000 uS: 1000 (Actual)

Record of Well Development:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Time | 1403 | | | | | | |
| Water Temp (C) | 16.84 | | | | | | |
| pH (Standard Units) | 5.96 | | | | | | |
| Spec. Cond. (umhos) | 0.181 | DRY | | | | | |
| Turbidity (NTU) | 240 | | | | | | |
| D.O. (mg/L) | 6.54 | | | | | | |
| ORP (mV) | 25.3 | | | | | | |
| Odor (subjective) | none | | | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): 7.5

Sampling Information
1. Date: 11/14/16 2. Time: 1403
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis/Goretay
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-24

Water Level Information:
1. Date: 11/14/16 2. Time: 1325 3. Static WL: 7.43 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 2'
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/14/16 2. Time Evac Started: 1325 3. Time Evac. Finished: 1330
4. Method of Evacuation: Bailer 5. Tot. Depth: 10.30 Ft. Below M. P.
6. Casing Diameter (in.): 2 7. Height of water Column (Ft.): 2.87
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual Buffer pH 4.01: 3.93 Actual Cond 1000 uS: 1000 Actual

Record of Well Development:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Time | 1330 | | | | | | |
| Water Temp (C) | 19.09 | | | | | | |
| pH (Standard Units) | 5.89 | | | | | | |
| Spec. Cond. (umhos) | 0.211 | DRY | | | | | |
| Turbidity (NTU) | 236 | | | | | | |
| D.O. (mg/L) | 3.15 | | | | | | |
| ORP (mV) | -25.2 | | | | | | |
| Odor (subjective) | none | | | | | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): _____

Sampling Information
1. Date: 11/14/16 2. Time: 1330
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes 6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes:

**SAMPLE COLLECTION**
**SUMMARY SHEET**

General
1. Job Name: Bramlette Rd. MGP
2. Project No.: 1264-08-105
3. Sampled By: Davis/Gourley
4. Weather: Sunny Cool
5. Location: Greenville, S.C.
6. Well #: MW-25R

Water Level Information:
1. Date: 11/16/16
2. Time: 1240
3. Static WL: 4.07 Ft. Below MP
4. Description of Measuring Point (MP): Top of Casing
5. Height of MP above/below (circle) Land Surface: 0
6. Method of Water Level Measurement: Electric Water Level Tape

Evacuation Procedure:
1. Date: 11/16/16
2. Time Evac Started: 1244
3. Time Evac. Finished: 1311
4. Method of Evacuation: Peristaltic Pump
5. Tot. Depth: 15.90 Ft. Below M. P.
6. Casing Diameter (in.): 2
7. Height of water Column (Ft.): 11.83
8. Decon Procedure: Dedicated Tubing

Meter Callibration:
Buffer pH 7.00: 6.95 Actual
Buffer pH 4.01: 3.93 Actual
Cond 1000 uS: 1000 Actual

Record of Well Development:

| Time | 1251 | 1256 | 1301 | 1306 | 1311 | | |
|---|---|---|---|---|---|---|---|
| Water Temp (C) | 22.82 | 23.04 | 23.08 | 23.09 | 23.18 | | |
| pH (Standard Units) | 6.59 | 6.34 | 6.32 | 6.31 | 6.28 | | |
| Spec. Cond. (umhos) | 0.163 | 0.166 | 0.166 | 0.168 | 0.170 | | |
| Turbidity (NTU) | 104 | 91 | 96.5 | 66.4 | 77.8 | | |
| D.O. (mg/L) | 2.30 | 1.40 | 0.99 | 0.78 | 0.60 | | |
| ORP (mV) | -39.8 | -24.8 | -33.9 | -47.6 | -53.7 | | |
| Odor (subjective) | none | none | none | none | none | | |
| Other: | | | | | | | |

Total Volume Purged (gal.): ~1.25

Sampling Information
1. Date: 11/16/16
2. Time: 1315
3. Sample Containers(Number/Size/Type):
4. Analysis Required: 8260, NO3, SO4, Ferrous Fe, Alk., Manganese
5. Samples Preserved: Yes
6. Preservative: HCl, HNO3, Ice
9. Lab Performing Analysis: Test America

Notes: pumped @ ~ 180 ml/min observed periodic algae pumping through tubing

# Appendix IV

# Analytical Laboratory Reports

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**

**Program Manager: Amanda Payne**

**Order ID**
**J16110470**

*Please contact the Program Manager, Amanda Payne, at 980-875-6995 with any questions regarding this report.*

**Sample Number: 2016037092** **MW-5**

Collected Date: 11/14/2016 12:30 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037093** **MW-6A**

Collected Date: 11/14/2016 03:15 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037094** **MW-18**

Collected Date: 11/14/2016 04:03 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**
**Program Manager: Amanda Payne**

**Order ID**
**J16110470**

**Sample Number: 2016037095** **MW-22**

Collected Date: 11/14/2016 11:52 AM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037096** **MW-23**

Collected Date: 11/14/2016 02:03 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037097** **MW-24**

Collected Date: 11/14/2016 01:30 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037098** **Trip Blank**

Collected Date: 11/14/2016 Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**
**Program Manager: Amanda Payne**

**Order ID**
**J16110470**

---

**Program Manager:** **Amanda Payne**
980-875-6995

**Report Authorized By: (Signature)**

Digitally signed by Amanda Payne
Date: 2016.12.05 15:54:53 -05'00'

An EDD has been included with this report.



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-116219-1
Client Project/Site: Bramlett Rd. MGP J16110470

For:
Duke Energy Corporation
13339 Hagers Ferry Road
Huntersville, North Carolina 28078

Attn: Lab Customer

*Authorized for release by:*
*11/30/2016 12:54:26 PM*

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

LINKS

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# Table of Contents

# Sample Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 490-116219-1 | MW-5 | Water | 11/14/16 12:30 | 11/16/16 10:25 |
| 490-116219-2 | MW-6A | Water | 11/14/16 15:15 | 11/16/16 10:25 |
| 490-116219-3 | MW-18 | Water | 11/14/16 16:03 | 11/16/16 10:25 |
| 490-116219-4 | MW-22 | Water | 11/14/16 11:52 | 11/16/16 10:25 |
| 490-116219-5 | MW-23 | Water | 11/14/16 14:03 | 11/16/16 10:25 |
| 490-116219-6 | MW-24 | Water | 11/14/16 13:30 | 11/16/16 10:25 |
| 490-116219-7 | Trip Blank | Water | 11/14/16 00:01 | 11/16/16 10:25 |

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Job ID: 490-116219-1

**Laboratory: TestAmerica Nashville**

**Narrative**

## CASE NARRATIVE

## Client: Duke Energy Corporation

## Project: Bramlett Rd. MGP J16110470

## Report Number: 490-116219-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Nashville attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

**RECEIPT**
The samples were received on 11/16/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.1 C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5), MW-24 (490-116219-6) and Trip Blank (490-116219-7) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/18/2016 and 11/20/2016.

2-Chlorotoluene failed the recovery criteria high for LCS 490-388378/3. 2-Chlorotoluene failed the recovery criteria high for LCSD 490-388378/4. Refer to the QC report for details.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Samples MW-6A (490-116219-2)[10X] and MW-6A (490-116219-2)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Job ID: 490-116219-1 (Continued)

### Laboratory: TestAmerica Nashville (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**TOTAL METALS (ICP)**
Samples MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/22/2016 and 11/25/2016 and analyzed on 11/26/2016 and 11/28/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**ALKALINITY**
Samples MW-5 (490-116219-1), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 11/16/2016 and 11/23/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Sulfate**
Samples MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

Sulfate failed the recovery criteria low for the MS of sample MW-24MS (490-116219-6) in batch 490-387414. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Nitrate**
Samples MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

Nitrate as N failed the recovery criteria high for the MS of sample MW-5MS (490-116219-1) in batch 490-387416. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) recovery was within acceptance limits.

The following sample(s) was received with less than 8 hours remaining on the holding time on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6).

Sample MW-23 (490-116219-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**FERROUS IRON**
Samples MW-5 (490-116219-1), MW-6A (490-116219-2), MW-18 (490-116219-3), MW-22 (490-116219-4), MW-23 (490-116219-5) and MW-24 (490-116219-6) were analyzed for ferrous iron in accordance with SM 3500 F+2 B. The samples were analyzed on 11/16/2016 and 11/22/2016.

Samples MW-5 (490-116219-1)[10X], MW-6A (490-116219-2)[10X] and MW-24 (490-116219-6)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD Recovery is outside acceptance limits. |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |
| * | LCS or LCSD is outside acceptance limits. |

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD Recovery is outside acceptance limits. |
| H | Sample was prepped or analyzed beyond the specified holding time |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-5**
**Date Collected: 11/14/16 12:30**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-1**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 19:02 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 19:02 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 19:02 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 19:02 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-5**
**Date Collected: 11/14/16 12:30**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-1**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| **Toluene** | **1.68** | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/18/16 19:02 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/18/16 19:02 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | | *11/18/16 19:02* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/18/16 19:02* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *70 - 130* | | *11/18/16 19:02* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/18/16 19:02* | *1* |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H F1 | 0.100 | | mg/L | | | 11/17/16 06:08 | 1 |
| **Sulfate** | **2.74** | | 1.00 | | mg/L | | | 11/17/16 06:08 | 1 |

## Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **1.00** | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 04:29 | 1 |

## General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **56.1** | | 10.0 | | mg/L | | | 11/16/16 22:35 | 1 |
| **Ferrous Iron** | **9.63** | **HF** | 1.00 | | mg/L | | | 11/16/16 18:29 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-6A**
**Date Collected: 11/14/16 15:15**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-2**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 19:28 | 1 |
| **Benzene** | **303** | | 10.0 | | ug/L | | | 11/20/16 18:12 | 10 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 19:28 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| **Ethylbenzene** | **19.7** | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 19:28 | 1 |
| **Isopropylbenzene** | **2.90** | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 19:28 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| **Naphthalene** | **3810** | | 500 | | ug/L | | | 11/20/16 18:38 | 100 |
| **n-Butylbenzene** | **1.10** | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| **p-Isopropyltoluene** | **2.85** | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:28 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-6A
**Date Collected: 11/14/16 15:15**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116219-2
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| **Toluene** | **346** | | 10.0 | ug/L | | | 11/20/16 18:12 | 10 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| **1,2,4-Trimethylbenzene** | **94.8** | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| **1,3,5-Trimethylbenzene** | **76.7** | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/18/16 19:28 | 1 |
| **Xylenes, Total** | **354** | | 3.00 | ug/L | | | 11/18/16 19:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | | *11/18/16 19:28* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | | *11/20/16 18:12* | *10* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/20/16 18:38* | *100* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/18/16 19:28* | *1* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/20/16 18:12* | *10* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/20/16 18:38* | *100* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/18/16 19:28* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/20/16 18:12* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/20/16 18:38* | *100* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* | | *11/18/16 19:28* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/20/16 18:12* | *10* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/20/16 18:38* | *100* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H | 0.100 | mg/L | | | 11/17/16 06:41 | 1 |
| **Sulfate** | **9.59** | | 1.00 | mg/L | | | 11/17/16 06:41 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.599** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 04:34 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Ferrous Iron** | **11.7** | **HF** | 1.00 | mg/L | | | 11/16/16 18:29 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-18**
**Date Collected: 11/14/16 16:03**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-3**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 19:54 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 19:54 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 19:54 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 19:54 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/20/16 15:35 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-18
**Date Collected: 11/14/16 16:03**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116219-3
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/18/16 19:54 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/18/16 19:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *11/18/16 19:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/20/16 15:35* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* | | *11/18/16 19:54* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:35* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* | | *11/18/16 19:54* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/20/16 15:35* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/18/16 19:54* | *1* |
| *Toluene-d8 (Surr)* | *110* | | *70 - 130* | | *11/20/16 15:35* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H | 0.100 | | mg/L | | | 11/17/16 07:03 | 1 |
| **Sulfate** | **7.74** | | 1.00 | | mg/L | | | 11/17/16 07:03 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.0203** | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 04:39 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **118** | | 10.0 | | mg/L | | | 11/16/16 22:48 | 1 |
| **Ferrous Iron** | **2.41** | **HF** | 0.100 | | mg/L | | | 11/16/16 18:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-22**
**Date Collected: 11/14/16 11:52**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-4**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 20:20 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 20:20 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 20:20 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 20:20 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/20/16 16:01 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-22
**Date Collected: 11/14/16 11:52**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116219-4
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/18/16 20:20 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/18/16 20:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | | *11/18/16 20:20* | *1* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/20/16 16:01* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/18/16 20:20* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *70 - 130* | | *11/20/16 16:01* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/18/16 20:20* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/20/16 16:01* | *1* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* | | *11/18/16 20:20* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/20/16 16:01* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrate as N** | **3.38** | **H** | 0.100 | | mg/L | | | 11/17/16 07:25 | 1 |
| **Sulfate** | **5.46** | | 1.00 | | mg/L | | | 11/17/16 07:25 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.633** | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 04:45 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **33.3** | | 10.0 | | mg/L | | | 11/16/16 22:53 | 1 |
| Ferrous Iron | ND | HF | 0.100 | | mg/L | | | 11/16/16 18:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-23**
**Date Collected: 11/14/16 14:03**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 20:47 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 20:47 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 20:47 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 20:47 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 20:47 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-23**
**Date Collected: 11/14/16 14:03**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/18/16 20:47 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/18/16 20:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *11/18/16 20:47* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/18/16 20:47* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/18/16 20:47* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/18/16 20:47* | *1* |

## Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Nitrate as N** | **3.93** | **H** | 1.00 | mg/L | | | 11/17/16 07:59 | 10 |
| **Sulfate** | **18.2** | | 1.00 | mg/L | | | 11/17/16 07:48 | 1 |

## Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.873** | | 0.0150 | mg/L | | 11/25/16 07:59 | 11/28/16 13:56 | 1 |

## General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **16.1** | | 10.0 | mg/L | | | 11/23/16 16:20 | 1 |
| Ferrous Iron | ND | HF | 0.100 | mg/L | | | 11/16/16 18:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: MW-24**
**Date Collected: 11/14/16 13:30**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-6**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 21:13 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 21:13 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 21:13 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 21:13 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 21:13 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-24
**Date Collected: 11/14/16 13:30**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116219-6
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/18/16 21:13 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/18/16 21:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *11/18/16 21:13* | *1* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/18/16 21:13* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* | | *11/18/16 21:13* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/18/16 21:13* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Nitrate as N** | **0.106** | **H** | 0.100 | mg/L | | | 11/17/16 10:57 | 1 |
| **Sulfate** | **16.1** | | 1.00 | mg/L | | | 11/17/16 10:57 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **1.82** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 04:50 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **44.9** | | 10.0 | mg/L | | | 11/23/16 12:45 | 1 |
| **Ferrous Iron** | **6.47** | **HF** | 0.500 | mg/L | | | 11/22/16 18:59 | 5 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: Trip Blank** — **Lab Sample ID: 490-116219-7**
**Date Collected: 11/14/16 00:01** — **Matrix: Water**
**Date Received: 11/16/16 10:25**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 18:10 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 18:10 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 18:10 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 18:10 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Client Sample ID: Trip Blank**
**Date Collected: 11/14/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-7**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/18/16 18:10 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/18/16 18:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/18/16 18:10* | *1* |
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | | *11/18/16 18:10* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/18/16 18:10* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/18/16 18:10* | *1* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-387924/7**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/18/16 15:06 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/18/16 15:06 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/18/16 15:06 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-387924/7**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/18/16 15:06 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/18/16 15:06 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | | *11/18/16 15:06* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/18/16 15:06* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/18/16 15:06* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/18/16 15:06* | *1* |

**Lab Sample ID: LCS 490-387924/3**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.27 | | ug/L | | 96 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.15 | | ug/L | | 96 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 95.03 | | ug/L | | 95 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 19.91 | | ug/L | | 100 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 24.39 | | ug/L | | 122 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.57 | | ug/L | | 103 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.47 | | ug/L | | 102 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 22.00 | | ug/L | | 110 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 20.53 | | ug/L | | 103 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 18.65 | | ug/L | | 93 | 70 - 130 |
| Acetone | 100 | 100.3 | | ug/L | | 100 | 39 - 150 |
| Benzene | 20.0 | 18.89 | | ug/L | | 94 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 18.30 | | ug/L | | 91 | 70 - 132 |
| Bromobenzene | 20.0 | 20.16 | | ug/L | | 101 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 19.60 | | ug/L | | 98 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.10 | | ug/L | | 90 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 19.76 | | ug/L | | 99 | 70 - 130 |
| Bromodichloromethane | 20.0 | 17.77 | | ug/L | | 89 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 17.92 | | ug/L | | 90 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-387924/3**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.31 | | ug/L | | 102 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 18.31 | | ug/L | | 92 | 70 - 130 |
| Bromomethane | 20.0 | 13.37 | | ug/L | | 67 | 53 - 150 |
| Carbon disulfide | 20.0 | 21.75 | | ug/L | | 109 | 64 - 135 |
| Diisopropyl ether | 20.0 | 18.53 | | ug/L | | 93 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 17.49 | | ug/L | | 87 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.27 | | ug/L | | 101 | 70 - 130 |
| 2-Hexanone | 100 | 92.53 | | ug/L | | 93 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 21.25 | | ug/L | | 106 | 70 - 133 |
| Chloroethane | 20.0 | 19.48 | | ug/L | | 97 | 60 - 138 |
| Chloroform | 20.0 | 19.00 | | ug/L | | 95 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 94.02 | | ug/L | | 94 | 60 - 137 |
| Chloromethane | 20.0 | 19.11 | | ug/L | | 96 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.33 | | ug/L | | 97 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 19.49 | | ug/L | | 97 | 70 - 133 |
| Dibromomethane | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 16.60 | | ug/L | | 83 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.08 | | ug/L | | 95 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 18.69 | | ug/L | | 93 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.86 | | ug/L | | 94 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.96 | | ug/L | | 105 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 17.16 | | ug/L | | 86 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.11 | | ug/L | | 111 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.62 | | ug/L | | 98 | 70 - 130 |
| Naphthalene | 20.0 | 16.22 | | ug/L | | 81 | 54 - 150 |
| n-Butylbenzene | 20.0 | 21.85 | | ug/L | | 109 | 68 - 137 |
| N-Propylbenzene | 20.0 | 21.56 | | ug/L | | 108 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 20.99 | | ug/L | | 105 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 21.23 | | ug/L | | 106 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.38 | | ug/L | | 87 | 46 - 150 |
| Styrene | 20.0 | 19.86 | | ug/L | | 99 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.16 | | ug/L | | 86 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 20.94 | | ug/L | | 105 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 17.08 | | ug/L | | 85 | 70 - 135 |
| Tetrachloroethene | 20.0 | 18.37 | | ug/L | | 92 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 19.54 | | ug/L | | 98 | 70 - 130 |
| Toluene | 20.0 | 19.47 | | ug/L | | 97 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 19.34 | | ug/L | | 97 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 20.86 | | ug/L | | 104 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 18.29 | | ug/L | | 91 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 21.17 | | ug/L | | 106 | 70 - 130 |
| Trichloroethene | 20.0 | 18.20 | | ug/L | | 91 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.88 | | ug/L | | 124 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 17.67 | | ug/L | | 88 | 59 - 150 |
| Vinyl chloride | 20.0 | 19.12 | | ug/L | | 96 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.84 | | ug/L | | 97 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-387924/3**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 108 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 95 | | 70 - 130 |
| Toluene-d8 (Surr) | 103 | | 70 - 130 |

**Lab Sample ID: LCSD 490-387924/4**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | | | 20.0 | 19.33 | | ug/L | | 97 | 45 - 138 | 0 | 19 |
| 1,2-Dibromoethane (EDB) | | | 20.0 | 19.16 | | ug/L | | 96 | 70 - 130 | 0 | 13 |
| 2-Butanone (MEK) | | | 100 | 105.9 | | ug/L | | 106 | 55 - 143 | 11 | 19 |
| 1,2-Dichlorobenzene | | | 20.0 | 19.54 | | ug/L | | 98 | 70 - 130 | 2 | 12 |
| 2-Chlorotoluene | | | 20.0 | 23.81 | | ug/L | | 119 | 70 - 130 | 2 | 15 |
| 1,3-Dichlorobenzene | | | 20.0 | 19.98 | | ug/L | | 100 | 70 - 130 | 3 | 13 |
| 1,4-Dichlorobenzene | | | 20.0 | 20.12 | | ug/L | | 101 | 70 - 130 | 2 | 12 |
| 4-Chlorotoluene | | | 20.0 | 21.46 | | ug/L | | 107 | 70 - 130 | 3 | 15 |
| 1,1-Dichloroethane | | | 20.0 | 20.36 | | ug/L | | 102 | 70 - 130 | 1 | 17 |
| 1,2-Dichloroethane | | | 20.0 | 18.13 | | ug/L | | 91 | 70 - 130 | 3 | 13 |
| Acetone | | | 100 | 98.51 | | ug/L | | 99 | 39 - 150 | 2 | 23 |
| Benzene | | | 20.0 | 18.69 | | ug/L | | 93 | 70 - 130 | 1 | 12 |
| 1,1-Dichloroethene | | | 20.0 | 17.80 | | ug/L | | 89 | 70 - 132 | 3 | 20 |
| Bromobenzene | | | 20.0 | 19.81 | | ug/L | | 99 | 70 - 130 | 2 | 16 |
| 1,2-Dichloropropane | | | 20.0 | 19.87 | | ug/L | | 99 | 70 - 130 | 1 | 15 |
| Bromochloromethane | | | 20.0 | 18.22 | | ug/L | | 91 | 70 - 130 | 1 | 16 |
| 1,3-Dichloropropane | | | 20.0 | 19.76 | | ug/L | | 99 | 70 - 130 | 0 | 12 |
| Bromodichloromethane | | | 20.0 | 17.77 | | ug/L | | 89 | 70 - 130 | 0 | 14 |
| 2,2-Dichloropropane | | | 20.0 | 16.89 | | ug/L | | 84 | 60 - 143 | 6 | 20 |
| Bromoform | | | 20.0 | 20.30 | | ug/L | | 102 | 70 - 137 | 0 | 14 |
| 1,1-Dichloropropene | | | 20.0 | 17.91 | | ug/L | | 90 | 70 - 130 | 2 | 16 |
| Bromomethane | | | 20.0 | 12.37 | | ug/L | | 62 | 53 - 150 | 8 | 19 |
| Carbon disulfide | | | 20.0 | 20.55 | | ug/L | | 103 | 64 - 135 | 6 | 16 |
| Diisopropyl ether | | | 20.0 | 18.43 | | ug/L | | 92 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | | | 20.0 | 17.74 | | ug/L | | 89 | 70 - 147 | 1 | 16 |
| Chlorobenzene | | | 20.0 | 19.94 | | ug/L | | 100 | 70 - 130 | 2 | 12 |
| 2-Hexanone | | | 100 | 95.04 | | ug/L | | 95 | 54 - 142 | 3 | 17 |
| Chlorodibromomethane | | | 20.0 | 20.88 | | ug/L | | 104 | 70 - 133 | 2 | 13 |
| Chloroethane | | | 20.0 | 18.52 | | ug/L | | 93 | 60 - 138 | 5 | 15 |
| Chloroform | | | 20.0 | 18.79 | | ug/L | | 94 | 70 - 130 | 1 | 14 |
| 4-Methyl-2-pentanone (MIBK) | | | 100 | 95.02 | | ug/L | | 95 | 60 - 137 | 1 | 21 |
| Chloromethane | | | 20.0 | 18.07 | | ug/L | | 90 | 33 - 150 | 6 | 20 |
| cis-1,2-Dichloroethene | | | 20.0 | 19.41 | | ug/L | | 97 | 70 - 130 | 0 | 15 |
| cis-1,3-Dichloropropene | | | 20.0 | 19.15 | | ug/L | | 96 | 70 - 133 | 2 | 15 |
| Dibromomethane | | | 20.0 | 17.98 | | ug/L | | 90 | 70 - 130 | 0 | 14 |
| Dichlorodifluoromethane | | | 20.0 | 17.60 | | ug/L | | 88 | 48 - 150 | 6 | 16 |
| Ethylbenzene | | | 20.0 | 18.55 | | ug/L | | 93 | 70 - 130 | 3 | 12 |
| Hexachlorobutadiene | | | 20.0 | 18.61 | | ug/L | | 93 | 70 - 138 | 0 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-387924/4**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 18.28 | | ug/L | | 91 | 70 - 131 | 3 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.79 | | ug/L | | 104 | 70 - 130 | 1 | 13 |
| Methyl tert-butyl ether | 20.0 | 17.26 | | ug/L | | 86 | 70 - 130 | 1 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.04 | | ug/L | | 110 | 69 - 131 | 0 | 15 |
| Methylene Chloride | 20.0 | 19.33 | | ug/L | | 97 | 70 - 130 | 1 | 15 |
| Naphthalene | 20.0 | 16.32 | | ug/L | | 82 | 54 - 150 | 1 | 15 |
| n-Butylbenzene | 20.0 | 21.10 | | ug/L | | 106 | 68 - 137 | 3 | 14 |
| N-Propylbenzene | 20.0 | 21.02 | | ug/L | | 105 | 70 - 134 | 3 | 14 |
| p-Isopropyltoluene | 20.0 | 20.47 | | ug/L | | 102 | 66 - 130 | 2 | 13 |
| sec-Butylbenzene | 20.0 | 20.56 | | ug/L | | 103 | 70 - 135 | 3 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.20 | | ug/L | | 86 | 46 - 150 | 1 | 16 |
| Styrene | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.50 | | ug/L | | 87 | 58 - 147 | 2 | 15 |
| tert-Butylbenzene | 20.0 | 20.22 | | ug/L | | 101 | 70 - 130 | 4 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 16.77 | | ug/L | | 84 | 70 - 135 | 2 | 15 |
| Tetrachloroethene | 20.0 | 17.72 | | ug/L | | 89 | 70 - 130 | 4 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 19.63 | | ug/L | | 98 | 70 - 130 | 0 | 13 |
| Toluene | 20.0 | 19.13 | | ug/L | | 96 | 70 - 130 | 2 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 19.46 | | ug/L | | 97 | 70 - 130 | 1 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.92 | | ug/L | | 105 | 70 - 131 | 0 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 18.02 | | ug/L | | 90 | 63 - 142 | 1 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.43 | | ug/L | | 102 | 70 - 130 | 4 | 13 |
| Trichloroethene | 20.0 | 17.42 | | ug/L | | 87 | 70 - 130 | 4 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.32 | | ug/L | | 122 | 70 - 130 | 2 | 14 |
| Trichlorofluoromethane | 20.0 | 17.29 | | ug/L | | 86 | 59 - 150 | 2 | 22 |
| Vinyl chloride | 20.0 | 18.23 | | ug/L | | 91 | 57 - 137 | 5 | 15 |
| Xylenes, Total | 40.0 | 37.86 | | ug/L | | 95 | 70 - 132 | 3 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-115573-C-14 MS**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2484 | | ug/L | | 99 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2350 | | ug/L | | 94 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 12500 | 11670 | | ug/L | | 93 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2466 | | ug/L | | 99 | 70 - 130 |
| 2-Chlorotoluene | ND | | 2500 | 2942 | | ug/L | | 118 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2551 | | ug/L | | 102 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2496 | | ug/L | | 100 | 70 - 130 |
| 4-Chlorotoluene | ND | | 2500 | 2692 | | ug/L | | 108 | 69 - 138 |
| 1,1-Dichloroethane | 649 | | 2500 | 3167 | | ug/L | | 101 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115573-C-14 MS**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 70.4 | | 2500 | 2337 | | ug/L | | 91 | 64 - 136 |
| Acetone | ND | | 12500 | 11310 | | ug/L | | 90 | 39 - 150 |
| Benzene | ND | | 2500 | 2336 | | ug/L | | 93 | 55 - 147 |
| 1,1-Dichloroethene | 13400 | E | 2500 | 11700 | E 4 | ug/L | | -69 | 54 - 150 |
| Bromobenzene | ND | | 2500 | 2532 | | ug/L | | 101 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 2500 | 2444 | | ug/L | | 98 | 67 - 130 |
| Bromochloromethane | ND | | 2500 | 2263 | | ug/L | | 91 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 2500 | 2368 | | ug/L | | 95 | 70 - 130 |
| Bromodichloromethane | ND | | 2500 | 2260 | | ug/L | | 90 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 2500 | 2154 | | ug/L | | 86 | 50 - 146 |
| Bromoform | ND | | 2500 | 2438 | | ug/L | | 98 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 2500 | 2350 | | ug/L | | 94 | 54 - 150 |
| Bromomethane | ND | | 2500 | 1781 | | ug/L | | 71 | 30 - 150 |
| Carbon disulfide | ND | | 2500 | 2813 | | ug/L | | 113 | 35 - 150 |
| Diisopropyl ether | ND | | 2500 | 2232 | | ug/L | | 89 | 56 - 142 |
| Carbon tetrachloride | ND | | 2500 | 2352 | | ug/L | | 94 | 56 - 150 |
| Chlorobenzene | ND | | 2500 | 2494 | | ug/L | | 100 | 70 - 130 |
| 2-Hexanone | ND | | 12500 | 10940 | | ug/L | | 87 | 44 - 150 |
| Chlorodibromomethane | ND | | 2500 | 2649 | | ug/L | | 106 | 66 - 140 |
| Chloroethane | ND | | 2500 | 2443 | | ug/L | | 98 | 58 - 141 |
| Chloroform | ND | | 2500 | 2380 | | ug/L | | 95 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 11110 | | ug/L | | 89 | 50 - 140 |
| Chloromethane | ND | | 2500 | 2475 | | ug/L | | 99 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2481 | | ug/L | | 99 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2419 | | ug/L | | 97 | 70 - 133 |
| Dibromomethane | ND | | 2500 | 2176 | | ug/L | | 87 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 2500 | 2342 | | ug/L | | 94 | 10 - 150 |
| Ethylbenzene | ND | | 2500 | 2338 | | ug/L | | 94 | 65 - 139 |
| Hexachlorobutadiene | ND | | 2500 | 2360 | | ug/L | | 94 | 61 - 141 |
| Isopropylbenzene | ND | | 2500 | 2338 | | ug/L | | 94 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2635 | | ug/L | | 105 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 2500 | 2038 | | ug/L | | 82 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2719 | | ug/L | | 109 | 56 - 145 |
| Methylene Chloride | ND | | 2500 | 2469 | | ug/L | | 99 | 64 - 130 |
| Naphthalene | ND | | 2500 | 2112 | | ug/L | | 84 | 32 - 150 |
| n-Butylbenzene | ND | | 2500 | 2736 | | ug/L | | 109 | 61 - 141 |
| N-Propylbenzene | ND | | 2500 | 2665 | | ug/L | | 105 | 53 - 150 |
| p-Isopropyltoluene | ND | | 2500 | 2610 | | ug/L | | 104 | 66 - 137 |
| sec-Butylbenzene | ND | | 2500 | 2647 | | ug/L | | 106 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2026 | | ug/L | | 81 | 36 - 150 |
| Styrene | ND | | 2500 | 2446 | | ug/L | | 98 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2162 | | ug/L | | 86 | 47 - 147 |
| tert-Butylbenzene | ND | | 2500 | 2654 | | ug/L | | 106 | 70 - 138 |
| 1,1,1-Trichloroethane | 5280 | F1 | 2500 | 6077 | F1 | ug/L | | 32 | 68 - 144 |
| Tetrachloroethene | ND | | 2500 | 2303 | | ug/L | | 92 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2426 | | ug/L | | 95 | 70 - 130 |
| Toluene | ND | | 2500 | 2376 | | ug/L | | 95 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2549 | | ug/L | | 102 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115573-C-14 MS**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 2500 | 2553 | | ug/L | | 102 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2270 | | ug/L | | 91 | 63 - 142 |
| 1,2,4-Trimethylbenzene | ND | | 2500 | 2575 | | ug/L | | 101 | 64 - 136 |
| Trichloroethene | 376 | | 2500 | 2570 | | ug/L | | 88 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 3076 | | ug/L | | 122 | 69 - 139 |
| Trichlorofluoromethane | ND | | 2500 | 2409 | | ug/L | | 96 | 44 - 150 |
| Vinyl chloride | ND | | 2500 | 2475 | | ug/L | | 99 | 57 - 150 |
| Xylenes, Total | ND | | 5000 | 4741 | | ug/L | | 95 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 490-115573-C-14 MSD**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2576 | | ug/L | | 103 | 38 - 138 | 4 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2377 | | ug/L | | 95 | 65 - 137 | 1 | 21 |
| 2-Butanone (MEK) | ND | | 12500 | 12310 | | ug/L | | 98 | 50 - 143 | 5 | 28 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2485 | | ug/L | | 99 | 70 - 130 | 1 | 15 |
| 2-Chlorotoluene | ND | | 2500 | 2983 | | ug/L | | 119 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2569 | | ug/L | | 103 | 68 - 131 | 1 | 14 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2516 | | ug/L | | 101 | 70 - 130 | 1 | 14 |
| 4-Chlorotoluene | ND | | 2500 | 2673 | | ug/L | | 107 | 69 - 138 | 1 | 15 |
| 1,1-Dichloroethane | 649 | | 2500 | 3175 | | ug/L | | 101 | 61 - 139 | 0 | 23 |
| 1,2-Dichloroethane | 70.4 | | 2500 | 2339 | | ug/L | | 91 | 64 - 136 | 0 | 22 |
| Acetone | ND | | 12500 | 10990 | | ug/L | | 88 | 39 - 150 | 3 | 28 |
| Benzene | ND | | 2500 | 2338 | | ug/L | | 94 | 55 - 147 | 0 | 22 |
| 1,1-Dichloroethene | 13400 | E | 2500 | 11590 | E 4 | ug/L | | -73 | 54 - 150 | 1 | 24 |
| Bromobenzene | ND | | 2500 | 2512 | | ug/L | | 100 | 60 - 133 | 1 | 18 |
| 1,2-Dichloropropane | ND | | 2500 | 2425 | | ug/L | | 97 | 67 - 130 | 1 | 19 |
| Bromochloromethane | ND | | 2500 | 2282 | | ug/L | | 91 | 59 - 132 | 1 | 21 |
| 1,3-Dichloropropane | ND | | 2500 | 2428 | | ug/L | | 97 | 70 - 130 | 3 | 17 |
| Bromodichloromethane | ND | | 2500 | 2286 | | ug/L | | 91 | 70 - 140 | 1 | 196 |
| 2,2-Dichloropropane | ND | | 2500 | 2205 | | ug/L | | 88 | 50 - 146 | 2 | 20 |
| Bromoform | ND | | 2500 | 2484 | | ug/L | | 99 | 53 - 150 | 2 | 20 |
| 1,1-Dichloropropene | ND | | 2500 | 2397 | | ug/L | | 96 | 54 - 150 | 2 | 24 |
| Bromomethane | ND | | 2500 | 2023 | | ug/L | | 81 | 30 - 150 | 13 | 44 |
| Carbon disulfide | ND | | 2500 | 2728 | | ug/L | | 109 | 35 - 150 | 3 | 34 |
| Diisopropyl ether | ND | | 2500 | 2264 | | ug/L | | 91 | 56 - 142 | 1 | 22 |
| Carbon tetrachloride | ND | | 2500 | 2404 | | ug/L | | 96 | 56 - 150 | 2 | 18 |
| Chlorobenzene | ND | | 2500 | 2488 | | ug/L | | 100 | 70 - 130 | 0 | 15 |
| 2-Hexanone | ND | | 12500 | 11270 | | ug/L | | 90 | 44 - 150 | 3 | 21 |
| Chlorodibromomethane | ND | | 2500 | 2673 | | ug/L | | 107 | 66 - 140 | 1 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115573-C-14 MSD**
**Matrix: Water**
**Analysis Batch: 387924**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 2500 | 2412 | | ug/L | | 96 | 58 - 141 | 1 | 31 |
| Chloroform | ND | | 2500 | 2367 | | ug/L | | 94 | 66 - 138 | 1 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 11540 | | ug/L | | 92 | 50 - 140 | 4 | 24 |
| Chloromethane | ND | | 2500 | 2436 | | ug/L | | 97 | 10 - 150 | 2 | 43 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2513 | | ug/L | | 101 | 68 - 131 | 1 | 21 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2466 | | ug/L | | 99 | 70 - 133 | 2 | 19 |
| Dibromomethane | ND | | 2500 | 2201 | | ug/L | | 88 | 70 - 130 | 1 | 19 |
| Dichlorodifluoromethane | ND | | 2500 | 2296 | | ug/L | | 92 | 10 - 150 | 2 | 50 |
| Ethylbenzene | ND | | 2500 | 2351 | | ug/L | | 94 | 65 - 139 | 1 | 18 |
| Hexachlorobutadiene | ND | | 2500 | 2454 | | ug/L | | 98 | 61 - 141 | 4 | 26 |
| Isopropylbenzene | ND | | 2500 | 2360 | | ug/L | | 94 | 70 - 137 | 1 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2638 | | ug/L | | 106 | 70 - 131 | 0 | 16 |
| Methyl tert-butyl ether | ND | | 2500 | 2103 | | ug/L | | 84 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2736 | | ug/L | | 109 | 56 - 145 | 1 | 19 |
| Methylene Chloride | ND | | 2500 | 2454 | | ug/L | | 98 | 64 - 130 | 1 | 22 |
| Naphthalene | ND | | 2500 | 2254 | | ug/L | | 90 | 32 - 150 | 6 | 40 |
| n-Butylbenzene | ND | | 2500 | 2782 | | ug/L | | 111 | 61 - 141 | 2 | 17 |
| N-Propylbenzene | ND | | 2500 | 2688 | | ug/L | | 106 | 53 - 150 | 1 | 18 |
| p-Isopropyltoluene | ND | | 2500 | 2659 | | ug/L | | 106 | 66 - 137 | 2 | 16 |
| sec-Butylbenzene | ND | | 2500 | 2691 | | ug/L | | 108 | 55 - 136 | 2 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2216 | | ug/L | | 89 | 36 - 150 | 9 | 43 |
| Styrene | ND | | 2500 | 2475 | | ug/L | | 99 | 70 - 130 | 1 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2298 | | ug/L | | 92 | 47 - 147 | 6 | 24 |
| tert-Butylbenzene | ND | | 2500 | 2728 | | ug/L | | 109 | 70 - 138 | 3 | 17 |
| 1,1,1-Trichloroethane | 5280 | F1 | 2500 | 6031 | F1 | ug/L | | 30 | 68 - 144 | 1 | 17 |
| Tetrachloroethene | ND | | 2500 | 2349 | | ug/L | | 94 | 57 - 138 | 2 | 17 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2447 | | ug/L | | 96 | 70 - 130 | 1 | 18 |
| Toluene | ND | | 2500 | 2395 | | ug/L | | 96 | 64 - 136 | 1 | 18 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2526 | | ug/L | | 101 | 59 - 143 | 1 | 25 |
| 1,2,3-Trichloropropane | ND | | 2500 | 2573 | | ug/L | | 103 | 65 - 131 | 1 | 19 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2323 | | ug/L | | 93 | 63 - 142 | 2 | 18 |
| 1,2,4-Trimethylbenzene | ND | | 2500 | 2599 | | ug/L | | 102 | 64 - 136 | 1 | 18 |
| Trichloroethene | 376 | | 2500 | 2570 | | ug/L | | 88 | 63 - 135 | 0 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 3106 | | ug/L | | 124 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 2500 | 2390 | | ug/L | | 96 | 44 - 150 | 1 | 32 |
| Vinyl chloride | ND | | 2500 | 2495 | | ug/L | | 100 | 57 - 150 | 1 | 37 |
| Xylenes, Total | ND | | 5000 | 4802 | | ug/L | | 96 | 69 - 132 | 1 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/20/16 15:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/20/16 15:08* | *1* |

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.99 | | ug/L | | 100 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.28 | | ug/L | | 101 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 105.4 | | ug/L | | 105 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 21.29 | | ug/L | | 106 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 26.19 | * | ug/L | | 131 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 21.90 | | ug/L | | 109 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 21.79 | | ug/L | | 109 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 23.53 | | ug/L | | 118 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 21.84 | | ug/L | | 109 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 19.28 | | ug/L | | 96 | 70 - 130 |
| Acetone | 100 | 105.1 | | ug/L | | 105 | 39 - 150 |
| Benzene | 20.0 | 20.04 | | ug/L | | 100 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 20.67 | | ug/L | | 103 | 70 - 132 |
| Bromobenzene | 20.0 | 21.65 | | ug/L | | 108 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 21.14 | | ug/L | | 106 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.70 | | ug/L | | 94 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 20.84 | | ug/L | | 104 | 70 - 130 |
| Bromodichloromethane | 20.0 | 19.01 | | ug/L | | 95 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 19.70 | | ug/L | | 99 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.64 | | ug/L | | 103 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 20.40 | | ug/L | | 102 | 70 - 130 |
| Bromomethane | 20.0 | 14.67 | | ug/L | | 73 | 53 - 150 |
| Carbon disulfide | 20.0 | 23.29 | | ug/L | | 116 | 64 - 135 |
| Diisopropyl ether | 20.0 | 19.76 | | ug/L | | 99 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 19.58 | | ug/L | | 98 | 70 - 147 |
| Chlorobenzene | 20.0 | 21.59 | | ug/L | | 108 | 70 - 130 |
| 2-Hexanone | 100 | 100.6 | | ug/L | | 101 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 22.17 | | ug/L | | 111 | 70 - 133 |
| Chloroethane | 20.0 | 20.58 | | ug/L | | 103 | 60 - 138 |
| Chloroform | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 101.4 | | ug/L | | 101 | 60 - 137 |
| Chloromethane | 20.0 | 20.03 | | ug/L | | 100 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 21.04 | | ug/L | | 105 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 20.53 | | ug/L | | 103 | 70 - 133 |
| Dibromomethane | 20.0 | 19.09 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.60 | | ug/L | | 88 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.90 | | ug/L | | 99 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 20.61 | | ug/L | | 103 | 70 - 138 |
| Isopropylbenzene | 20.0 | 19.49 | | ug/L | | 97 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.20 | | ug/L | | 106 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 18.33 | | ug/L | | 92 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 23.58 | | ug/L | | 118 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 |
| Naphthalene | 20.0 | 18.07 | | ug/L | | 90 | 54 - 150 |
| n-Butylbenzene | 20.0 | 23.89 | | ug/L | | 119 | 68 - 137 |
| N-Propylbenzene | 20.0 | 23.51 | | ug/L | | 118 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 22.89 | | ug/L | | 114 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 23.09 | | ug/L | | 115 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 |
| Styrene | 20.0 | 20.75 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.81 | | ug/L | | 94 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 22.98 | | ug/L | | 115 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 18.95 | | ug/L | | 95 | 70 - 135 |
| Tetrachloroethene | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.96 | | ug/L | | 105 | 70 - 130 |
| Toluene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 21.56 | | ug/L | | 108 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.47 | | ug/L | | 107 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 19.66 | | ug/L | | 98 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.61 | | ug/L | | 113 | 70 - 130 |
| Trichloroethene | 20.0 | 19.31 | | ug/L | | 97 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 20.12 | | ug/L | | 101 | 59 - 150 |
| Vinyl chloride | 20.0 | 20.64 | | ug/L | | 103 | 57 - 137 |
| Xylenes, Total | 40.0 | 40.30 | | ug/L | | 101 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 110 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 93 | | 70 - 130 |
| Toluene-d8 (Surr) | 101 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 20.67 | | ug/L | | 103 | 45 - 138 | 3 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.43 | | ug/L | | 102 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 107.8 | | ug/L | | 108 | 55 - 143 | 2 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 21.39 | | ug/L | | 107 | 70 - 130 | 0 | 12 |
| 2-Chlorotoluene | 20.0 | 26.27 | * | ug/L | | 131 | 70 - 130 | 0 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 21.92 | | ug/L | | 110 | 70 - 130 | 0 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 21.88 | | ug/L | | 109 | 70 - 130 | 0 | 12 |
| 4-Chlorotoluene | 20.0 | 23.38 | | ug/L | | 117 | 70 - 130 | 1 | 15 |
| 1,1-Dichloroethane | 20.0 | 23.16 | | ug/L | | 116 | 70 - 130 | 6 | 17 |
| 1,2-Dichloroethane | 20.0 | 20.06 | | ug/L | | 100 | 70 - 130 | 4 | 13 |
| Acetone | 100 | 103.4 | | ug/L | | 103 | 39 - 150 | 2 | 23 |
| Benzene | 20.0 | 20.78 | | ug/L | | 104 | 70 - 130 | 4 | 12 |
| 1,1-Dichloroethene | 20.0 | 21.75 | | ug/L | | 109 | 70 - 132 | 5 | 20 |
| Bromobenzene | 20.0 | 21.16 | | ug/L | | 106 | 70 - 130 | 2 | 16 |
| 1,2-Dichloropropane | 20.0 | 21.94 | | ug/L | | 110 | 70 - 130 | 4 | 15 |
| Bromochloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 5 | 16 |
| 1,3-Dichloropropane | 20.0 | 20.80 | | ug/L | | 104 | 70 - 130 | 0 | 12 |
| Bromodichloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 3 | 14 |
| 2,2-Dichloropropane | 20.0 | 20.29 | | ug/L | | 101 | 60 - 143 | 3 | 20 |
| Bromoform | 20.0 | 21.58 | | ug/L | | 108 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 | 3 | 16 |
| Bromomethane | 20.0 | 15.79 | | ug/L | | 79 | 53 - 150 | 7 | 19 |
| Carbon disulfide | 20.0 | 24.04 | | ug/L | | 120 | 64 - 135 | 3 | 16 |
| Diisopropyl ether | 20.0 | 20.69 | | ug/L | | 103 | 66 - 142 | 5 | 14 |
| Carbon tetrachloride | 20.0 | 20.59 | | ug/L | | 103 | 70 - 147 | 5 | 16 |
| Chlorobenzene | 20.0 | 21.82 | | ug/L | | 109 | 70 - 130 | 1 | 12 |
| 2-Hexanone | 100 | 100.3 | | ug/L | | 100 | 54 - 142 | 0 | 17 |
| Chlorodibromomethane | 20.0 | 22.38 | | ug/L | | 112 | 70 - 133 | 1 | 13 |
| Chloroethane | 20.0 | 21.71 | | ug/L | | 109 | 60 - 138 | 5 | 15 |
| Chloroform | 20.0 | 20.97 | | ug/L | | 105 | 70 - 130 | 3 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 103.4 | | ug/L | | 103 | 60 - 137 | 2 | 21 |
| Chloromethane | 20.0 | 21.02 | | ug/L | | 105 | 33 - 150 | 5 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 22.50 | | ug/L | | 113 | 70 - 130 | 7 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 21.46 | | ug/L | | 107 | 70 - 133 | 4 | 15 |
| Dibromomethane | 20.0 | 19.80 | | ug/L | | 99 | 70 - 130 | 4 | 14 |
| Dichlorodifluoromethane | 20.0 | 19.62 | | ug/L | | 98 | 48 - 150 | 11 | 16 |
| Ethylbenzene | 20.0 | 20.69 | | ug/L | | 103 | 70 - 130 | 4 | 12 |
| Hexachlorobutadiene | 20.0 | 21.00 | | ug/L | | 105 | 70 - 138 | 2 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | | | 20.0 | 20.55 | | ug/L | | 103 | 70 - 131 | 5 | 13 |
| 1,1,1,2-Tetrachloroethane | | | 20.0 | 22.24 | | ug/L | | 111 | 70 - 130 | 5 | 13 |
| Methyl tert-butyl ether | | | 20.0 | 18.93 | | ug/L | | 95 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | | | 20.0 | 23.67 | | ug/L | | 118 | 69 - 131 | 0 | 15 |
| Methylene Chloride | | | 20.0 | 22.07 | | ug/L | | 110 | 70 - 130 | 11 | 15 |
| Naphthalene | | | 20.0 | 17.65 | | ug/L | | 88 | 54 - 150 | 2 | 15 |
| n-Butylbenzene | | | 20.0 | 24.40 | | ug/L | | 122 | 68 - 137 | 2 | 14 |
| N-Propylbenzene | | | 20.0 | 23.61 | | ug/L | | 118 | 70 - 134 | 0 | 14 |
| p-Isopropyltoluene | | | 20.0 | 23.00 | | ug/L | | 115 | 66 - 130 | 0 | 13 |
| sec-Butylbenzene | | | 20.0 | 23.33 | | ug/L | | 117 | 70 - 135 | 1 | 14 |
| 1,2,3-Trichlorobenzene | | | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 | 0 | 16 |
| Styrene | | | 20.0 | 21.37 | | ug/L | | 107 | 70 - 130 | 3 | 12 |
| 1,2,4-Trichlorobenzene | | | 20.0 | 18.86 | | ug/L | | 94 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | | | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| 1,1,1-Trichloroethane | | | 20.0 | 19.45 | | ug/L | | 97 | 70 - 135 | 3 | 15 |
| Tetrachloroethene | | | 20.0 | 19.75 | | ug/L | | 99 | 70 - 130 | 2 | 17 |
| 1,1,2-Trichloroethane | | | 20.0 | 21.09 | | ug/L | | 105 | 70 - 130 | 1 | 13 |
| Toluene | | | 20.0 | 20.90 | | ug/L | | 104 | 70 - 130 | 1 | 13 |
| trans-1,2-Dichloroethene | | | 20.0 | 22.49 | | ug/L | | 112 | 70 - 130 | 4 | 15 |
| 1,2,3-Trichloropropane | | | 20.0 | 22.15 | | ug/L | | 111 | 70 - 131 | 3 | 14 |
| trans-1,3-Dichloropropene | | | 20.0 | 19.56 | | ug/L | | 98 | 63 - 142 | 0 | 13 |
| 1,2,4-Trimethylbenzene | | | 20.0 | 22.60 | | ug/L | | 113 | 70 - 130 | 0 | 13 |
| Trichloroethene | | | 20.0 | 20.22 | | ug/L | | 101 | 70 - 130 | 5 | 14 |
| 1,3,5-Trimethylbenzene | | | 20.0 | 23.07 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| Trichlorofluoromethane | | | 20.0 | 19.99 | | ug/L | | 100 | 59 - 150 | 1 | 22 |
| Vinyl chloride | | | 20.0 | 21.16 | | ug/L | | 106 | 57 - 137 | 3 | 15 |
| Xylenes, Total | | | 40.0 | 41.51 | | ug/L | | 104 | 70 - 132 | 3 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116230-F-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2561 | | ug/L | | 102 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2425 | | ug/L | | 97 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 12500 | 11740 | | ug/L | | 94 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 70 - 130 |
| 2-Chlorotoluene | ND | * | 2500 | 3139 | | ug/L | | 126 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2647 | | ug/L | | 106 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 130 |
| 4-Chlorotoluene | ND | | 2500 | 2816 | | ug/L | | 113 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 2500 | 2819 | | ug/L | | 113 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-F-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 2500 | 2418 | | ug/L | | 97 | 64 - 136 |
| Acetone | ND | | 12500 | 10730 | | ug/L | | 86 | 39 - 150 |
| Benzene | 356 | | 2500 | 2786 | | ug/L | | 97 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 2500 | 2696 | | ug/L | | 108 | 54 - 150 |
| Bromobenzene | ND | | 2500 | 2611 | | ug/L | | 104 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 2500 | 2622 | | ug/L | | 105 | 67 - 130 |
| Bromochloromethane | ND | | 2500 | 2402 | | ug/L | | 96 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 2500 | 2529 | | ug/L | | 101 | 70 - 130 |
| Bromodichloromethane | ND | | 2500 | 2411 | | ug/L | | 96 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 2500 | 2419 | | ug/L | | 97 | 50 - 146 |
| Bromoform | ND | | 2500 | 2499 | | ug/L | | 100 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 2500 | 2564 | | ug/L | | 103 | 54 - 150 |
| Bromomethane | ND | | 2500 | 2458 | | ug/L | | 98 | 30 - 150 |
| Carbon disulfide | ND | | 2500 | 3010 | | ug/L | | 120 | 35 - 150 |
| Diisopropyl ether | ND | | 2500 | 2389 | | ug/L | | 96 | 56 - 142 |
| Carbon tetrachloride | ND | | 2500 | 2546 | | ug/L | | 102 | 56 - 150 |
| Chlorobenzene | ND | | 2500 | 2614 | | ug/L | | 105 | 70 - 130 |
| 2-Hexanone | ND | | 12500 | 11860 | | ug/L | | 95 | 44 - 150 |
| Chlorodibromomethane | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 140 |
| Chloroethane | ND | | 2500 | 2662 | | ug/L | | 106 | 58 - 141 |
| Chloroform | ND | | 2500 | 2526 | | ug/L | | 101 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12000 | | ug/L | | 96 | 50 - 140 |
| Chloromethane | ND | | 2500 | 2806 | | ug/L | | 112 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2666 | | ug/L | | 106 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2539 | | ug/L | | 102 | 70 - 133 |
| Dibromomethane | ND | | 2500 | 2370 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 2500 | 2458 | | ug/L | | 98 | 10 - 150 |
| Ethylbenzene | 370 | | 2500 | 2821 | | ug/L | | 98 | 65 - 139 |
| Hexachlorobutadiene | ND | | 2500 | 2582 | | ug/L | | 103 | 61 - 141 |
| Isopropylbenzene | ND | | 2500 | 2479 | | ug/L | | 99 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2729 | | ug/L | | 109 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 2500 | 2186 | | ug/L | | 87 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2820 | | ug/L | | 113 | 56 - 145 |
| Methylene Chloride | ND | | 2500 | 2625 | | ug/L | | 105 | 64 - 130 |
| Naphthalene | 4710 | | 2500 | 7086 | | ug/L | | 95 | 32 - 150 |
| n-Butylbenzene | ND | | 2500 | 2951 | | ug/L | | 118 | 61 - 141 |
| N-Propylbenzene | ND | | 2500 | 2804 | | ug/L | | 112 | 53 - 150 |
| p-Isopropyltoluene | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 137 |
| sec-Butylbenzene | ND | | 2500 | 2828 | | ug/L | | 113 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2200 | | ug/L | | 88 | 36 - 150 |
| Styrene | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2402 | | ug/L | | 96 | 47 - 147 |
| tert-Butylbenzene | ND | | 2500 | 2831 | | ug/L | | 113 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2428 | | ug/L | | 97 | 68 - 144 |
| Tetrachloroethene | ND | | 2500 | 2436 | | ug/L | | 97 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2550 | | ug/L | | 102 | 70 - 130 |
| Toluene | ND | | 2500 | 2538 | | ug/L | | 101 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2807 | | ug/L | | 112 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-F-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 2500 | 2653 | | ug/L | | 106 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2419 | | ug/L | | 97 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2796 | | ug/L | | 110 | 64 - 136 |
| Trichloroethene | ND | | 2500 | 2465 | | ug/L | | 98 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2820 | | ug/L | | 112 | 69 - 139 |
| Trichlorofluoromethane | ND | | 2500 | 2629 | | ug/L | | 105 | 44 - 150 |
| Vinyl chloride | ND | | 2500 | 2759 | | ug/L | | 110 | 57 - 150 |
| Xylenes, Total | 273 | | 5000 | 5330 | | ug/L | | 101 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 490-116230-F-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2800 | | ug/L | | 112 | 38 - 138 | 9 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2541 | | ug/L | | 102 | 65 - 137 | 5 | 21 |
| 2-Butanone (MEK) | ND | | 12500 | 12280 | | ug/L | | 98 | 50 - 143 | 4 | 28 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2675 | | ug/L | | 107 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | * | 2500 | 3342 | | ug/L | | 134 | 67 - 138 | 6 | 17 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2781 | | ug/L | | 111 | 68 - 131 | 5 | 14 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2723 | | ug/L | | 109 | 70 - 130 | 2 | 14 |
| 4-Chlorotoluene | ND | | 2500 | 2934 | | ug/L | | 117 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 2500 | 2896 | | ug/L | | 116 | 61 - 139 | 3 | 23 |
| 1,2-Dichloroethane | ND | | 2500 | 2501 | | ug/L | | 100 | 64 - 136 | 3 | 22 |
| Acetone | ND | | 12500 | 10430 | | ug/L | | 83 | 39 - 150 | 3 | 28 |
| Benzene | 356 | | 2500 | 3040 | | ug/L | | 107 | 55 - 147 | 9 | 22 |
| 1,1-Dichloroethene | ND | | 2500 | 2776 | | ug/L | | 111 | 54 - 150 | 3 | 24 |
| Bromobenzene | ND | | 2500 | 2717 | | ug/L | | 109 | 60 - 133 | 4 | 18 |
| 1,2-Dichloropropane | ND | | 2500 | 2675 | | ug/L | | 107 | 67 - 130 | 2 | 19 |
| Bromochloromethane | ND | | 2500 | 2476 | | ug/L | | 99 | 59 - 132 | 3 | 21 |
| 1,3-Dichloropropane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 2 | 17 |
| Bromodichloromethane | ND | | 2500 | 2497 | | ug/L | | 100 | 70 - 140 | 3 | 196 |
| 2,2-Dichloropropane | ND | | 2500 | 2437 | | ug/L | | 97 | 50 - 146 | 1 | 20 |
| Bromoform | ND | | 2500 | 2582 | | ug/L | | 103 | 53 - 150 | 3 | 20 |
| 1,1-Dichloropropene | ND | | 2500 | 2647 | | ug/L | | 106 | 54 - 150 | 3 | 24 |
| Bromomethane | ND | | 2500 | 2533 | | ug/L | | 101 | 30 - 150 | 3 | 44 |
| Carbon disulfide | ND | | 2500 | 3073 | | ug/L | | 123 | 35 - 150 | 2 | 34 |
| Diisopropyl ether | ND | | 2500 | 2468 | | ug/L | | 99 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 2500 | 2688 | | ug/L | | 108 | 56 - 150 | 5 | 18 |
| Chlorobenzene | ND | | 2500 | 2692 | | ug/L | | 108 | 70 - 130 | 3 | 15 |
| 2-Hexanone | ND | | 12500 | 12390 | | ug/L | | 99 | 44 - 150 | 4 | 21 |
| Chlorodibromomethane | ND | | 2500 | 2848 | | ug/L | | 114 | 66 - 140 | 2 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-F-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 2500 | 2693 | | ug/L | | 108 | 58 - 141 | 1 | 31 |
| Chloroform | ND | | 2500 | 2581 | | ug/L | | 103 | 66 - 138 | 2 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12700 | | ug/L | | 102 | 50 - 140 | 6 | 24 |
| Chloromethane | ND | | 2500 | 2935 | | ug/L | | 117 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2715 | | ug/L | | 108 | 68 - 131 | 2 | 21 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 133 | 5 | 19 |
| Dibromomethane | ND | | 2500 | 2426 | | ug/L | | 97 | 70 - 130 | 2 | 19 |
| Dichlorodifluoromethane | ND | | 2500 | 2510 | | ug/L | | 100 | 10 - 150 | 2 | 50 |
| Ethylbenzene | 370 | | 2500 | 2884 | | ug/L | | 101 | 65 - 139 | 2 | 18 |
| Hexachlorobutadiene | ND | | 2500 | 2743 | | ug/L | | 110 | 61 - 141 | 6 | 26 |
| Isopropylbenzene | ND | | 2500 | 2562 | | ug/L | | 102 | 70 - 137 | 3 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2814 | | ug/L | | 113 | 70 - 131 | 3 | 16 |
| Methyl tert-butyl ether | ND | | 2500 | 2259 | | ug/L | | 90 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2931 | | ug/L | | 117 | 56 - 145 | 4 | 19 |
| Methylene Chloride | ND | | 2500 | 2671 | | ug/L | | 107 | 64 - 130 | 2 | 22 |
| Naphthalene | 4710 | | 2500 | 7439 | | ug/L | | 109 | 32 - 150 | 5 | 40 |
| n-Butylbenzene | ND | | 2500 | 3097 | | ug/L | | 124 | 61 - 141 | 5 | 17 |
| N-Propylbenzene | ND | | 2500 | 2933 | | ug/L | | 117 | 53 - 150 | 4 | 18 |
| p-Isopropyltoluene | ND | | 2500 | 2917 | | ug/L | | 117 | 66 - 137 | 4 | 16 |
| sec-Butylbenzene | ND | | 2500 | 2945 | | ug/L | | 118 | 55 - 136 | 4 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2452 | | ug/L | | 98 | 36 - 150 | 11 | 43 |
| Styrene | ND | | 2500 | 2636 | | ug/L | | 105 | 70 - 130 | 2 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 47 - 147 | 7 | 24 |
| tert-Butylbenzene | ND | | 2500 | 2953 | | ug/L | | 118 | 70 - 138 | 4 | 17 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2503 | | ug/L | | 100 | 68 - 144 | 3 | 17 |
| Tetrachloroethene | ND | | 2500 | 2525 | | ug/L | | 101 | 57 - 138 | 4 | 17 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 1 | 18 |
| Toluene | ND | | 2500 | 2628 | | ug/L | | 104 | 64 - 136 | 3 | 18 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2854 | | ug/L | | 114 | 59 - 143 | 2 | 25 |
| 1,2,3-Trichloropropane | ND | | 2500 | 2759 | | ug/L | | 110 | 65 - 131 | 4 | 19 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2517 | | ug/L | | 101 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2919 | | ug/L | | 114 | 64 - 136 | 4 | 18 |
| Trichloroethene | ND | | 2500 | 2519 | | ug/L | | 100 | 63 - 135 | 2 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2802 | | ug/L | | 111 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 2500 | 2665 | | ug/L | | 107 | 44 - 150 | 1 | 32 |
| Vinyl chloride | ND | | 2500 | 2770 | | ug/L | | 111 | 57 - 150 | 0 | 37 |
| Xylenes, Total | 273 | | 5000 | 5492 | | ug/L | | 104 | 69 - 132 | 3 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 490-387414/3**
**Matrix: Water**
**Analysis Batch: 387414**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | | 1.00 | | mg/L | | | 11/17/16 05:34 | 1 |

**Lab Sample ID: LCS 490-387414/4**
**Matrix: Water**
**Analysis Batch: 387414**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.811 | | mg/L | | 98 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387414/5**
**Matrix: Water**
**Analysis Batch: 387414**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.833 | | mg/L | | 98 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 490-116219-1 MS**
**Matrix: Water**
**Analysis Batch: 387414**

**Client Sample ID: MW-5**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 2.74 | | 2.00 | 4.900 | | mg/L | | 108 | 80 - 120 | | |

**Lab Sample ID: 490-116219-6 MS**
**Matrix: Water**
**Analysis Batch: 387414**

**Client Sample ID: MW-24**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 16.1 | | 2.00 | 16.52 | 4 | mg/L | | 22 | 80 - 120 | | |

**Lab Sample ID: MB 490-387416/3**
**Matrix: Water**
**Analysis Batch: 387416**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/17/16 05:34 | 1 |

**Lab Sample ID: LCS 490-387416/4**
**Matrix: Water**
**Analysis Batch: 387416**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9603 | | mg/L | | 96 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387416/5**
**Matrix: Water**
**Analysis Batch: 387416**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9643 | | mg/L | | 96 | 90 - 110 | 0 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Lab Sample ID: 490-116219-1 MS**
**Matrix: Water**
**Analysis Batch: 387416**

**Client Sample ID: MW-5**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H F1 | 0.200 | 0.2912 | F1 | mg/L | | 146 | 80 - 120 |

**Lab Sample ID: 490-116219-6 MS**
**Matrix: Water**
**Analysis Batch: 387416**

**Client Sample ID: MW-24**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | 0.106 | H | 0.200 | 0.3132 | | mg/L | | 104 | 80 - 120 |

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 490-388719/1-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 02:55 | 1 |

**Lab Sample ID: LCS 490-388719/2-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.5187 | | mg/L | | 104 | 80 - 120 |

**Lab Sample ID: LCSD 490-388719/3-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.5219 | | mg/L | | 104 | 80 - 120 | 1 | 20 |

**Lab Sample ID: 490-116230-A-1-B MS**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.279 | 4 | mg/L | | 94 | 75 - 125 |

**Lab Sample ID: 490-116230-A-1-C MSD**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.364 | 4 | mg/L | | 111 | 75 - 125 | 3 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 490-389505/1-A**
**Matrix: Water**
**Analysis Batch: 390238**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 389505**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/25/16 07:34 | 11/28/16 12:19 | 1 |

**Lab Sample ID: LCS 490-389505/2-A**
**Matrix: Water**
**Analysis Batch: 390238**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 389505**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.4780 | | mg/L | | 96 | 80 - 120 | | |

**Lab Sample ID: 490-116613-A-1-C MS**
**Matrix: Water**
**Analysis Batch: 390238**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9980 | | mg/L | | 92 | 75 - 125 | | |

**Lab Sample ID: 490-116613-A-1-D MSD**
**Matrix: Water**
**Analysis Batch: 390238**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9884 | | mg/L | | 90 | 75 - 125 | 1 | 20 |

## Method: SM 2320B - Alkalinity

**Lab Sample ID: LCS 490-387650/51**
**Matrix: Water**
**Analysis Batch: 387650**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 97.59 | | mg/L | | 98 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387650/59**
**Matrix: Water**
**Analysis Batch: 387650**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 94.85 | | mg/L | | 95 | 90 - 110 | 3 | 20 |

**Lab Sample ID: 490-116211-G-11 DU**
**Matrix: Water**
**Analysis Batch: 387650**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | 38.9 | | | 39.64 | | mg/L | | | | 2 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: LCS 490-389383/30**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 96.59 | | mg/L | | 97 | 90 - 110 |

**Lab Sample ID: LCS 490-389383/7**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 99.63 | | mg/L | | 100 | 90 - 110 |

**Lab Sample ID: LCSD 490-389383/29**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 98.51 | | mg/L | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: LCSD 490-389383/48**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 97.30 | | mg/L | | 97 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116300-E-5 DU**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Alkalinity | 32.7 | | 33.62 | | mg/L | | 3 | 20 |

**Lab Sample ID: 490-116395-L-10 DU**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Alkalinity | ND | | ND | | mg/L | | NC | 20 |

## Method: SM 3500 Fe B - Iron, Ferrous

**Lab Sample ID: MB 490-387397/3**
**Matrix: Water**
**Analysis Batch: 387397**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 0.100 | mg/L | | | 11/16/16 18:29 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Method: SM 3500 Fe B - Iron, Ferrous (Continued)

**Lab Sample ID: LCS 490-387397/4**
**Matrix: Water**
**Analysis Batch: 387397**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ferrous Iron | 1.01 | 1.027 | | mg/L | | 102 | 80 - 120 |

**Lab Sample ID: LCSD 490-387397/5**
**Matrix: Water**
**Analysis Batch: 387397**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 1.01 | 1.003 | | mg/L | | 99 | 80 - 120 | 2 | 20 |

**Lab Sample ID: 490-116208-G-1 DU**
**Matrix: Water**
**Analysis Batch: 387397**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 0.149 | | ND | | mg/L | | NC | 20 |

**Lab Sample ID: MB 490-389051/1**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 0.100 | mg/L | | | 11/22/16 18:59 | 1 |

**Lab Sample ID: LCS 490-389051/2**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ferrous Iron | 1.01 | 0.9490 | | mg/L | | 94 | 80 - 120 |

**Lab Sample ID: LCSD 490-389051/3**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 1.01 | 1.025 | | mg/L | | 101 | 80 - 120 | 8 | 20 |

**Lab Sample ID: 490-116300-D-2 MS**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9420 | | mg/L | | 93 | 75 - 125 |

**Lab Sample ID: 490-116300-D-2 MSD**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9880 | | mg/L | | 98 | 75 - 125 | 5 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Lab Sample ID: 490-116219-6 DU**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: MW-24**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 6.47 | HF | | 6.198 | | mg/L | | | | 4 | 20 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## GC/MS VOA

### Analysis Batch: 387924

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | 8260B | |
| 490-116219-2 | MW-6A | Total/NA | Water | 8260B | |
| 490-116219-3 | MW-18 | Total/NA | Water | 8260B | |
| 490-116219-4 | MW-22 | Total/NA | Water | 8260B | |
| 490-116219-5 | MW-23 | Total/NA | Water | 8260B | |
| 490-116219-6 | MW-24 | Total/NA | Water | 8260B | |
| 490-116219-7 | Trip Blank | Total/NA | Water | 8260B | |
| MB 490-387924/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-387924/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-387924/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-115573-C-14 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 490-115573-C-14 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

### Analysis Batch: 388378

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-2 | MW-6A | Total/NA | Water | 8260B | |
| 490-116219-2 | MW-6A | Total/NA | Water | 8260B | |
| 490-116219-3 | MW-18 | Total/NA | Water | 8260B | |
| 490-116219-4 | MW-22 | Total/NA | Water | 8260B | |
| MB 490-388378/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388378/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388378/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-F-3 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 490-116230-F-3 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

## HPLC/IC

### Analysis Batch: 387414

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | 300.0 | |
| 490-116219-2 | MW-6A | Total/NA | Water | 300.0 | |
| 490-116219-3 | MW-18 | Total/NA | Water | 300.0 | |
| 490-116219-4 | MW-22 | Total/NA | Water | 300.0 | |
| 490-116219-5 | MW-23 | Total/NA | Water | 300.0 | |
| 490-116219-6 | MW-24 | Total/NA | Water | 300.0 | |
| MB 490-387414/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-387414/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387414/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116219-1 MS | MW-5 | Total/NA | Water | 300.0 | |
| 490-116219-6 MS | MW-24 | Total/NA | Water | 300.0 | |

### Analysis Batch: 387416

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | 300.0 | |
| 490-116219-2 | MW-6A | Total/NA | Water | 300.0 | |
| 490-116219-3 | MW-18 | Total/NA | Water | 300.0 | |
| 490-116219-4 | MW-22 | Total/NA | Water | 300.0 | |
| 490-116219-5 | MW-23 | Total/NA | Water | 300.0 | |
| 490-116219-6 | MW-24 | Total/NA | Water | 300.0 | |
| MB 490-387416/3 | Method Blank | Total/NA | Water | 300.0 | |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## HPLC/IC (Continued)

### Analysis Batch: 387416 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 490-387416/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387416/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116219-1 MS | MW-5 | Total/NA | Water | 300.0 | |
| 490-116219-6 MS | MW-24 | Total/NA | Water | 300.0 | |

## Metals

### Prep Batch: 388719

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | 3010A | |
| 490-116219-2 | MW-6A | Total/NA | Water | 3010A | |
| 490-116219-3 | MW-18 | Total/NA | Water | 3010A | |
| 490-116219-4 | MW-22 | Total/NA | Water | 3010A | |
| 490-116219-6 | MW-24 | Total/NA | Water | 3010A | |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 3010A | |
| 490-116230-A-1-B MS | Matrix Spike | Total/NA | Water | 3010A | |
| 490-116230-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Water | 3010A | |

### Prep Batch: 389505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-5 | MW-23 | Total/NA | Water | 3010A | |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 3010A | |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 3010A | |

### Analysis Batch: 389814

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | 6010C | 388719 |
| 490-116219-2 | MW-6A | Total/NA | Water | 6010C | 388719 |
| 490-116219-3 | MW-18 | Total/NA | Water | 6010C | 388719 |
| 490-116219-4 | MW-22 | Total/NA | Water | 6010C | 388719 |
| 490-116219-6 | MW-24 | Total/NA | Water | 6010C | 388719 |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 6010C | 388719 |
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 6010C | 388719 |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 6010C | 388719 |
| 490-116230-A-1-B MS | Matrix Spike | Total/NA | Water | 6010C | 388719 |
| 490-116230-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Water | 6010C | 388719 |

### Analysis Batch: 390238

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-5 | MW-23 | Total/NA | Water | 6010C | 389505 |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 6010C | 389505 |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 6010C | 389505 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## General Chemistry

### Analysis Batch: 387397

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-2 | MW-6A | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-3 | MW-18 | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-4 | MW-22 | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-5 | MW-23 | Total/NA | Water | SM 3500 Fe B | |
| MB 490-387397/3 | Method Blank | Total/NA | Water | SM 3500 Fe B | |
| LCS 490-387397/4 | Lab Control Sample | Total/NA | Water | SM 3500 Fe B | |
| LCSD 490-387397/5 | Lab Control Sample Dup | Total/NA | Water | SM 3500 Fe B | |
| 490-116208-G-1 DU | Duplicate | Total/NA | Water | SM 3500 Fe B | |

### Analysis Batch: 387650

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-1 | MW-5 | Total/NA | Water | SM 2320B | |
| 490-116219-3 | MW-18 | Total/NA | Water | SM 2320B | |
| 490-116219-4 | MW-22 | Total/NA | Water | SM 2320B | |
| LCS 490-387650/51 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCSD 490-387650/59 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116211-G-11 DU | Duplicate | Total/NA | Water | SM 2320B | |

### Analysis Batch: 389051

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-6 | MW-24 | Total/NA | Water | SM 3500 Fe B | |
| MB 490-389051/1 | Method Blank | Total/NA | Water | SM 3500 Fe B | |
| LCS 490-389051/2 | Lab Control Sample | Total/NA | Water | SM 3500 Fe B | |
| LCSD 490-389051/3 | Lab Control Sample Dup | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MS | Matrix Spike | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MSD | Matrix Spike Duplicate | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-6 DU | MW-24 | Total/NA | Water | SM 3500 Fe B | |

### Analysis Batch: 389383

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116219-5 | MW-23 | Total/NA | Water | SM 2320B | |
| 490-116219-6 | MW-24 | Total/NA | Water | SM 2320B | |
| LCS 490-389383/30 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCS 490-389383/7 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCSD 490-389383/29 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| LCSD 490-389383/48 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116300-E-5 DU | Duplicate | Total/NA | Water | SM 2320B | |
| 490-116395-L-10 DU | Duplicate | Total/NA | Water | SM 2320B | |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-5

**Lab Sample ID: 490-116219-1**
**Matrix: Water**
**Date Collected: 11/14/16 12:30**
**Date Received: 11/16/16 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 19:02 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 06:08 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387416 | 11/17/16 06:08 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:29 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 387650 | 11/16/16 22:35 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 387397 | 11/16/16 18:29 | AEC | TAL NSH |

## Client Sample ID: MW-6A

**Lab Sample ID: 490-116219-2**
**Matrix: Water**
**Date Collected: 11/14/16 15:15**
**Date Received: 11/16/16 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 19:28 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 10 | 388378 | 11/20/16 18:12 | AK1 | TAL NSH |
| Total/NA | Analysis | 8260B | | 100 | 388378 | 11/20/16 18:38 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 06:41 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387416 | 11/17/16 06:41 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:34 | RDF | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 387397 | 11/16/16 18:29 | AEC | TAL NSH |

## Client Sample ID: MW-18

**Lab Sample ID: 490-116219-3**
**Matrix: Water**
**Date Collected: 11/14/16 16:03**
**Date Received: 11/16/16 10:25**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 19:54 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 388378 | 11/20/16 15:35 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 07:03 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387416 | 11/17/16 07:03 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:39 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 387650 | 11/16/16 22:48 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 1 | 387397 | 11/16/16 18:29 | AEC | TAL NSH |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Client Sample ID: MW-22
**Date Collected: 11/14/16 11:52**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-4**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 20:20 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 1 | 388378 | 11/20/16 16:01 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 07:25 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387416 | 11/17/16 07:25 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:45 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 387650 | 11/16/16 22:53 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 1 | 387397 | 11/16/16 18:29 | AEC | TAL NSH |

## Client Sample ID: MW-23
**Date Collected: 11/14/16 14:03**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-5**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 20:47 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 07:48 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 10 | 387416 | 11/17/16 07:59 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389505 | 11/25/16 07:59 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390238 | 11/28/16 13:56 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 16:20 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 1 | 387397 | 11/16/16 18:29 | AEC | TAL NSH |

## Client Sample ID: MW-24
**Date Collected: 11/14/16 13:30**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-6**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 21:13 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387414 | 11/17/16 10:57 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387416 | 11/17/16 10:57 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:50 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 12:45 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 5 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: Trip Blank
**Date Collected: 11/14/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116219-7**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 387924 | 11/18/16 18:10 | BBR | TAL NSH |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Method Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL NSH |
| 6010C | Metals (ICP) | SW846 | TAL NSH |
| SM 2320B | Alkalinity | SM | TAL NSH |
| SM 3500 Fe B | Iron, Ferrous | SM | TAL NSH |

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Certification Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110470

TestAmerica Job ID: 490-116219-1

## Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| A2LA | A2LA | | NA: NELAP & A2LA | 12-31-17 |
| A2LA | ISO/IEC 17025 | | 0453.07 | 12-31-17 |
| Alaska (UST) | State Program | 10 | UST-087 | 07-24-17 |
| Arizona | State Program | 9 | AZ0473 | 05-05-17 |
| Arkansas DEQ | State Program | 6 | 88-0737 | 04-25-17 |
| California | State Program | 9 | 2938 | 10-31-16 * |
| Connecticut | State Program | 1 | PH-0220 | 12-31-17 |
| Florida | NELAP | 4 | E87358 | 06-30-17 |
| Georgia | State Program | 4 | N/A | 12-31-17 |
| Illinois | NELAP | 5 | 200010 | 12-09-16 * |
| Iowa | State Program | 7 | 131 | 04-01-18 |
| Kansas | NELAP | 7 | E-10229 | 10-31-17 |
| Kentucky (UST) | State Program | 4 | 19 | 06-30-17 |
| Kentucky (WW) | State Program | 4 | 90038 | 12-31-16 * |
| Louisiana | NELAP | 6 | 30613 | 06-30-17 |
| Maine | State Program | 1 | TN00032 | 11-03-17 |
| Maryland | State Program | 3 | 316 | 03-31-17 |
| Massachusetts | State Program | 1 | M-TN032 | 06-30-17 |
| Minnesota | NELAP | 5 | 047-999-345 | 12-31-16 * |
| Mississippi | State Program | 4 | N/A | 06-30-17 |
| Montana (UST) | State Program | 8 | NA | 02-24-20 |
| Nevada | State Program | 9 | TN00032 | 07-31-17 |
| New Hampshire | NELAP | 1 | 2963 | 10-09-17 |
| New Jersey | NELAP | 2 | TN965 | 06-30-17 |
| New York | NELAP | 2 | 11342 | 03-31-17 |
| North Carolina (WW/SW) | State Program | 4 | 387 | 12-31-16 * |
| North Dakota | State Program | 8 | R-146 | 06-30-17 |
| Ohio VAP | State Program | 5 | CL0033 | 07-10-17 |
| Oklahoma | State Program | 6 | 9412 | 08-31-17 |
| Oregon | NELAP | 10 | TN200001 | 04-27-17 |
| Pennsylvania | NELAP | 3 | 68-00585 | 06-30-17 |
| Rhode Island | State Program | 1 | LAO00268 | 12-30-16 * |
| South Carolina | State Program | 4 | 84009 (001) | 02-18-17 |
| South Carolina (Do Not Use - DW) | State Program | 4 | 84009 (002) | 12-16-17 |
| Tennessee | State Program | 4 | 2008 | 02-23-17 |
| Texas | NELAP | 6 | T104704077 | 08-31-17 |
| USDA | Federal | | P330-13-00306 | 12-01-16 * |
| Utah | NELAP | 8 | TN00032 | 07-31-17 |
| Virginia | NELAP | 3 | 460152 | 06-14-17 |
| Washington | State Program | 10 | C789 | 07-19-17 |
| West Virginia DEP | State Program | 3 | 219 | 02-28-17 |
| Wisconsin | State Program | 5 | 998020430 | 08-31-17 |
| Wyoming (UST) | A2LA | 8 | 453.07 | 12-31-17 |

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

490-116219 Chain of Custody

# COOLER RECEIPT FORM

Cooler Received/Opened On 11/16/2016 @ ~~0920~~ 1025 mm 11.16.16

Time Samples Removed From Cooler 13:40 Time Samples Placed In Storage 1536 (2 Hour Window)

1. Tracking # 2880 (last 4 digits, FedEx) Courier: ___FedEx___

IR Gun ID 17960358 pH Strip Lot HC682567 Chlorine Strip Lot 0611616W

2. Temperature of rep. sample or temp blank when opened: 2.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1- Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) WD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial?

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # 1

I certify that I unloaded the cooler and answered questions 7-14 (intial)

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) PM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) PM

I certify that I attached a label with the unique LIMS number to each container (intial) PM

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES...NO...#

PM 11/16/16

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

# Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

| Client | Project Manager | Date | Chain of Custody Number |
|---|---|---|---|
| DUKE ENERGY (S&ME) | JOHN WHITEHEAD | 11.14.16 | 302117 |
| **Address** S&ME<br>301 ZIMA PARK DR. | **Telephone Number (Area Code)/Fax Number**<br>(864) 574-2360 / 576-8730 | **Lab Number** | **Page** 1 of 1 |
| **City** SPARTANBURG | **State** SC | **Zip Code** 29334 | **Site Contact** S. DACUS | **Lab Contact** CANDACE BONHAM |
| **Project Name and Location (State)**<br>BRAMLETTE ROAD MGP (S.C.) | **Carrier/Waybill Number**<br>FEDEX |
| **Contract/Purchase Order/Quote No.**<br>5 | |

| | Sample I.D. No. and Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed. | Soil | Containers & Preservatives: Unpres. | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | Analysis: 8260 FULL LIST | 2O3/SO4 | ALKALINITY | MANGANESE | FERROUS IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-5 | 11.14.16 | 1230 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 2 | MW-6A | 11.14.16 | 1515 | | X | | | 4 | | 1 | 1 | | | X | X | | X | X |
| 3 | MW-18 | " " | 1603 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 4 | MW-22 | " " | 1152 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 5 | MW-23 | " " | 1403 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 6 | MW-24 | " " | 1330 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |

Special Instructions/ Conditions of Receipt

Project #49001932

Loc: 490
116219

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD

QC Requirements (Specify)

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| 1. Relinquished By | 11/15/16 | 17:43 | 1. Received By | 11/16/16 | 1025 |
| 2. Relinquished By | | | 2. Received By | | |
| 3. Relinquished By | | | 3. Received By | | |

Comments

**DISTRIBUTION:** WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

# ANALYTICAL LABORATORY REQUEST FORM (ARF)

| | |
|---|---|
| *(1) Complete all yellow sections of this form. Move through by striking the "TAB" key.* | |
| *(2) Save the file & e-mail to:* | labcustomer@duke-energy.com |
| *Questions / Problems Call:* | 704-875-5245 |

**Duke Energy Completes and sends ARF to the engineering firm**

## Customer Information

| Your Name | Office Phone | Cell Phone |
|---|---|---|
| John Whitehead | 864-574-2360 | 864-580-1429 |
| **Project Name** (Use Remediation&Decommissioning Site Names) | | Your e-Mail Address |
| Bramlette Rd. MGP | | jwhitehead@smeinc.com |

| Duke Vendor Labs & Contact | Accounting Fields | |
|---|---|---|
| *Test America:* ***Candace.Bonham@testamericainc.com*** | Accounting Type | Specific Accounting |
| *Pace:* ***Kevin.Herring@pacelabs.com*** | Operating Unit | |
| *Acutest:* ***Andreac@accutest.com*** | Project ID | |
| *Prism:* ***Aovercash@prismlabs.com*** | Activity ID | |
| | Account | |
| ***Also send copy to - labcustomer@duke-energy.com*** | | |

**Engineering Firm Completes these sections and sends ARF to one of the Duke Vendor Lab Contacts listed above**

## Sampling Information

| Sampling Personnel / Contractor | Scheduled Sampling Date | Date Sample Kit Needed |
|---|---|---|
| scott dacus/ s&me | Week of 11-14-16 | 10/31/2016 |

**Shipping Address for Kit**

| Name | Phone | Mail Code |
|---|---|---|
| S&ME, Inc. | 864-574-2360 | |
| Street Address - 301 Zima Park Road | State | Zip Code |
| Spartanburg | SC | 29301 |

## Reporting

| Report Due Date | Additional Reports - .pdf file w/ Basic QC and EDD (spreadsheet) is Standard | |
|---|---|---|
| | | |
| Report To (e-Mail Address 1) | Report To (e-Mail Address 2) | Report to (e-Mail Address 3) |
| jwhitehead@smeinc.com | larmstrong@smeinc.com | TimHunsucker@duke-energy.com |

## Project Specifics

| Project Name | Program Type |
|---|---|
| Bramlette Rd. MGP | Groundwater |

| Site, Location or Station | State | Approximate Number of Days Sampling is Scheduled |
|---|---|---|
| Greenville | S.C. | 3 |

Notes, Special Requests, Required Contract Lab to use, etc.

S&ME job number 1264-08-105. If you have any questions, please call John Whitehead.

| Bottles | Matrix | Variables, Methods |
|---|---|---|
| 17 (Includes Field Blank) | GW | EPA 8260 - Full List (Please send unpreserved bottles as per SCDHEC regs.) |
| 16 Samples | GW | Nitrate, Sulfate, Ferrous Iron, Alkalinity |
| 16 Samples | GW | Manganese |
| 1 Sample | W | Trip Blank - EPA 8260 (Full List) |
| | | |
| | | **Please send lab grade water for field blank.** |
| | | |
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| | | |
| | | |
| | | |
| | | |
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| | | |
| | | |
| | | |
| | | |
| | | IMPORTANT: Include QC samples (duplicates) with regular samples no need to separate |

# Login Sample Receipt Checklist

Client: Duke Energy Corporation

Job Number: 490-116219-1

**Login Number: 116219**
**List Number: 1**
**Creator: Ngo, Phiet**

**List Source: TestAmerica Nashville**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | True | |

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**

**Program Manager: Amanda Payne**

**Order ID**
**J16110471**

*Please contact the Program Manager, Amanda Payne, at 980-875-6995 with any questions regarding this report.*

**Sample Number: 2016037099** **MW-1**

Collected Date: 11/15/2016 02:02 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037100** **MW-3**

Collected Date: 11/15/2016 01:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037101** **MW-3D**

Collected Date: 11/15/2016 12:47 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**
**Program Manager: Amanda Payne**

**Order ID**
**J16110471**

**Sample Number: 2016037102** **MW-19**

Collected Date: 11/15/2016 03:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037103** **MW-20**

Collected Date: 11/15/2016 02:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037104** **Trip Blank**

Collected Date: 11/15/2016 Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Program Manager:** **Amanda Payne**
980-875-6995

**Report Authorized By: (Signature)**

Digitally signed by Amanda Payne
Date: 2016.12.06 16:28:09 -05'00'

An EDD has been included with this report.



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-116230-1
Client Project/Site: Bramlett Rd. MGP J16110471

For:
Duke Energy Corporation
13339 Hagers Ferry Road
Huntersville, North Carolina 28078

Attn: Lab Customer

*Authorized for release by:*
*11/30/2016 12:51:06 PM*

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

# Table of Contents

# Sample Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 490-116230-1 | MW-1 | Water | 11/15/16 16:02 | 11/16/16 10:25 |
| 490-116230-2 | MW-3 | Water | 11/15/16 13:27 | 11/16/16 10:25 |
| 490-116230-3 | MW-3D | Water | 11/15/16 12:47 | 11/16/16 10:25 |
| 490-116230-4 | MW-19 | Water | 11/15/16 15:27 | 11/16/16 10:25 |
| 490-116230-5 | MW-20 | Water | 11/15/16 14:27 | 11/16/16 10:25 |
| 490-116230-6 | Trip Blank | Water | 11/15/16 00:01 | 11/16/16 10:25 |

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Job ID: 490-116230-1

**Laboratory: TestAmerica Nashville**

**Narrative**

## CASE NARRATIVE

## Client: Duke Energy Corporation

## Project: Bramlett Rd. MGP J16110471

## Report Number: 490-116230-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Nashville attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

**RECEIPT**
The samples were received on 11/16/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.9 C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4), MW-20 (490-116230-5) and Trip Blank (490-116230-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/19/2016 and 11/20/2016.

2-Chlorotoluene failed the recovery criteria high for LCS 490-388378/3. 2-Chlorotoluene failed the recovery criteria high for LCSD 490-388378/4. Refer to the QC report for details.

Naphthalene failed the recovery criteria high for the MS of sample MW-3DMS (490-116230-3) in batch 490-388100.
Naphthalene failed the recovery criteria high for the MSD of sample MW-3DMSD (490-116230-3) in batch 490-388100. Refer to the QC report for details.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Job ID: 490-116230-1 (Continued)

### Laboratory: TestAmerica Nashville (Continued)

Samples MW-1 (490-116230-1)[10X], MW-3D (490-116230-3)[10X], MW-3D (490-116230-3)[50X], MW-19 (490-116230-4)[10X], MW-19 (490-116230-4)[50X], MW-20 (490-116230-5)[10X] and MW-20 (490-116230-5)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**TOTAL METALS (ICP)**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/22/2016 and 11/25/2016 and analyzed on 11/23/2016, 11/26/2016 and 11/28/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**ALKALINITY**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 11/23/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Sulfate**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

Sulfate failed the recovery criteria high for the MS of sample MW-1MS (490-116230-1) in batch 490-387412. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Nitrate**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**FERROUS IRON**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for ferrous iron in accordance with SM 3500 F+2 B. The samples were analyzed on 11/22/2016.

Samples MW-1 (490-116230-1)[10X], MW-3 (490-116230-2)[10X], MW-3D (490-116230-3)[10X], MW-19 (490-116230-4)[10X] and MW-20 (490-116230-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |
| * | LCS or LCSD is outside acceptance limits. |

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD Recovery is outside acceptance limits. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-1**
**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-1**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Benzene** | **52.3** | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:06 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Ethylbenzene** | **27.2** | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Naphthalene** | **1500** | | 50.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-1

**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-1

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Tetrachloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **Toluene** | **22.0** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Trichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **1,2,4-Trimethylbenzene** | **28.9** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **1,3,5-Trimethylbenzene** | **31.8** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Vinyl chloride | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **Xylenes, Total** | **44.1** | | 30.0 | ug/L | | | 11/19/16 22:06 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 22:06* | *10* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 02:48 | 1 |
| Sulfate | ND | F1 | 1.00 | mg/L | | | 11/17/16 02:48 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **2.81** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 03:32 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **132** | | 10.0 | mg/L | | | 11/23/16 12:51 | 1 |
| **Ferrous Iron** | **27.5** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-3**
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-2**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-3
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-2
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 19:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 19:29* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 03:21 | 1 |
| **Sulfate** | **1.31** | | 1.00 | mg/L | | | 11/17/16 03:21 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.749** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 03:57 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **364** | | 10.0 | mg/L | | | 11/23/16 12:58 | 1 |
| **Ferrous Iron** | **28.0** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-3D**
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-3**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Benzene** | **296** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:33 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Ethylbenzene** | **331** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Naphthalene** | **4710** | | 250 | | ug/L | | | 11/20/16 16:53 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **p-Isopropyltoluene** | **10.6** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-3D
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-3
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Tetrachloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Toluene** | **19.6** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Trichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **1,2,4-Trimethylbenzene** | **63.8** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **1,3,5-Trimethylbenzene** | **127** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Vinyl chloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Xylenes, Total** | **259** | | 30.0 | | ug/L | | | 11/19/16 22:33 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *Toluene-d8 (Surr)* | *111* | | *70 - 130* | | *11/20/16 16:53* | *50* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/17/16 03:43 | 1 |
| Sulfate | ND | | 1.00 | | mg/L | | | 11/17/16 03:43 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.147** | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 04:02 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **81.6** | | 10.0 | | mg/L | | | 11/23/16 13:04 | 1 |
| **Ferrous Iron** | **11.2** | **HF** | 1.00 | | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-19**
**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Benzene** | **42.5** | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 10:46 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Ethylbenzene** | **54.0** | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Naphthalene** | **4970** | | 250 | | ug/L | | | 11/20/16 17:19 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-19

**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-4

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Tetrachloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **Toluene** | **34.5** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Trichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **1,2,4-Trimethylbenzene** | **38.2** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **1,3,5-Trimethylbenzene** | **66.6** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Vinyl chloride | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **Xylenes, Total** | **76.6** | | 30.0 | ug/L | | | 11/19/16 10:46 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *Toluene-d8 (Surr)* | *109* | | *70 - 130* | | *11/19/16 10:46* | *10* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 04:05 | 1 |
| Sulfate | ND | | 1.00 | mg/L | | | 11/17/16 04:05 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **2.43** | | 0.0150 | mg/L | | 11/22/16 15:30 | 11/23/16 23:01 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **133** | | 10.0 | mg/L | | | 11/23/16 13:10 | 1 |
| **Ferrous Iron** | **27.7** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-20**
**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Benzene** | **414** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:59 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Ethylbenzene** | **275** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Naphthalene** | **5040** | | 250 | | ug/L | | | 11/20/16 17:46 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-20
**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-5
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Tetrachloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Toluene** | **41.7** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Trichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **1,2,4-Trimethylbenzene** | **63.8** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **1,3,5-Trimethylbenzene** | **140** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Vinyl chloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Xylenes, Total** | **268** | | 30.0 | | ug/L | | | 11/19/16 22:59 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *Toluene-d8 (Surr)* | *109* | | *70 - 130* | | *11/20/16 17:46* | *50* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/17/16 04:28 | 1 |
| Sulfate | ND | | 1.00 | | mg/L | | | 11/17/16 04:28 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.178** | | 0.0150 | | mg/L | | 11/25/16 07:59 | 11/28/16 14:01 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **70.3** | | 10.0 | | mg/L | | | 11/23/16 13:16 | 1 |
| **Ferrous Iron** | **11.9** | **HF** | 1.00 | | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: Trip Blank**
**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-6**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: Trip Blank

**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | ND | | 5.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Naphthalene | ND | | 5.00 | ug/L | | | 11/19/16 04:13 | 1 |
| n-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| N-Propylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| sec-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 04:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *Dibromofluoromethane (Surr)* | *102* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *Toluene-d8 (Surr)* | *111* | | *70 - 130* | | *11/19/16 04:13* | *1* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-388091/7**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388091/7**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/19/16 02:54 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 02:54* | *1* |

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.56 | | ug/L | | 98 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.23 | | ug/L | | 96 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 104.7 | | ug/L | | 105 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 23.82 | | ug/L | | 119 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 21.32 | | ug/L | | 107 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 20.51 | | ug/L | | 103 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 18.84 | | ug/L | | 94 | 70 - 130 |
| Acetone | 100 | 100.8 | | ug/L | | 101 | 39 - 150 |
| Benzene | 20.0 | 19.63 | | ug/L | | 98 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 18.02 | | ug/L | | 90 | 70 - 132 |
| Bromobenzene | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.24 | | ug/L | | 91 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 20.33 | | ug/L | | 102 | 70 - 130 |
| Bromodichloromethane | 20.0 | 18.35 | | ug/L | | 92 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 14.93 | | ug/L | | 75 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.71 | | ug/L | | 104 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 18.56 | | ug/L | | 93 | 70 - 130 |
| Bromomethane | 20.0 | 11.77 | | ug/L | | 59 | 53 - 150 |
| Carbon disulfide | 20.0 | 21.31 | | ug/L | | 107 | 64 - 135 |
| Diisopropyl ether | 20.0 | 18.61 | | ug/L | | 93 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 18.16 | | ug/L | | 91 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 |
| 2-Hexanone | 100 | 98.07 | | ug/L | | 98 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 21.63 | | ug/L | | 108 | 70 - 133 |
| Chloroethane | 20.0 | 18.94 | | ug/L | | 95 | 60 - 138 |
| Chloroform | 20.0 | 19.07 | | ug/L | | 95 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 101.0 | | ug/L | | 101 | 60 - 137 |
| Chloromethane | 20.0 | 18.69 | | ug/L | | 93 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.68 | | ug/L | | 98 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 19.32 | | ug/L | | 97 | 70 - 133 |
| Dibromomethane | 20.0 | 18.54 | | ug/L | | 93 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.76 | | ug/L | | 89 | 48 - 150 |
| Ethylbenzene | 20.0 | 18.89 | | ug/L | | 94 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 17.80 | | ug/L | | 89 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.67 | | ug/L | | 93 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.28 | | ug/L | | 106 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 17.82 | | ug/L | | 89 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.46 | | ug/L | | 112 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.95 | | ug/L | | 100 | 70 - 130 |
| Naphthalene | 20.0 | 17.02 | | ug/L | | 85 | 54 - 150 |
| n-Butylbenzene | 20.0 | 20.98 | | ug/L | | 105 | 68 - 137 |
| N-Propylbenzene | 20.0 | 20.78 | | ug/L | | 104 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 20.55 | | ug/L | | 103 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 20.49 | | ug/L | | 102 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.55 | | ug/L | | 88 | 46 - 150 |
| Styrene | 20.0 | 20.23 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.13 | | ug/L | | 86 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 20.41 | | ug/L | | 102 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 17.04 | | ug/L | | 85 | 70 - 135 |
| Tetrachloroethene | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| Toluene | 20.0 | 19.16 | | ug/L | | 96 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 18.25 | | ug/L | | 91 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.27 | | ug/L | | 106 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 18.08 | | ug/L | | 90 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.64 | | ug/L | | 103 | 70 - 130 |
| Trichloroethene | 20.0 | 17.70 | | ug/L | | 89 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.47 | | ug/L | | 122 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 18.12 | | ug/L | | 91 | 59 - 150 |
| Vinyl chloride | 20.0 | 18.98 | | ug/L | | 95 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.44 | | ug/L | | 96 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 105 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 95 | | 70 - 130 |
| Toluene-d8 (Surr) | 103 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388091/4**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.24 | | ug/L | | 96 | 45 - 138 | 2 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.12 | | ug/L | | 96 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 97.12 | | ug/L | | 97 | 55 - 143 | 8 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 19.59 | | ug/L | | 98 | 70 - 130 | 3 | 12 |
| 2-Chlorotoluene | 20.0 | 23.90 | | ug/L | | 120 | 70 - 130 | 0 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 19.99 | | ug/L | | 100 | 70 - 130 | 1 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.25 | | ug/L | | 101 | 70 - 130 | 0 | 12 |
| 4-Chlorotoluene | 20.0 | 21.32 | | ug/L | | 107 | 70 - 130 | 0 | 15 |
| 1,1-Dichloroethane | 20.0 | 20.14 | | ug/L | | 101 | 70 - 130 | 2 | 17 |
| 1,2-Dichloroethane | 20.0 | 18.34 | | ug/L | | 92 | 70 - 130 | 3 | 13 |
| Acetone | 100 | 98.64 | | ug/L | | 99 | 39 - 150 | 2 | 23 |
| Benzene | 20.0 | 19.46 | | ug/L | | 97 | 70 - 130 | 1 | 12 |
| 1,1-Dichloroethene | 20.0 | 18.71 | | ug/L | | 94 | 70 - 132 | 4 | 20 |
| Bromobenzene | 20.0 | 20.01 | | ug/L | | 100 | 70 - 130 | 1 | 16 |
| 1,2-Dichloropropane | 20.0 | 19.18 | | ug/L | | 96 | 70 - 130 | 4 | 15 |
| Bromochloromethane | 20.0 | 17.62 | | ug/L | | 88 | 70 - 130 | 3 | 16 |
| 1,3-Dichloropropane | 20.0 | 19.34 | | ug/L | | 97 | 70 - 130 | 5 | 12 |
| Bromodichloromethane | 20.0 | 17.86 | | ug/L | | 89 | 70 - 130 | 3 | 14 |
| 2,2-Dichloropropane | 20.0 | 15.49 | | ug/L | | 77 | 60 - 143 | 4 | 20 |
| Bromoform | 20.0 | 20.03 | | ug/L | | 100 | 70 - 137 | 3 | 14 |
| 1,1-Dichloropropene | 20.0 | 17.93 | | ug/L | | 90 | 70 - 130 | 3 | 16 |
| Bromomethane | 20.0 | 11.65 | | ug/L | | 58 | 53 - 150 | 1 | 19 |
| Carbon disulfide | 20.0 | 20.79 | | ug/L | | 104 | 64 - 135 | 2 | 16 |
| Diisopropyl ether | 20.0 | 18.46 | | ug/L | | 92 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | 20.0 | 17.85 | | ug/L | | 89 | 70 - 147 | 2 | 16 |
| Chlorobenzene | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 | 2 | 12 |
| 2-Hexanone | 100 | 96.33 | | ug/L | | 96 | 54 - 142 | 2 | 17 |
| Chlorodibromomethane | 20.0 | 20.72 | | ug/L | | 104 | 70 - 133 | 4 | 13 |
| Chloroethane | 20.0 | 18.79 | | ug/L | | 94 | 60 - 138 | 1 | 15 |
| Chloroform | 20.0 | 18.87 | | ug/L | | 94 | 70 - 130 | 1 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 95.59 | | ug/L | | 96 | 60 - 137 | 6 | 21 |
| Chloromethane | 20.0 | 17.47 | | ug/L | | 87 | 33 - 150 | 7 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 19.57 | | ug/L | | 98 | 70 - 130 | 1 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 19.25 | | ug/L | | 96 | 70 - 133 | 0 | 15 |
| Dibromomethane | 20.0 | 17.88 | | ug/L | | 89 | 70 - 130 | 4 | 14 |
| Dichlorodifluoromethane | 20.0 | 17.39 | | ug/L | | 87 | 48 - 150 | 2 | 16 |
| Ethylbenzene | 20.0 | 18.72 | | ug/L | | 94 | 70 - 130 | 1 | 12 |
| Hexachlorobutadiene | 20.0 | 18.57 | | ug/L | | 93 | 70 - 138 | 4 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388091/4**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | | | 20.0 | 18.39 | | ug/L | | 92 | 70 - 131 | 2 | 13 |
| 1,1,1,2-Tetrachloroethane | | | 20.0 | 20.87 | | ug/L | | 104 | 70 - 130 | 2 | 13 |
| Methyl tert-butyl ether | | | 20.0 | 17.22 | | ug/L | | 86 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | | | 20.0 | 21.86 | | ug/L | | 109 | 69 - 131 | 3 | 15 |
| Methylene Chloride | | | 20.0 | 19.29 | | ug/L | | 96 | 70 - 130 | 3 | 15 |
| Naphthalene | | | 20.0 | 16.63 | | ug/L | | 83 | 54 - 150 | 2 | 15 |
| n-Butylbenzene | | | 20.0 | 21.63 | | ug/L | | 108 | 68 - 137 | 3 | 14 |
| N-Propylbenzene | | | 20.0 | 21.00 | | ug/L | | 105 | 70 - 134 | 1 | 14 |
| p-Isopropyltoluene | | | 20.0 | 20.31 | | ug/L | | 102 | 66 - 130 | 1 | 13 |
| sec-Butylbenzene | | | 20.0 | 20.75 | | ug/L | | 104 | 70 - 135 | 1 | 14 |
| 1,2,3-Trichlorobenzene | | | 20.0 | 17.13 | | ug/L | | 86 | 46 - 150 | 2 | 16 |
| Styrene | | | 20.0 | 20.00 | | ug/L | | 100 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | | | 20.0 | 17.16 | | ug/L | | 86 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | | | 20.0 | 20.48 | | ug/L | | 102 | 70 - 130 | 0 | 14 |
| 1,1,1-Trichloroethane | | | 20.0 | 16.82 | | ug/L | | 84 | 70 - 135 | 1 | 15 |
| Tetrachloroethene | | | 20.0 | 17.43 | | ug/L | | 87 | 70 - 130 | 3 | 17 |
| 1,1,2-Trichloroethane | | | 20.0 | 19.43 | | ug/L | | 97 | 70 - 130 | 4 | 13 |
| Toluene | | | 20.0 | 19.09 | | ug/L | | 95 | 70 - 130 | 0 | 13 |
| trans-1,2-Dichloroethene | | | 20.0 | 17.85 | | ug/L | | 89 | 70 - 130 | 2 | 15 |
| 1,2,3-Trichloropropane | | | 20.0 | 20.76 | | ug/L | | 104 | 70 - 131 | 2 | 14 |
| trans-1,3-Dichloropropene | | | 20.0 | 17.22 | | ug/L | | 86 | 63 - 142 | 5 | 13 |
| 1,2,4-Trimethylbenzene | | | 20.0 | 20.63 | | ug/L | | 103 | 70 - 130 | 0 | 13 |
| Trichloroethene | | | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 | 2 | 14 |
| 1,3,5-Trimethylbenzene | | | 20.0 | 24.57 | | ug/L | | 123 | 70 - 130 | 0 | 14 |
| Trichlorofluoromethane | | | 20.0 | 17.29 | | ug/L | | 86 | 59 - 150 | 5 | 22 |
| Vinyl chloride | | | 20.0 | 18.83 | | ug/L | | 94 | 57 - 137 | 1 | 15 |
| Xylenes, Total | | | 40.0 | 38.04 | | ug/L | | 95 | 70 - 132 | 1 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 508.7 | | ug/L | | 102 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 482.1 | | ug/L | | 96 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 2500 | 2441 | | ug/L | | 98 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 500 | 501.6 | | ug/L | | 100 | 70 - 130 |
| 2-Chlorotoluene | ND | | 500 | 603.8 | | ug/L | | 121 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 500 | 518.9 | | ug/L | | 104 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 500 | 504.6 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | ND | | 500 | 540.4 | | ug/L | | 108 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 500 | 542.3 | | ug/L | | 108 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 500 | 464.0 | | ug/L | | 93 | 64 - 136 |
| Acetone | ND | | 2500 | 2003 | | ug/L | | 80 | 39 - 150 |
| Benzene | 42.5 | | 500 | 514.2 | | ug/L | | 94 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 500 | 526.7 | | ug/L | | 105 | 54 - 150 |
| Bromobenzene | ND | | 500 | 504.1 | | ug/L | | 101 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 500 | 509.9 | | ug/L | | 102 | 67 - 130 |
| Bromochloromethane | ND | | 500 | 465.7 | | ug/L | | 93 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 500 | 498.2 | | ug/L | | 100 | 70 - 130 |
| Bromodichloromethane | ND | | 500 | 464.9 | | ug/L | | 93 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 500 | 373.8 | | ug/L | | 75 | 50 - 146 |
| Bromoform | ND | | 500 | 495.7 | | ug/L | | 99 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 500 | 481.5 | | ug/L | | 96 | 54 - 150 |
| Bromomethane | ND | | 500 | 388.9 | | ug/L | | 78 | 30 - 150 |
| Carbon disulfide | ND | | 500 | 576.4 | | ug/L | | 115 | 35 - 150 |
| Diisopropyl ether | ND | | 500 | 468.7 | | ug/L | | 94 | 56 - 142 |
| Carbon tetrachloride | ND | | 500 | 492.0 | | ug/L | | 98 | 56 - 150 |
| Chlorobenzene | ND | | 500 | 515.6 | | ug/L | | 103 | 70 - 130 |
| 2-Hexanone | ND | | 2500 | 2313 | | ug/L | | 93 | 44 - 150 |
| Chlorodibromomethane | ND | | 500 | 541.7 | | ug/L | | 108 | 66 - 140 |
| Chloroethane | ND | | 500 | 509.1 | | ug/L | | 102 | 58 - 141 |
| Chloroform | ND | | 500 | 485.0 | | ug/L | | 97 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2377 | | ug/L | | 95 | 50 - 140 |
| Chloromethane | ND | | 500 | 517.5 | | ug/L | | 103 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 500 | 511.1 | | ug/L | | 102 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 500 | 482.1 | | ug/L | | 96 | 70 - 133 |
| Dibromomethane | ND | | 500 | 456.1 | | ug/L | | 91 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 500 | 456.4 | | ug/L | | 91 | 10 - 150 |
| Ethylbenzene | 54.0 | | 500 | 535.7 | | ug/L | | 96 | 65 - 139 |
| Hexachlorobutadiene | ND | | 500 | 489.6 | | ug/L | | 98 | 61 - 141 |
| Isopropylbenzene | ND | | 500 | 486.3 | | ug/L | | 96 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 543.1 | | ug/L | | 109 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 500 | 424.6 | | ug/L | | 85 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 546.2 | | ug/L | | 109 | 56 - 145 |
| Methylene Chloride | ND | | 500 | 509.4 | | ug/L | | 102 | 64 - 130 |
| Naphthalene | 2260 | E | 500 | 2599 | E 4 | ug/L | | 68 | 32 - 150 |
| n-Butylbenzene | ND | | 500 | 561.4 | | ug/L | | 112 | 61 - 141 |
| N-Propylbenzene | ND | | 500 | 538.3 | | ug/L | | 108 | 53 - 150 |
| p-Isopropyltoluene | ND | | 500 | 532.4 | | ug/L | | 106 | 66 - 137 |
| sec-Butylbenzene | ND | | 500 | 543.1 | | ug/L | | 109 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 436.9 | | ug/L | | 87 | 36 - 150 |
| Styrene | ND | | 500 | 505.8 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 465.7 | | ug/L | | 93 | 47 - 147 |
| tert-Butylbenzene | ND | | 500 | 541.9 | | ug/L | | 108 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 500 | 467.3 | | ug/L | | 93 | 68 - 144 |
| Tetrachloroethene | ND | | 500 | 470.6 | | ug/L | | 94 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 500 | 501.8 | | ug/L | | 100 | 70 - 130 |
| Toluene | 34.5 | | 500 | 523.9 | | ug/L | | 98 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 500 | 524.4 | | ug/L | | 105 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 500 | 523.1 | | ug/L | | 105 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 500 | 450.5 | | ug/L | | 90 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 38.2 | | 500 | 563.7 | | ug/L | | 105 | 64 - 136 |
| Trichloroethene | ND | | 500 | 469.5 | | ug/L | | 94 | 63 - 135 |
| 1,3,5-Trimethylbenzene | 66.6 | | 500 | 691.9 | | ug/L | | 125 | 69 - 139 |
| Trichlorofluoromethane | ND | | 500 | 495.9 | | ug/L | | 99 | 44 - 150 |
| Vinyl chloride | ND | | 500 | 519.4 | | ug/L | | 104 | 57 - 150 |
| Xylenes, Total | 76.6 | | 1000 | 1070 | | ug/L | | 99 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116230-4 MSD**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 508.4 | | ug/L | | 102 | 38 - 138 | 0 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 462.5 | | ug/L | | 92 | 65 - 137 | 4 | 21 |
| 2-Butanone (MEK) | ND | | 2500 | 2375 | | ug/L | | 95 | 50 - 143 | 3 | 28 |
| 1,2-Dichlorobenzene | ND | | 500 | 483.8 | | ug/L | | 97 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | | 500 | 600.2 | | ug/L | | 120 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 500 | 497.4 | | ug/L | | 99 | 68 - 131 | 4 | 14 |
| 1,4-Dichlorobenzene | ND | | 500 | 486.9 | | ug/L | | 97 | 70 - 130 | 4 | 14 |
| 4-Chlorotoluene | ND | | 500 | 520.6 | | ug/L | | 104 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 500 | 510.8 | | ug/L | | 102 | 61 - 139 | 6 | 23 |
| 1,2-Dichloroethane | ND | | 500 | 445.6 | | ug/L | | 89 | 64 - 136 | 4 | 22 |
| Acetone | ND | | 2500 | 1906 | | ug/L | | 76 | 39 - 150 | 5 | 28 |
| Benzene | 42.5 | | 500 | 518.7 | | ug/L | | 95 | 55 - 147 | 1 | 22 |
| 1,1-Dichloroethene | ND | | 500 | 492.7 | | ug/L | | 99 | 54 - 150 | 7 | 24 |
| Bromobenzene | ND | | 500 | 485.4 | | ug/L | | 97 | 60 - 133 | 4 | 18 |
| 1,2-Dichloropropane | ND | | 500 | 472.2 | | ug/L | | 94 | 67 - 130 | 8 | 19 |
| Bromochloromethane | ND | | 500 | 444.3 | | ug/L | | 89 | 59 - 132 | 5 | 21 |
| 1,3-Dichloropropane | ND | | 500 | 478.9 | | ug/L | | 96 | 70 - 130 | 4 | 17 |
| Bromodichloromethane | ND | | 500 | 441.7 | | ug/L | | 88 | 70 - 140 | 5 | 196 |
| 2,2-Dichloropropane | ND | | 500 | 345.0 | | ug/L | | 69 | 50 - 146 | 8 | 20 |
| Bromoform | ND | | 500 | 470.6 | | ug/L | | 94 | 53 - 150 | 5 | 20 |
| 1,1-Dichloropropene | ND | | 500 | 485.6 | | ug/L | | 97 | 54 - 150 | 1 | 24 |
| Bromomethane | ND | | 500 | 417.4 | | ug/L | | 83 | 30 - 150 | 7 | 44 |
| Carbon disulfide | ND | | 500 | 524.6 | | ug/L | | 105 | 35 - 150 | 9 | 34 |
| Diisopropyl ether | ND | | 500 | 444.7 | | ug/L | | 89 | 56 - 142 | 5 | 22 |
| Carbon tetrachloride | ND | | 500 | 474.4 | | ug/L | | 95 | 56 - 150 | 4 | 18 |
| Chlorobenzene | ND | | 500 | 488.2 | | ug/L | | 98 | 70 - 130 | 5 | 15 |
| 2-Hexanone | ND | | 2500 | 2258 | | ug/L | | 90 | 44 - 150 | 2 | 21 |
| Chlorodibromomethane | ND | | 500 | 518.6 | | ug/L | | 104 | 66 - 140 | 4 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MSD**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 500 | 483.3 | | ug/L | | 97 | 58 - 141 | 5 | 31 |
| Chloroform | ND | | 500 | 466.5 | | ug/L | | 93 | 66 - 138 | 4 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2313 | | ug/L | | 93 | 50 - 140 | 3 | 24 |
| Chloromethane | ND | | 500 | 498.6 | | ug/L | | 100 | 10 - 150 | 4 | 43 |
| cis-1,2-Dichloroethene | ND | | 500 | 488.0 | | ug/L | | 98 | 68 - 131 | 5 | 21 |
| cis-1,3-Dichloropropene | ND | | 500 | 470.5 | | ug/L | | 94 | 70 - 133 | 2 | 19 |
| Dibromomethane | ND | | 500 | 432.7 | | ug/L | | 87 | 70 - 130 | 5 | 19 |
| Dichlorodifluoromethane | ND | | 500 | 421.7 | | ug/L | | 84 | 10 - 150 | 8 | 50 |
| Ethylbenzene | 54.0 | | 500 | 510.0 | | ug/L | | 91 | 65 - 139 | 5 | 18 |
| Hexachlorobutadiene | ND | | 500 | 471.5 | | ug/L | | 94 | 61 - 141 | 4 | 26 |
| Isopropylbenzene | ND | | 500 | 464.2 | | ug/L | | 92 | 70 - 137 | 5 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 510.9 | | ug/L | | 102 | 70 - 131 | 6 | 16 |
| Methyl tert-butyl ether | ND | | 500 | 410.6 | | ug/L | | 82 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 531.4 | | ug/L | | 106 | 56 - 145 | 3 | 19 |
| Methylene Chloride | ND | | 500 | 482.2 | | ug/L | | 96 | 64 - 130 | 5 | 22 |
| Naphthalene | 2260 | E | 500 | 2638 | E 4 | ug/L | | 76 | 32 - 150 | 1 | 40 |
| n-Butylbenzene | ND | | 500 | 544.4 | | ug/L | | 109 | 61 - 141 | 3 | 17 |
| N-Propylbenzene | ND | | 500 | 520.1 | | ug/L | | 104 | 53 - 150 | 3 | 18 |
| p-Isopropyltoluene | ND | | 500 | 518.7 | | ug/L | | 104 | 66 - 137 | 3 | 16 |
| sec-Butylbenzene | ND | | 500 | 525.7 | | ug/L | | 105 | 55 - 136 | 3 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 457.3 | | ug/L | | 91 | 36 - 150 | 5 | 43 |
| Styrene | ND | | 500 | 482.3 | | ug/L | | 96 | 70 - 130 | 5 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 473.0 | | ug/L | | 95 | 47 - 147 | 2 | 24 |
| tert-Butylbenzene | ND | | 500 | 528.8 | | ug/L | | 106 | 70 - 138 | 2 | 17 |
| 1,1,1-Trichloroethane | ND | | 500 | 440.3 | | ug/L | | 88 | 68 - 144 | 6 | 17 |
| Tetrachloroethene | ND | | 500 | 446.6 | | ug/L | | 89 | 57 - 138 | 5 | 17 |
| 1,1,2-Trichloroethane | ND | | 500 | 470.9 | | ug/L | | 94 | 70 - 130 | 6 | 18 |
| Toluene | 34.5 | | 500 | 497.9 | | ug/L | | 93 | 64 - 136 | 5 | 18 |
| trans-1,2-Dichloroethene | ND | | 500 | 495.1 | | ug/L | | 99 | 59 - 143 | 6 | 25 |
| 1,2,3-Trichloropropane | ND | | 500 | 510.4 | | ug/L | | 102 | 65 - 131 | 2 | 19 |
| trans-1,3-Dichloropropene | ND | | 500 | 432.6 | | ug/L | | 87 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 38.2 | | 500 | 551.7 | | ug/L | | 103 | 64 - 136 | 2 | 18 |
| Trichloroethene | ND | | 500 | 448.8 | | ug/L | | 90 | 63 - 135 | 5 | 17 |
| 1,3,5-Trimethylbenzene | 66.6 | | 500 | 677.5 | | ug/L | | 122 | 69 - 139 | 2 | 17 |
| Trichlorofluoromethane | ND | | 500 | 463.7 | | ug/L | | 93 | 44 - 150 | 7 | 32 |
| Vinyl chloride | ND | | 500 | 486.0 | | ug/L | | 97 | 57 - 150 | 7 | 37 |
| Xylenes, Total | 76.6 | | 1000 | 1018 | | ug/L | | 94 | 69 - 132 | 5 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388100/7**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388100/7**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 15:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/19/16 15:08* | *1* |

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.74 | | ug/L | | 94 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.15 | | ug/L | | 96 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 100.7 | | ug/L | | 101 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 24.28 | | ug/L | | 121 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.42 | | ug/L | | 102 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 21.89 | | ug/L | | 109 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 18.18 | | ug/L | | 91 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 18.39 | | ug/L | | 92 | 70 - 130 |
| Acetone | 100 | 85.83 | | ug/L | | 86 | 39 - 150 |
| Benzene | 20.0 | 19.95 | | ug/L | | 100 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 19.01 | | ug/L | | 95 | 70 - 132 |
| Bromobenzene | 20.0 | 20.16 | | ug/L | | 101 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.54 | | ug/L | | 93 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 19.67 | | ug/L | | 98 | 70 - 130 |
| Bromodichloromethane | 20.0 | 18.17 | | ug/L | | 91 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 13.23 | | ug/L | | 66 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 19.99 | | ug/L | | 100 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 19.11 | | ug/L | | 96 | 70 - 130 |
| Bromomethane | 20.0 | 12.55 | | ug/L | | 63 | 53 - 150 |
| Carbon disulfide | 20.0 | 21.20 | | ug/L | | 106 | 64 - 135 |
| Diisopropyl ether | 20.0 | 18.56 | | ug/L | | 93 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 18.40 | | ug/L | | 92 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.61 | | ug/L | | 103 | 70 - 130 |
| 2-Hexanone | 100 | 90.96 | | ug/L | | 91 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 20.55 | | ug/L | | 103 | 70 - 133 |
| Chloroethane | 20.0 | 19.30 | | ug/L | | 96 | 60 - 138 |
| Chloroform | 20.0 | 19.39 | | ug/L | | 97 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 96.77 | | ug/L | | 97 | 60 - 137 |
| Chloromethane | 20.0 | 18.78 | | ug/L | | 94 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.83 | | ug/L | | 99 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 18.75 | | ug/L | | 94 | 70 - 133 |
| Dibromomethane | 20.0 | 17.99 | | ug/L | | 90 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.47 | | ug/L | | 87 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.04 | | ug/L | | 95 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 18.21 | | ug/L | | 91 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.81 | | ug/L | | 94 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.61 | | ug/L | | 103 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 16.98 | | ug/L | | 85 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.20 | | ug/L | | 101 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.47 | | ug/L | | 97 | 70 - 130 |
| Naphthalene | 20.0 | 17.00 | | ug/L | | 85 | 54 - 150 |
| n-Butylbenzene | 20.0 | 21.51 | | ug/L | | 108 | 68 - 137 |
| N-Propylbenzene | 20.0 | 21.53 | | ug/L | | 108 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 21.01 | | ug/L | | 105 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 21.29 | | ug/L | | 106 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.49 | | ug/L | | 87 | 46 - 150 |
| Styrene | 20.0 | 20.01 | | ug/L | | 100 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.26 | | ug/L | | 86 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 21.52 | | ug/L | | 108 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 17.48 | | ug/L | | 87 | 70 - 135 |
| Tetrachloroethene | 20.0 | 18.02 | | ug/L | | 90 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.08 | | ug/L | | 100 | 70 - 130 |
| Toluene | 20.0 | 19.46 | | ug/L | | 97 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 20.23 | | ug/L | | 101 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.30 | | ug/L | | 106 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 17.26 | | ug/L | | 86 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 21.06 | | ug/L | | 105 | 70 - 130 |
| Trichloroethene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.92 | | ug/L | | 125 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 17.27 | | ug/L | | 86 | 59 - 150 |
| Vinyl chloride | 20.0 | 19.33 | | ug/L | | 97 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.48 | | ug/L | | 96 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 108 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 96 | | 70 - 130 |
| Toluene-d8 (Surr) | 107 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388100/4**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.77 | | ug/L | | 94 | 45 - 138 | 0 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 18.82 | | ug/L | | 94 | 70 - 130 | 2 | 13 |
| 2-Butanone (MEK) | 100 | 98.47 | | ug/L | | 98 | 55 - 143 | 2 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 19.55 | | ug/L | | 98 | 70 - 130 | 3 | 12 |
| 2-Chlorotoluene | 20.0 | 23.97 | | ug/L | | 120 | 70 - 130 | 1 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 19.91 | | ug/L | | 100 | 70 - 130 | 3 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.19 | | ug/L | | 101 | 70 - 130 | 1 | 12 |
| 4-Chlorotoluene | 20.0 | 21.54 | | ug/L | | 108 | 70 - 130 | 2 | 15 |
| 1,1-Dichloroethane | 20.0 | 17.15 | | ug/L | | 86 | 70 - 130 | 6 | 17 |
| 1,2-Dichloroethane | 20.0 | 18.60 | | ug/L | | 93 | 70 - 130 | 1 | 13 |
| Acetone | 100 | 90.29 | | ug/L | | 90 | 39 - 150 | 5 | 23 |
| Benzene | 20.0 | 20.11 | | ug/L | | 101 | 70 - 130 | 1 | 12 |
| 1,1-Dichloroethene | 20.0 | 18.25 | | ug/L | | 91 | 70 - 132 | 4 | 20 |
| Bromobenzene | 20.0 | 19.61 | | ug/L | | 98 | 70 - 130 | 3 | 16 |
| 1,2-Dichloropropane | 20.0 | 19.33 | | ug/L | | 97 | 70 - 130 | 2 | 15 |
| Bromochloromethane | 20.0 | 18.34 | | ug/L | | 92 | 70 - 130 | 1 | 16 |
| 1,3-Dichloropropane | 20.0 | 19.42 | | ug/L | | 97 | 70 - 130 | 1 | 12 |
| Bromodichloromethane | 20.0 | 17.41 | | ug/L | | 87 | 70 - 130 | 4 | 14 |
| 2,2-Dichloropropane | 20.0 | 13.21 | | ug/L | | 66 | 60 - 143 | 0 | 20 |
| Bromoform | 20.0 | 19.22 | | ug/L | | 96 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 18.44 | | ug/L | | 92 | 70 - 130 | 4 | 16 |
| Bromomethane | 20.0 | 12.86 | | ug/L | | 64 | 53 - 150 | 2 | 19 |
| Carbon disulfide | 20.0 | 20.45 | | ug/L | | 102 | 64 - 135 | 4 | 16 |
| Diisopropyl ether | 20.0 | 18.39 | | ug/L | | 92 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | 20.0 | 18.17 | | ug/L | | 91 | 70 - 147 | 1 | 16 |
| Chlorobenzene | 20.0 | 19.67 | | ug/L | | 98 | 70 - 130 | 5 | 12 |
| 2-Hexanone | 100 | 89.37 | | ug/L | | 89 | 54 - 142 | 2 | 17 |
| Chlorodibromomethane | 20.0 | 20.38 | | ug/L | | 102 | 70 - 133 | 1 | 13 |
| Chloroethane | 20.0 | 19.54 | | ug/L | | 98 | 60 - 138 | 1 | 15 |
| Chloroform | 20.0 | 18.75 | | ug/L | | 94 | 70 - 130 | 3 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 93.45 | | ug/L | | 93 | 60 - 137 | 3 | 21 |
| Chloromethane | 20.0 | 19.19 | | ug/L | | 96 | 33 - 150 | 2 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 20.13 | | ug/L | | 101 | 70 - 130 | 2 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 18.04 | | ug/L | | 90 | 70 - 133 | 4 | 15 |
| Dibromomethane | 20.0 | 18.12 | | ug/L | | 91 | 70 - 130 | 1 | 14 |
| Dichlorodifluoromethane | 20.0 | 17.14 | | ug/L | | 86 | 48 - 150 | 2 | 16 |
| Ethylbenzene | 20.0 | 18.81 | | ug/L | | 94 | 70 - 130 | 1 | 12 |
| Hexachlorobutadiene | 20.0 | 17.80 | | ug/L | | 89 | 70 - 138 | 2 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388100/4**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 18.58 | | ug/L | | 93 | 70 - 131 | 1 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.47 | | ug/L | | 102 | 70 - 130 | 1 | 13 |
| Methyl tert-butyl ether | 20.0 | 17.09 | | ug/L | | 85 | 70 - 130 | 1 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 21.17 | | ug/L | | 106 | 69 - 131 | 5 | 15 |
| Methylene Chloride | 20.0 | 19.49 | | ug/L | | 97 | 70 - 130 | 0 | 15 |
| Naphthalene | 20.0 | 16.44 | | ug/L | | 82 | 54 - 150 | 3 | 15 |
| n-Butylbenzene | 20.0 | 20.76 | | ug/L | | 104 | 68 - 137 | 4 | 14 |
| N-Propylbenzene | 20.0 | 21.03 | | ug/L | | 105 | 70 - 134 | 2 | 14 |
| p-Isopropyltoluene | 20.0 | 20.48 | | ug/L | | 102 | 66 - 130 | 3 | 13 |
| sec-Butylbenzene | 20.0 | 20.85 | | ug/L | | 104 | 70 - 135 | 2 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 16.83 | | ug/L | | 84 | 46 - 150 | 4 | 16 |
| Styrene | 20.0 | 19.74 | | ug/L | | 99 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 16.79 | | ug/L | | 84 | 58 - 147 | 3 | 15 |
| tert-Butylbenzene | 20.0 | 20.93 | | ug/L | | 105 | 70 - 130 | 3 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 16.84 | | ug/L | | 84 | 70 - 135 | 4 | 15 |
| Tetrachloroethene | 20.0 | 17.57 | | ug/L | | 88 | 70 - 130 | 3 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 19.53 | | ug/L | | 98 | 70 - 130 | 3 | 13 |
| Toluene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 | 2 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 20.11 | | ug/L | | 101 | 70 - 130 | 1 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.39 | | ug/L | | 102 | 70 - 131 | 4 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 16.73 | | ug/L | | 84 | 63 - 142 | 3 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 130 | 2 | 13 |
| Trichloroethene | 20.0 | 17.96 | | ug/L | | 90 | 70 - 130 | 6 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.19 | | ug/L | | 121 | 70 - 130 | 3 | 14 |
| Trichlorofluoromethane | 20.0 | 18.12 | | ug/L | | 91 | 59 - 150 | 5 | 22 |
| Vinyl chloride | 20.0 | 19.25 | | ug/L | | 96 | 57 - 137 | 0 | 15 |
| Xylenes, Total | 40.0 | 38.14 | | ug/L | | 95 | 70 - 132 | 1 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 477.6 | | ug/L | | 96 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 464.2 | | ug/L | | 93 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 2500 | 2369 | | ug/L | | 95 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 500 | 481.2 | | ug/L | | 96 | 70 - 130 |
| 2-Chlorotoluene | ND | | 500 | 602.6 | | ug/L | | 121 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 500 | 494.1 | | ug/L | | 99 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 500 | 485.6 | | ug/L | | 97 | 70 - 130 |
| 4-Chlorotoluene | ND | | 500 | 529.4 | | ug/L | | 106 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 500 | 527.3 | | ug/L | | 105 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 500 | 456.1 | | ug/L | | 91 | 64 - 136 |
| Acetone | ND | | 2500 | 1987 | | ug/L | | 79 | 39 - 150 |
| Benzene | 296 | | 500 | 762.3 | | ug/L | | 93 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 500 | 493.5 | | ug/L | | 99 | 54 - 150 |
| Bromobenzene | ND | | 500 | 496.5 | | ug/L | | 99 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 500 | 482.0 | | ug/L | | 96 | 67 - 130 |
| Bromochloromethane | ND | | 500 | 453.4 | | ug/L | | 91 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 500 | 477.9 | | ug/L | | 96 | 70 - 130 |
| Bromodichloromethane | ND | | 500 | 457.7 | | ug/L | | 92 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 500 | 287.7 | | ug/L | | 58 | 50 - 146 |
| Bromoform | ND | | 500 | 478.2 | | ug/L | | 96 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 500 | 472.7 | | ug/L | | 95 | 54 - 150 |
| Bromomethane | ND | | 500 | 405.0 | | ug/L | | 81 | 30 - 150 |
| Carbon disulfide | ND | | 500 | 528.6 | | ug/L | | 106 | 35 - 150 |
| Diisopropyl ether | ND | | 500 | 452.9 | | ug/L | | 91 | 56 - 142 |
| Carbon tetrachloride | ND | | 500 | 481.3 | | ug/L | | 96 | 56 - 150 |
| Chlorobenzene | ND | | 500 | 495.7 | | ug/L | | 99 | 70 - 130 |
| 2-Hexanone | ND | | 2500 | 2228 | | ug/L | | 89 | 44 - 150 |
| Chlorodibromomethane | ND | | 500 | 517.0 | | ug/L | | 103 | 66 - 140 |
| Chloroethane | ND | | 500 | 490.7 | | ug/L | | 98 | 58 - 141 |
| Chloroform | ND | | 500 | 477.0 | | ug/L | | 95 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2306 | | ug/L | | 92 | 50 - 140 |
| Chloromethane | ND | | 500 | 500.9 | | ug/L | | 100 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 500 | 499.2 | | ug/L | | 100 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 500 | 456.9 | | ug/L | | 91 | 70 - 133 |
| Dibromomethane | ND | | 500 | 434.1 | | ug/L | | 87 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 500 | 419.0 | | ug/L | | 84 | 10 - 150 |
| Ethylbenzene | 331 | | 500 | 745.6 | | ug/L | | 83 | 65 - 139 |
| Hexachlorobutadiene | ND | | 500 | 442.8 | | ug/L | | 89 | 61 - 141 |
| Isopropylbenzene | ND | | 500 | 475.9 | | ug/L | | 94 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 523.0 | | ug/L | | 105 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 500 | 413.4 | | ug/L | | 83 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 535.8 | | ug/L | | 107 | 56 - 145 |
| Methylene Chloride | ND | | 500 | 489.2 | | ug/L | | 98 | 64 - 130 |
| Naphthalene | 2950 | E | 500 | 4104 | E 4 | ug/L | | 231 | 32 - 150 |
| n-Butylbenzene | ND | | 500 | 525.3 | | ug/L | | 105 | 61 - 141 |
| N-Propylbenzene | ND | | 500 | 526.6 | | ug/L | | 105 | 53 - 150 |
| p-Isopropyltoluene | 10.6 | | 500 | 522.5 | | ug/L | | 102 | 66 - 137 |
| sec-Butylbenzene | ND | | 500 | 520.7 | | ug/L | | 104 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 413.1 | | ug/L | | 83 | 36 - 150 |
| Styrene | ND | | 500 | 487.3 | | ug/L | | 97 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 440.6 | | ug/L | | 88 | 47 - 147 |
| tert-Butylbenzene | ND | | 500 | 529.5 | | ug/L | | 106 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 500 | 454.0 | | ug/L | | 91 | 68 - 144 |
| Tetrachloroethene | ND | | 500 | 444.9 | | ug/L | | 89 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 500 | 483.2 | | ug/L | | 97 | 70 - 130 |
| Toluene | 19.6 | | 500 | 495.4 | | ug/L | | 95 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 500 | 510.9 | | ug/L | | 102 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 500 | 515.4 | | ug/L | | 103 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 500 | 422.1 | | ug/L | | 84 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 63.8 | | 500 | 572.6 | | ug/L | | 102 | 64 - 136 |
| Trichloroethene | ND | | 500 | 450.0 | | ug/L | | 90 | 63 - 135 |
| 1,3,5-Trimethylbenzene | 127 | | 500 | 726.1 | | ug/L | | 120 | 69 - 139 |
| Trichlorofluoromethane | ND | | 500 | 463.8 | | ug/L | | 93 | 44 - 150 |
| Vinyl chloride | ND | | 500 | 497.2 | | ug/L | | 99 | 57 - 150 |
| Xylenes, Total | 259 | | 1000 | 1190 | | ug/L | | 93 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 478.7 | | ug/L | | 96 | 38 - 138 | 0 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 446.6 | | ug/L | | 89 | 65 - 137 | 4 | 21 |
| 2-Butanone (MEK) | ND | | 2500 | 2214 | | ug/L | | 89 | 50 - 143 | 7 | 28 |
| 1,2-Dichlorobenzene | ND | | 500 | 464.5 | | ug/L | | 93 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | | 500 | 585.7 | | ug/L | | 117 | 67 - 138 | 3 | 17 |
| 1,3-Dichlorobenzene | ND | | 500 | 477.3 | | ug/L | | 95 | 68 - 131 | 3 | 14 |
| 1,4-Dichlorobenzene | ND | | 500 | 473.3 | | ug/L | | 95 | 70 - 130 | 3 | 14 |
| 4-Chlorotoluene | ND | | 500 | 510.6 | | ug/L | | 102 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 500 | 502.5 | | ug/L | | 100 | 61 - 139 | 5 | 23 |
| 1,2-Dichloroethane | ND | | 500 | 450.2 | | ug/L | | 90 | 64 - 136 | 1 | 22 |
| Acetone | ND | | 2500 | 2192 | | ug/L | | 88 | 39 - 150 | 10 | 28 |
| Benzene | 296 | | 500 | 700.1 | | ug/L | | 81 | 55 - 147 | 8 | 22 |
| 1,1-Dichloroethene | ND | | 500 | 475.6 | | ug/L | | 95 | 54 - 150 | 4 | 24 |
| Bromobenzene | ND | | 500 | 472.0 | | ug/L | | 94 | 60 - 133 | 5 | 18 |
| 1,2-Dichloropropane | ND | | 500 | 470.1 | | ug/L | | 94 | 67 - 130 | 3 | 19 |
| Bromochloromethane | ND | | 500 | 428.3 | | ug/L | | 86 | 59 - 132 | 6 | 21 |
| 1,3-Dichloropropane | ND | | 500 | 457.7 | | ug/L | | 92 | 70 - 130 | 4 | 17 |
| Bromodichloromethane | ND | | 500 | 435.3 | | ug/L | | 87 | 70 - 140 | 5 | 196 |
| 2,2-Dichloropropane | ND | | 500 | 274.0 | | ug/L | | 55 | 50 - 146 | 5 | 20 |
| Bromoform | ND | | 500 | 460.7 | | ug/L | | 92 | 53 - 150 | 4 | 20 |
| 1,1-Dichloropropene | ND | | 500 | 453.6 | | ug/L | | 91 | 54 - 150 | 4 | 24 |
| Bromomethane | ND | | 500 | 405.0 | | ug/L | | 81 | 30 - 150 | 0 | 44 |
| Carbon disulfide | ND | | 500 | 502.6 | | ug/L | | 101 | 35 - 150 | 5 | 34 |
| Diisopropyl ether | ND | | 500 | 441.7 | | ug/L | | 88 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 500 | 458.9 | | ug/L | | 92 | 56 - 150 | 5 | 18 |
| Chlorobenzene | ND | | 500 | 466.8 | | ug/L | | 93 | 70 - 130 | 6 | 15 |
| 2-Hexanone | ND | | 2500 | 2201 | | ug/L | | 88 | 44 - 150 | 1 | 21 |
| Chlorodibromomethane | ND | | 500 | 495.5 | | ug/L | | 99 | 66 - 140 | 4 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 500 | 464.4 | | ug/L | | 93 | 58 - 141 | 6 | 31 |
| Chloroform | ND | | 500 | 459.4 | | ug/L | | 92 | 66 - 138 | 4 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2241 | | ug/L | | 90 | 50 - 140 | 3 | 24 |
| Chloromethane | ND | | 500 | 477.8 | | ug/L | | 96 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 500 | 475.1 | | ug/L | | 95 | 68 - 131 | 5 | 21 |
| cis-1,3-Dichloropropene | ND | | 500 | 433.2 | | ug/L | | 87 | 70 - 133 | 5 | 19 |
| Dibromomethane | ND | | 500 | 422.5 | | ug/L | | 84 | 70 - 130 | 3 | 19 |
| Dichlorodifluoromethane | ND | | 500 | 400.9 | | ug/L | | 80 | 10 - 150 | 4 | 50 |
| Ethylbenzene | 331 | | 500 | 698.5 | | ug/L | | 74 | 65 - 139 | 7 | 18 |
| Hexachlorobutadiene | ND | | 500 | 453.2 | | ug/L | | 91 | 61 - 141 | 2 | 26 |
| Isopropylbenzene | ND | | 500 | 450.2 | | ug/L | | 88 | 70 - 137 | 6 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 486.9 | | ug/L | | 97 | 70 - 131 | 7 | 16 |
| Methyl tert-butyl ether | ND | | 500 | 406.3 | | ug/L | | 81 | 55 - 141 | 2 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 515.3 | | ug/L | | 103 | 56 - 145 | 4 | 19 |
| Methylene Chloride | ND | | 500 | 471.4 | | ug/L | | 94 | 64 - 130 | 4 | 22 |
| Naphthalene | 2950 | E | 500 | 3949 | E 4 | ug/L | | 200 | 32 - 150 | 4 | 40 |
| n-Butylbenzene | ND | | 500 | 521.1 | | ug/L | | 104 | 61 - 141 | 1 | 17 |
| N-Propylbenzene | ND | | 500 | 508.2 | | ug/L | | 102 | 53 - 150 | 4 | 18 |
| p-Isopropyltoluene | 10.6 | | 500 | 510.2 | | ug/L | | 100 | 66 - 137 | 2 | 16 |
| sec-Butylbenzene | ND | | 500 | 514.2 | | ug/L | | 103 | 55 - 136 | 1 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 431.9 | | ug/L | | 86 | 36 - 150 | 4 | 43 |
| Styrene | ND | | 500 | 456.4 | | ug/L | | 91 | 70 - 130 | 7 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 449.3 | | ug/L | | 90 | 47 - 147 | 2 | 24 |
| tert-Butylbenzene | ND | | 500 | 518.2 | | ug/L | | 104 | 70 - 138 | 2 | 17 |
| 1,1,1-Trichloroethane | ND | | 500 | 430.5 | | ug/L | | 86 | 68 - 144 | 5 | 17 |
| Tetrachloroethene | ND | | 500 | 421.7 | | ug/L | | 84 | 57 - 138 | 5 | 17 |
| 1,1,2-Trichloroethane | ND | | 500 | 456.2 | | ug/L | | 91 | 70 - 130 | 6 | 18 |
| Toluene | 19.6 | | 500 | 467.1 | | ug/L | | 89 | 64 - 136 | 6 | 18 |
| trans-1,2-Dichloroethene | ND | | 500 | 490.7 | | ug/L | | 98 | 59 - 143 | 4 | 25 |
| 1,2,3-Trichloropropane | ND | | 500 | 486.3 | | ug/L | | 97 | 65 - 131 | 6 | 19 |
| trans-1,3-Dichloropropene | ND | | 500 | 404.6 | | ug/L | | 81 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 63.8 | | 500 | 552.1 | | ug/L | | 98 | 64 - 136 | 4 | 18 |
| Trichloroethene | ND | | 500 | 429.0 | | ug/L | | 86 | 63 - 135 | 5 | 17 |
| 1,3,5-Trimethylbenzene | 127 | | 500 | 703.3 | | ug/L | | 115 | 69 - 139 | 3 | 17 |
| Trichlorofluoromethane | ND | | 500 | 443.1 | | ug/L | | 89 | 44 - 150 | 5 | 32 |
| Vinyl chloride | ND | | 500 | 465.9 | | ug/L | | 93 | 57 - 150 | 6 | 37 |
| Xylenes, Total | 259 | | 1000 | 1126 | | ug/L | | 87 | 69 - 132 | 6 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *91* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/20/16 15:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/20/16 15:08* | *1* |

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.99 | | ug/L | | 100 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.28 | | ug/L | | 101 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 105.4 | | ug/L | | 105 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 21.29 | | ug/L | | 106 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 26.19 | * | ug/L | | 131 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 21.90 | | ug/L | | 109 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 21.79 | | ug/L | | 109 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 23.53 | | ug/L | | 118 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 21.84 | | ug/L | | 109 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 19.28 | | ug/L | | 96 | 70 - 130 |
| Acetone | 100 | 105.1 | | ug/L | | 105 | 39 - 150 |
| Benzene | 20.0 | 20.04 | | ug/L | | 100 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 20.67 | | ug/L | | 103 | 70 - 132 |
| Bromobenzene | 20.0 | 21.65 | | ug/L | | 108 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 21.14 | | ug/L | | 106 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.70 | | ug/L | | 94 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 20.84 | | ug/L | | 104 | 70 - 130 |
| Bromodichloromethane | 20.0 | 19.01 | | ug/L | | 95 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 19.70 | | ug/L | | 99 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.64 | | ug/L | | 103 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 20.40 | | ug/L | | 102 | 70 - 130 |
| Bromomethane | 20.0 | 14.67 | | ug/L | | 73 | 53 - 150 |
| Carbon disulfide | 20.0 | 23.29 | | ug/L | | 116 | 64 - 135 |
| Diisopropyl ether | 20.0 | 19.76 | | ug/L | | 99 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 19.58 | | ug/L | | 98 | 70 - 147 |
| Chlorobenzene | 20.0 | 21.59 | | ug/L | | 108 | 70 - 130 |
| 2-Hexanone | 100 | 100.6 | | ug/L | | 101 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 22.17 | | ug/L | | 111 | 70 - 133 |
| Chloroethane | 20.0 | 20.58 | | ug/L | | 103 | 60 - 138 |
| Chloroform | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 101.4 | | ug/L | | 101 | 60 - 137 |
| Chloromethane | 20.0 | 20.03 | | ug/L | | 100 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 21.04 | | ug/L | | 105 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 20.53 | | ug/L | | 103 | 70 - 133 |
| Dibromomethane | 20.0 | 19.09 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.60 | | ug/L | | 88 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.90 | | ug/L | | 99 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 20.61 | | ug/L | | 103 | 70 - 138 |
| Isopropylbenzene | 20.0 | 19.49 | | ug/L | | 97 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.20 | | ug/L | | 106 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 18.33 | | ug/L | | 92 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 23.58 | | ug/L | | 118 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 |
| Naphthalene | 20.0 | 18.07 | | ug/L | | 90 | 54 - 150 |
| n-Butylbenzene | 20.0 | 23.89 | | ug/L | | 119 | 68 - 137 |
| N-Propylbenzene | 20.0 | 23.51 | | ug/L | | 118 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 22.89 | | ug/L | | 114 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 23.09 | | ug/L | | 115 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 |
| Styrene | 20.0 | 20.75 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.81 | | ug/L | | 94 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 22.98 | | ug/L | | 115 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 18.95 | | ug/L | | 95 | 70 - 135 |
| Tetrachloroethene | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.96 | | ug/L | | 105 | 70 - 130 |
| Toluene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 21.56 | | ug/L | | 108 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.47 | | ug/L | | 107 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 19.66 | | ug/L | | 98 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.61 | | ug/L | | 113 | 70 - 130 |
| Trichloroethene | 20.0 | 19.31 | | ug/L | | 97 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 20.12 | | ug/L | | 101 | 59 - 150 |
| Vinyl chloride | 20.0 | 20.64 | | ug/L | | 103 | 57 - 137 |
| Xylenes, Total | 40.0 | 40.30 | | ug/L | | 101 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 110 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 93 | | 70 - 130 |
| Toluene-d8 (Surr) | 101 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 20.67 | | ug/L | | 103 | 45 - 138 | 3 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.43 | | ug/L | | 102 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 107.8 | | ug/L | | 108 | 55 - 143 | 2 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 21.39 | | ug/L | | 107 | 70 - 130 | 0 | 12 |
| 2-Chlorotoluene | 20.0 | 26.27 | * | ug/L | | 131 | 70 - 130 | 0 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 21.92 | | ug/L | | 110 | 70 - 130 | 0 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 21.88 | | ug/L | | 109 | 70 - 130 | 0 | 12 |
| 4-Chlorotoluene | 20.0 | 23.38 | | ug/L | | 117 | 70 - 130 | 1 | 15 |
| 1,1-Dichloroethane | 20.0 | 23.16 | | ug/L | | 116 | 70 - 130 | 6 | 17 |
| 1,2-Dichloroethane | 20.0 | 20.06 | | ug/L | | 100 | 70 - 130 | 4 | 13 |
| Acetone | 100 | 103.4 | | ug/L | | 103 | 39 - 150 | 2 | 23 |
| Benzene | 20.0 | 20.78 | | ug/L | | 104 | 70 - 130 | 4 | 12 |
| 1,1-Dichloroethene | 20.0 | 21.75 | | ug/L | | 109 | 70 - 132 | 5 | 20 |
| Bromobenzene | 20.0 | 21.16 | | ug/L | | 106 | 70 - 130 | 2 | 16 |
| 1,2-Dichloropropane | 20.0 | 21.94 | | ug/L | | 110 | 70 - 130 | 4 | 15 |
| Bromochloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 5 | 16 |
| 1,3-Dichloropropane | 20.0 | 20.80 | | ug/L | | 104 | 70 - 130 | 0 | 12 |
| Bromodichloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 3 | 14 |
| 2,2-Dichloropropane | 20.0 | 20.29 | | ug/L | | 101 | 60 - 143 | 3 | 20 |
| Bromoform | 20.0 | 21.58 | | ug/L | | 108 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 | 3 | 16 |
| Bromomethane | 20.0 | 15.79 | | ug/L | | 79 | 53 - 150 | 7 | 19 |
| Carbon disulfide | 20.0 | 24.04 | | ug/L | | 120 | 64 - 135 | 3 | 16 |
| Diisopropyl ether | 20.0 | 20.69 | | ug/L | | 103 | 66 - 142 | 5 | 14 |
| Carbon tetrachloride | 20.0 | 20.59 | | ug/L | | 103 | 70 - 147 | 5 | 16 |
| Chlorobenzene | 20.0 | 21.82 | | ug/L | | 109 | 70 - 130 | 1 | 12 |
| 2-Hexanone | 100 | 100.3 | | ug/L | | 100 | 54 - 142 | 0 | 17 |
| Chlorodibromomethane | 20.0 | 22.38 | | ug/L | | 112 | 70 - 133 | 1 | 13 |
| Chloroethane | 20.0 | 21.71 | | ug/L | | 109 | 60 - 138 | 5 | 15 |
| Chloroform | 20.0 | 20.97 | | ug/L | | 105 | 70 - 130 | 3 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 103.4 | | ug/L | | 103 | 60 - 137 | 2 | 21 |
| Chloromethane | 20.0 | 21.02 | | ug/L | | 105 | 33 - 150 | 5 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 22.50 | | ug/L | | 113 | 70 - 130 | 7 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 21.46 | | ug/L | | 107 | 70 - 133 | 4 | 15 |
| Dibromomethane | 20.0 | 19.80 | | ug/L | | 99 | 70 - 130 | 4 | 14 |
| Dichlorodifluoromethane | 20.0 | 19.62 | | ug/L | | 98 | 48 - 150 | 11 | 16 |
| Ethylbenzene | 20.0 | 20.69 | | ug/L | | 103 | 70 - 130 | 4 | 12 |
| Hexachlorobutadiene | 20.0 | 21.00 | | ug/L | | 105 | 70 - 138 | 2 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 131 | 5 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 22.24 | | ug/L | | 111 | 70 - 130 | 5 | 13 |
| Methyl tert-butyl ether | 20.0 | 18.93 | | ug/L | | 95 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 23.67 | | ug/L | | 118 | 69 - 131 | 0 | 15 |
| Methylene Chloride | 20.0 | 22.07 | | ug/L | | 110 | 70 - 130 | 11 | 15 |
| Naphthalene | 20.0 | 17.65 | | ug/L | | 88 | 54 - 150 | 2 | 15 |
| n-Butylbenzene | 20.0 | 24.40 | | ug/L | | 122 | 68 - 137 | 2 | 14 |
| N-Propylbenzene | 20.0 | 23.61 | | ug/L | | 118 | 70 - 134 | 0 | 14 |
| p-Isopropyltoluene | 20.0 | 23.00 | | ug/L | | 115 | 66 - 130 | 0 | 13 |
| sec-Butylbenzene | 20.0 | 23.33 | | ug/L | | 117 | 70 - 135 | 1 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 | 0 | 16 |
| Styrene | 20.0 | 21.37 | | ug/L | | 107 | 70 - 130 | 3 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.86 | | ug/L | | 94 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 19.45 | | ug/L | | 97 | 70 - 135 | 3 | 15 |
| Tetrachloroethene | 20.0 | 19.75 | | ug/L | | 99 | 70 - 130 | 2 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 21.09 | | ug/L | | 105 | 70 - 130 | 1 | 13 |
| Toluene | 20.0 | 20.90 | | ug/L | | 104 | 70 - 130 | 1 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 22.49 | | ug/L | | 112 | 70 - 130 | 4 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 22.15 | | ug/L | | 111 | 70 - 131 | 3 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 19.56 | | ug/L | | 98 | 63 - 142 | 0 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.60 | | ug/L | | 113 | 70 - 130 | 0 | 13 |
| Trichloroethene | 20.0 | 20.22 | | ug/L | | 101 | 70 - 130 | 5 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 23.07 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| Trichlorofluoromethane | 20.0 | 19.99 | | ug/L | | 100 | 59 - 150 | 1 | 22 |
| Vinyl chloride | 20.0 | 21.16 | | ug/L | | 106 | 57 - 137 | 3 | 15 |
| Xylenes, Total | 40.0 | 41.51 | | ug/L | | 104 | 70 - 132 | 3 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2561 | | ug/L | | 102 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2425 | | ug/L | | 97 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 12500 | 11740 | | ug/L | | 94 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 70 - 130 |
| 2-Chlorotoluene | ND | * | 2500 | 3139 | | ug/L | | 126 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2647 | | ug/L | | 106 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 130 |
| 4-Chlorotoluene | ND | | 2500 | 2816 | | ug/L | | 113 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 2500 | 2819 | | ug/L | | 113 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 2500 | 2418 | | ug/L | | 97 | 64 - 136 |
| Acetone | ND | | 12500 | 10730 | | ug/L | | 86 | 39 - 150 |
| Benzene | 356 | | 2500 | 2786 | | ug/L | | 97 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 2500 | 2696 | | ug/L | | 108 | 54 - 150 |
| Bromobenzene | ND | | 2500 | 2611 | | ug/L | | 104 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 2500 | 2622 | | ug/L | | 105 | 67 - 130 |
| Bromochloromethane | ND | | 2500 | 2402 | | ug/L | | 96 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 2500 | 2529 | | ug/L | | 101 | 70 - 130 |
| Bromodichloromethane | ND | | 2500 | 2411 | | ug/L | | 96 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 2500 | 2419 | | ug/L | | 97 | 50 - 146 |
| Bromoform | ND | | 2500 | 2499 | | ug/L | | 100 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 2500 | 2564 | | ug/L | | 103 | 54 - 150 |
| Bromomethane | ND | | 2500 | 2458 | | ug/L | | 98 | 30 - 150 |
| Carbon disulfide | ND | | 2500 | 3010 | | ug/L | | 120 | 35 - 150 |
| Diisopropyl ether | ND | | 2500 | 2389 | | ug/L | | 96 | 56 - 142 |
| Carbon tetrachloride | ND | | 2500 | 2546 | | ug/L | | 102 | 56 - 150 |
| Chlorobenzene | ND | | 2500 | 2614 | | ug/L | | 105 | 70 - 130 |
| 2-Hexanone | ND | | 12500 | 11860 | | ug/L | | 95 | 44 - 150 |
| Chlorodibromomethane | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 140 |
| Chloroethane | ND | | 2500 | 2662 | | ug/L | | 106 | 58 - 141 |
| Chloroform | ND | | 2500 | 2526 | | ug/L | | 101 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12000 | | ug/L | | 96 | 50 - 140 |
| Chloromethane | ND | | 2500 | 2806 | | ug/L | | 112 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2666 | | ug/L | | 106 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2539 | | ug/L | | 102 | 70 - 133 |
| Dibromomethane | ND | | 2500 | 2370 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 2500 | 2458 | | ug/L | | 98 | 10 - 150 |
| Ethylbenzene | 370 | | 2500 | 2821 | | ug/L | | 98 | 65 - 139 |
| Hexachlorobutadiene | ND | | 2500 | 2582 | | ug/L | | 103 | 61 - 141 |
| Isopropylbenzene | ND | | 2500 | 2479 | | ug/L | | 99 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2729 | | ug/L | | 109 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 2500 | 2186 | | ug/L | | 87 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2820 | | ug/L | | 113 | 56 - 145 |
| Methylene Chloride | ND | | 2500 | 2625 | | ug/L | | 105 | 64 - 130 |
| Naphthalene | 4710 | | 2500 | 7086 | | ug/L | | 95 | 32 - 150 |
| n-Butylbenzene | ND | | 2500 | 2951 | | ug/L | | 118 | 61 - 141 |
| N-Propylbenzene | ND | | 2500 | 2804 | | ug/L | | 112 | 53 - 150 |
| p-Isopropyltoluene | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 137 |
| sec-Butylbenzene | ND | | 2500 | 2828 | | ug/L | | 113 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2200 | | ug/L | | 88 | 36 - 150 |
| Styrene | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2402 | | ug/L | | 96 | 47 - 147 |
| tert-Butylbenzene | ND | | 2500 | 2831 | | ug/L | | 113 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2428 | | ug/L | | 97 | 68 - 144 |
| Tetrachloroethene | ND | | 2500 | 2436 | | ug/L | | 97 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2550 | | ug/L | | 102 | 70 - 130 |
| Toluene | ND | | 2500 | 2538 | | ug/L | | 101 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2807 | | ug/L | | 112 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 2500 | 2653 | | ug/L | | 106 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2419 | | ug/L | | 97 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2796 | | ug/L | | 110 | 64 - 136 |
| Trichloroethene | ND | | 2500 | 2465 | | ug/L | | 98 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2820 | | ug/L | | 112 | 69 - 139 |
| Trichlorofluoromethane | ND | | 2500 | 2629 | | ug/L | | 105 | 44 - 150 |
| Vinyl chloride | ND | | 2500 | 2759 | | ug/L | | 110 | 57 - 150 |
| Xylenes, Total | 273 | | 5000 | 5330 | | ug/L | | 101 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2800 | | ug/L | | 112 | 38 - 138 | 9 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2541 | | ug/L | | 102 | 65 - 137 | 5 | 21 |
| 2-Butanone (MEK) | ND | | 12500 | 12280 | | ug/L | | 98 | 50 - 143 | 4 | 28 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2675 | | ug/L | | 107 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | * | 2500 | 3342 | | ug/L | | 134 | 67 - 138 | 6 | 17 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2781 | | ug/L | | 111 | 68 - 131 | 5 | 14 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2723 | | ug/L | | 109 | 70 - 130 | 2 | 14 |
| 4-Chlorotoluene | ND | | 2500 | 2934 | | ug/L | | 117 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 2500 | 2896 | | ug/L | | 116 | 61 - 139 | 3 | 23 |
| 1,2-Dichloroethane | ND | | 2500 | 2501 | | ug/L | | 100 | 64 - 136 | 3 | 22 |
| Acetone | ND | | 12500 | 10430 | | ug/L | | 83 | 39 - 150 | 3 | 28 |
| Benzene | 356 | | 2500 | 3040 | | ug/L | | 107 | 55 - 147 | 9 | 22 |
| 1,1-Dichloroethene | ND | | 2500 | 2776 | | ug/L | | 111 | 54 - 150 | 3 | 24 |
| Bromobenzene | ND | | 2500 | 2717 | | ug/L | | 109 | 60 - 133 | 4 | 18 |
| 1,2-Dichloropropane | ND | | 2500 | 2675 | | ug/L | | 107 | 67 - 130 | 2 | 19 |
| Bromochloromethane | ND | | 2500 | 2476 | | ug/L | | 99 | 59 - 132 | 3 | 21 |
| 1,3-Dichloropropane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 2 | 17 |
| Bromodichloromethane | ND | | 2500 | 2497 | | ug/L | | 100 | 70 - 140 | 3 | 196 |
| 2,2-Dichloropropane | ND | | 2500 | 2437 | | ug/L | | 97 | 50 - 146 | 1 | 20 |
| Bromoform | ND | | 2500 | 2582 | | ug/L | | 103 | 53 - 150 | 3 | 20 |
| 1,1-Dichloropropene | ND | | 2500 | 2647 | | ug/L | | 106 | 54 - 150 | 3 | 24 |
| Bromomethane | ND | | 2500 | 2533 | | ug/L | | 101 | 30 - 150 | 3 | 44 |
| Carbon disulfide | ND | | 2500 | 3073 | | ug/L | | 123 | 35 - 150 | 2 | 34 |
| Diisopropyl ether | ND | | 2500 | 2468 | | ug/L | | 99 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 2500 | 2688 | | ug/L | | 108 | 56 - 150 | 5 | 18 |
| Chlorobenzene | ND | | 2500 | 2692 | | ug/L | | 108 | 70 - 130 | 3 | 15 |
| 2-Hexanone | ND | | 12500 | 12390 | | ug/L | | 99 | 44 - 150 | 4 | 21 |
| Chlorodibromomethane | ND | | 2500 | 2848 | | ug/L | | 114 | 66 - 140 | 2 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 2500 | 2693 | | ug/L | | 108 | 58 - 141 | 1 | 31 |
| Chloroform | ND | | 2500 | 2581 | | ug/L | | 103 | 66 - 138 | 2 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12700 | | ug/L | | 102 | 50 - 140 | 6 | 24 |
| Chloromethane | ND | | 2500 | 2935 | | ug/L | | 117 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2715 | | ug/L | | 108 | 68 - 131 | 2 | 21 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 133 | 5 | 19 |
| Dibromomethane | ND | | 2500 | 2426 | | ug/L | | 97 | 70 - 130 | 2 | 19 |
| Dichlorodifluoromethane | ND | | 2500 | 2510 | | ug/L | | 100 | 10 - 150 | 2 | 50 |
| Ethylbenzene | 370 | | 2500 | 2884 | | ug/L | | 101 | 65 - 139 | 2 | 18 |
| Hexachlorobutadiene | ND | | 2500 | 2743 | | ug/L | | 110 | 61 - 141 | 6 | 26 |
| Isopropylbenzene | ND | | 2500 | 2562 | | ug/L | | 102 | 70 - 137 | 3 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2814 | | ug/L | | 113 | 70 - 131 | 3 | 16 |
| Methyl tert-butyl ether | ND | | 2500 | 2259 | | ug/L | | 90 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2931 | | ug/L | | 117 | 56 - 145 | 4 | 19 |
| Methylene Chloride | ND | | 2500 | 2671 | | ug/L | | 107 | 64 - 130 | 2 | 22 |
| Naphthalene | 4710 | | 2500 | 7439 | | ug/L | | 109 | 32 - 150 | 5 | 40 |
| n-Butylbenzene | ND | | 2500 | 3097 | | ug/L | | 124 | 61 - 141 | 5 | 17 |
| N-Propylbenzene | ND | | 2500 | 2933 | | ug/L | | 117 | 53 - 150 | 4 | 18 |
| p-Isopropyltoluene | ND | | 2500 | 2917 | | ug/L | | 117 | 66 - 137 | 4 | 16 |
| sec-Butylbenzene | ND | | 2500 | 2945 | | ug/L | | 118 | 55 - 136 | 4 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2452 | | ug/L | | 98 | 36 - 150 | 11 | 43 |
| Styrene | ND | | 2500 | 2636 | | ug/L | | 105 | 70 - 130 | 2 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 47 - 147 | 7 | 24 |
| tert-Butylbenzene | ND | | 2500 | 2953 | | ug/L | | 118 | 70 - 138 | 4 | 17 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2503 | | ug/L | | 100 | 68 - 144 | 3 | 17 |
| Tetrachloroethene | ND | | 2500 | 2525 | | ug/L | | 101 | 57 - 138 | 4 | 17 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 1 | 18 |
| Toluene | ND | | 2500 | 2628 | | ug/L | | 104 | 64 - 136 | 3 | 18 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2854 | | ug/L | | 114 | 59 - 143 | 2 | 25 |
| 1,2,3-Trichloropropane | ND | | 2500 | 2759 | | ug/L | | 110 | 65 - 131 | 4 | 19 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2517 | | ug/L | | 101 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2919 | | ug/L | | 114 | 64 - 136 | 4 | 18 |
| Trichloroethene | ND | | 2500 | 2519 | | ug/L | | 100 | 63 - 135 | 2 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2802 | | ug/L | | 111 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 2500 | 2665 | | ug/L | | 107 | 44 - 150 | 1 | 32 |
| Vinyl chloride | ND | | 2500 | 2770 | | ug/L | | 111 | 57 - 150 | 0 | 37 |
| Xylenes, Total | 273 | | 5000 | 5492 | | ug/L | | 104 | 69 - 132 | 3 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 490-387412/3**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | | 1.00 | | mg/L | | | 11/16/16 23:50 | 1 |

**Lab Sample ID: LCS 490-387412/4**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.697 | | mg/L | | 97 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387412/5**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.781 | | mg/L | | 98 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | F1 | 2.00 | 2.714 | F1 | mg/L | | 136 | 80 - 120 | | |

**Lab Sample ID: MB 490-387413/3**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/16/16 23:50 | 1 |

**Lab Sample ID: LCS 490-387413/4**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9537 | | mg/L | | 95 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387413/5**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9641 | | mg/L | | 96 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.200 | 0.1690 | | mg/L | | 85 | 80 - 120 | | |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 490-388719/1-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 02:55 | 1 |

**Lab Sample ID: LCS 490-388719/2-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5187 | | mg/L | | 104 | 80 - 120 | | |

**Lab Sample ID: LCSD 490-388719/3-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5219 | | mg/L | | 104 | 80 - 120 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.279 | 4 | mg/L | | 94 | 75 - 125 | | |

**Lab Sample ID: 490-116230-1 MSD**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.364 | 4 | mg/L | | 111 | 75 - 125 | 3 | 20 |

**Lab Sample ID: MB 490-388942/1-A**
**Matrix: Water**
**Analysis Batch: 389560**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 388942**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/22/16 15:30 | 11/23/16 22:45 | 1 |

**Lab Sample ID: LCS 490-388942/2-A**
**Matrix: Water**
**Analysis Batch: 389560**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 388942**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5195 | | mg/L | | 104 | 80 - 120 | | |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 490-116230-4 MS** — **Client Sample ID: MW-19**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389560** — **Prep Batch: 388942**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.43 | | 0.500 | 2.935 | 4 | mg/L | | 101 | 75 - 125 |

**Lab Sample ID: 490-116230-4 MSD** — **Client Sample ID: MW-19**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389560** — **Prep Batch: 388942**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.43 | | 0.500 | 2.953 | 4 | mg/L | | 104 | 75 - 125 | 1 | 20 |

**Lab Sample ID: MB 490-389505/1-A** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/25/16 07:34 | 11/28/16 12:19 | 1 |

**Lab Sample ID: LCS 490-389505/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.4780 | | mg/L | | 96 | 80 - 120 |

**Lab Sample ID: 490-116613-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9980 | | mg/L | | 92 | 75 - 125 |

**Lab Sample ID: 490-116613-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9884 | | mg/L | | 90 | 75 - 125 | 1 | 20 |

## Method: SM 2320B - Alkalinity

**Lab Sample ID: LCS 490-389383/7** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389383**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 99.63 | | mg/L | | 100 | 90 - 110 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: LCSD 490-389383/29**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 98.51 | | mg/L | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116395-L-10 DU**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | ND | | | ND | | mg/L | | | | NC | 20 |

## Method: SM 3500 Fe B - Iron, Ferrous

**Lab Sample ID: MB 490-389051/1**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 0.100 | | mg/L | | | 11/22/16 18:59 | 1 |

**Lab Sample ID: LCS 490-389051/2**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 0.9490 | | mg/L | | 94 | 80 - 120 | | |

**Lab Sample ID: LCSD 490-389051/3**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 1.025 | | mg/L | | 101 | 80 - 120 | 8 | 20 |

**Lab Sample ID: 490-116300-D-2 MS**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9420 | | mg/L | | 93 | 75 - 125 | | |

**Lab Sample ID: 490-116300-D-2 MSD**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9880 | | mg/L | | 98 | 75 - 125 | 5 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: SM 3500 Fe B - Iron, Ferrous (Continued)

**Lab Sample ID: 490-116219-B-6 DU**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 6.47 | | | 6.198 | | mg/L | | | | 4 | 20 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## GC/MS VOA

### Analysis Batch: 388091

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-6 | Trip Blank | Total/NA | Water | 8260B | |
| MB 490-388091/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388091/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388091/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 8260B | |

### Analysis Batch: 388100

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 8260B | |
| 490-116230-2 | MW-3 | Total/NA | Water | 8260B | |
| 490-116230-3 | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-5 | MW-20 | Total/NA | Water | 8260B | |
| MB 490-388100/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388100/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388100/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-3 MS | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-3 MSD | MW-3D | Total/NA | Water | 8260B | |

### Analysis Batch: 388378

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-3 | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-4 | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-5 | MW-20 | Total/NA | Water | 8260B | |
| MB 490-388378/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388378/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388378/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-3 MS | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-3 MSD | MW-3D | Total/NA | Water | 8260B | |

## HPLC/IC

### Analysis Batch: 387412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 300.0 | |
| 490-116230-2 | MW-3 | Total/NA | Water | 300.0 | |
| 490-116230-3 | MW-3D | Total/NA | Water | 300.0 | |
| 490-116230-4 | MW-19 | Total/NA | Water | 300.0 | |
| 490-116230-5 | MW-20 | Total/NA | Water | 300.0 | |
| MB 490-387412/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-387412/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387412/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 300.0 | |

### Analysis Batch: 387413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 300.0 | |
| 490-116230-2 | MW-3 | Total/NA | Water | 300.0 | |
| 490-116230-3 | MW-3D | Total/NA | Water | 300.0 | |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## HPLC/IC (Continued)

### Analysis Batch: 387413 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 300.0 | |
| 490-116230-5 | MW-20 | Total/NA | Water | 300.0 | |
| MB 490-387413/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-387413/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387413/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 300.0 | |

## Metals

### Prep Batch: 388719

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 3010A | |
| 490-116230-2 | MW-3 | Total/NA | Water | 3010A | |
| 490-116230-3 | MW-3D | Total/NA | Water | 3010A | |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 3010A | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 3010A | |
| 490-116230-1 MSD | MW-1 | Total/NA | Water | 3010A | |

### Prep Batch: 388942

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 3010A | |
| MB 490-388942/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-388942/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 3010A | |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 3010A | |

### Prep Batch: 389505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-5 | MW-20 | Total/NA | Water | 3010A | |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 3010A | |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 3010A | |

### Analysis Batch: 389560

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 6010C | 388942 |
| MB 490-388942/1-A | Method Blank | Total/NA | Water | 6010C | 388942 |
| LCS 490-388942/2-A | Lab Control Sample | Total/NA | Water | 6010C | 388942 |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 6010C | 388942 |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 6010C | 388942 |

### Analysis Batch: 389814

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 6010C | 388719 |
| 490-116230-2 | MW-3 | Total/NA | Water | 6010C | 388719 |
| 490-116230-3 | MW-3D | Total/NA | Water | 6010C | 388719 |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 6010C | 388719 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Metals (Continued)

### Analysis Batch: 389814 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 6010C | 388719 |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 6010C | 388719 |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 6010C | 388719 |
| 490-116230-1 MSD | MW-1 | Total/NA | Water | 6010C | 388719 |

### Analysis Batch: 390238

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-5 | MW-20 | Total/NA | Water | 6010C | 389505 |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 6010C | 389505 |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 6010C | 389505 |

## General Chemistry

### Analysis Batch: 389051

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-2 | MW-3 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-3 | MW-3D | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-4 | MW-19 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-5 | MW-20 | Total/NA | Water | SM 3500 Fe B | |
| MB 490-389051/1 | Method Blank | Total/NA | Water | SM 3500 Fe B | |
| LCS 490-389051/2 | Lab Control Sample | Total/NA | Water | SM 3500 Fe B | |
| LCSD 490-389051/3 | Lab Control Sample Dup | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MS | Matrix Spike | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MSD | Matrix Spike Duplicate | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-B-6 DU | Duplicate | Total/NA | Water | SM 3500 Fe B | |

### Analysis Batch: 389383

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | SM 2320B | |
| 490-116230-2 | MW-3 | Total/NA | Water | SM 2320B | |
| 490-116230-3 | MW-3D | Total/NA | Water | SM 2320B | |
| 490-116230-4 | MW-19 | Total/NA | Water | SM 2320B | |
| 490-116230-5 | MW-20 | Total/NA | Water | SM 2320B | |
| LCS 490-389383/7 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCSD 490-389383/29 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116395-L-10 DU | Duplicate | Total/NA | Water | SM 2320B | |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-1
**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-1**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:06 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 02:48 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 02:48 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 03:32 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 12:51 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-3
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-2**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388100 | 11/19/16 19:29 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 03:21 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 03:21 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 03:57 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 12:58 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-3D
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-3**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:33 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 16:53 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 03:43 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 03:43 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:02 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:04 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-19
**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388091 | 11/19/16 10:46 | BBR | TAL NSH |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-19

**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 17:19 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 04:05 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 04:05 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388942 | 11/22/16 15:30 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389560 | 11/23/16 23:01 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:10 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-20

**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-5**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:59 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 17:46 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 04:28 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 04:28 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389505 | 11/25/16 07:59 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390238 | 11/28/16 14:01 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:16 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: Trip Blank

**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-6**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388091 | 11/19/16 04:13 | BBR | TAL NSH |

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Method Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL NSH |
| 6010C | Metals (ICP) | SW846 | TAL NSH |
| SM 2320B | Alkalinity | SM | TAL NSH |
| SM 3500 Fe B | Iron, Ferrous | SM | TAL NSH |

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Certification Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| A2LA | A2LA | | NA: NELAP & A2LA | 12-31-17 |
| A2LA | ISO/IEC 17025 | | 0453.07 | 12-31-17 |
| Alaska (UST) | State Program | 10 | UST-087 | 07-24-17 |
| Arizona | State Program | 9 | AZ0473 | 05-05-17 |
| Arkansas DEQ | State Program | 6 | 88-0737 | 04-25-17 |
| California | State Program | 9 | 2938 | 10-31-16 * |
| Connecticut | State Program | 1 | PH-0220 | 12-31-17 |
| Florida | NELAP | 4 | E87358 | 06-30-17 |
| Georgia | State Program | 4 | N/A | 12-31-17 |
| Illinois | NELAP | 5 | 200010 | 12-09-16 * |
| Iowa | State Program | 7 | 131 | 04-01-18 |
| Kansas | NELAP | 7 | E-10229 | 10-31-17 |
| Kentucky (UST) | State Program | 4 | 19 | 06-30-17 |
| Kentucky (WW) | State Program | 4 | 90038 | 12-31-16 * |
| Louisiana | NELAP | 6 | 30613 | 06-30-17 |
| Maine | State Program | 1 | TN00032 | 11-03-17 |
| Maryland | State Program | 3 | 316 | 03-31-17 |
| Massachusetts | State Program | 1 | M-TN032 | 06-30-17 |
| Minnesota | NELAP | 5 | 047-999-345 | 12-31-16 * |
| Mississippi | State Program | 4 | N/A | 06-30-17 |
| Montana (UST) | State Program | 8 | NA | 02-24-20 |
| Nevada | State Program | 9 | TN00032 | 07-31-17 |
| New Hampshire | NELAP | 1 | 2963 | 10-09-17 |
| New Jersey | NELAP | 2 | TN965 | 06-30-17 |
| New York | NELAP | 2 | 11342 | 03-31-17 |
| North Carolina (WW/SW) | State Program | 4 | 387 | 12-31-16 * |
| North Dakota | State Program | 8 | R-146 | 06-30-17 |
| Ohio VAP | State Program | 5 | CL0033 | 07-10-17 |
| Oklahoma | State Program | 6 | 9412 | 08-31-17 |
| Oregon | NELAP | 10 | TN200001 | 04-27-17 |
| Pennsylvania | NELAP | 3 | 68-00585 | 06-30-17 |
| Rhode Island | State Program | 1 | LAO00268 | 12-30-16 * |
| South Carolina | State Program | 4 | 84009 (001) | 02-18-17 |
| South Carolina (Do Not Use - DW) | State Program | 4 | 84009 (002) | 12-16-17 |
| Tennessee | State Program | 4 | 2008 | 02-23-17 |
| Texas | NELAP | 6 | T104704077 | 08-31-17 |
| USDA | Federal | | P330-13-00306 | 12-01-16 * |
| Utah | NELAP | 8 | TN00032 | 07-31-17 |
| Virginia | NELAP | 3 | 460152 | 06-14-17 |
| Washington | State Program | 10 | C789 | 07-19-17 |
| West Virginia DEP | State Program | 3 | 219 | 02-28-17 |
| Wisconsin | State Program | 5 | 998020430 | 08-31-17 |
| Wyoming (UST) | A2LA | 8 | 453.07 | 12-31-17 |

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

# COOLER RECEIPT FORM

490-116230 Chain of Custody

Cooler Received/Opened On 11/16/2016 @ ~~0920~~ 1025 mm 11.16.16

Time Samples Removed From Cooler 1601 Time Samples Placed In Storage 1619 (2 Hour Window)

1. Tracking # 2939 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot HC682547 Chlorine Strip Lot 0613160

2. Temperature of rep. sample or temp blank when opened: 2.9 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 - Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) WD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial) PM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) PM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) PM

I certify that I attached a label with the unique LIMS number to each container (intial) PM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

Revised 12/15/15

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

# Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

| Client | Project Manager | Date | Chain of Custody Number |
|---|---|---|---|
| DUKE ENERGY (S+ME) | JOHN WHITEHEAD | 11.15.16 | 302118 |

| Address | Telephone Number (Area Code)/Fax Number | Lab Number | Page |
|---|---|---|---|
| 301 ZIMA PARK DR. | (864) 574-2300 / 576-8730 | | Page 1 of 1 |

| City | State | Zip Code | Site Contact | Lab Contact |
|---|---|---|---|---|
| SPARTANBURG | SC | 29301 | S. GORETOY | CANDACE BONHAM |

| Project Name and Location (State) | Carrier/Waybill Number |
|---|---|
| BRAMLETTE ROAD MGP SC | FEDEX |

Contract/Purchase Order/Quote No.: ORDER # 00321902

Analysis (Attach list if more space is needed)

Loc: 490
116230

| Sample I.D. No. and Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed | Soil | Containers & Preservatives: Unpres | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | 8260 FULL LIST | NO3/SO4 | ALKALINITY | MANGANESE | FERROUS IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 MW-1 | 11.15.16 | 16:02 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 2 MW-3 | " " | 13:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 3 MW-3D | " " | 12:47 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 4 MW-19 | " " | 15:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 5 MW-20 | " " | 14:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |

Special Instructions/ Conditions of Receipt

project# 490001932

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD

QC Requirements (Specify)

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| 1. Relinquished By | 11.15.16 | 17:52 | 1. Received By | 2.9 11/16/16 | 1025 |
| 2. Relinquished By | | | 2. Received By | | |
| 3. Relinquished By | | | 3. Received By | | |

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

# ANALYTICAL LABORATORY REQUEST FORM (ARF)

| | |
|---|---|
| *(1) Complete all yellow sections of this form. Move through by striking the "TAB" key.* | |
| *(2) Save the file & e-mail to:* | labcustomer@duke-energy.com |
| *Questions / Problems Call:* | 704-875-5245 |

**Duke Energy Completes and sends ARF to the engineering firm**

## Customer Information

| Your Name | Office Phone | Cell Phone |
|---|---|---|
| John Whitehead | 864-574-2360 | 864-580-1429 |
| **Project Name** (Use Remediation&Decommissioning Site Names) | | Your e-Mail Address |
| Bramlette Rd. MGP | | jwhitehead@smeinc.com |

| Duke Vendor Labs & Contact | Accounting Fields | |
|---|---|---|
| *Test America:* ***Candace.Bonham@testamericainc.com*** | Accounting Type | Specific Accounting |
| *Pace:* ***Kevin.Herring@pacelabs.com*** | Operating Unit | |
| *Acutest:* ***Andreac@accutest.com*** | Project ID | |
| *Prism:* ***Aovercash@prismlabs.com*** | Activity ID | |
| | Account | |
| ***Also send copy to - labcustomer@duke-energy.com*** | | |

**Engineering Firm Completes these sections and sends ARF to one of the Duke Vendor Lab Contacts listed above**

## Sampling Information

| Sampling Personnel / Contractor | Scheduled Sampling Date | Date Sample Kit Needed |
|---|---|---|
| scott dacus/ s&me | Week of 11-14-16 | 10/31/2016 |

**Shipping Address for Kit**

| Name | Phone | Mail Code |
|---|---|---|
| S&ME, Inc. | 864-574-2360 | |
| Street Address - 301 Zima Park Road | State | Zip Code |
| Spartanburg | SC | 29301 |

## Reporting

| Report Due Date | Additional Reports - .pdf file w/ Basic QC and EDD (spreadsheet) is Standard | |
|---|---|---|
| | | |
| Report To (e-Mail Address 1) | Report To (e-Mail Address 2) | Report to (e-Mail Address 3) |
| jwhitehead@smeinc.com | larmstrong@smeinc.com | TimHunsucker@duke-energy.com |

## Project Specifics

| Project Name | Program Type |
|---|---|
| Bramlette Rd. MGP | Groundwater |

| Site, Location or Station | State | Approximate Number of Days Sampling is Scheduled |
|---|---|---|
| Greenville | S.C. | 3 |

Notes, Special Requests, Required Contract Lab to use, etc.

S&ME job number 1264-08-105. If you have any questions, please call John Whitehead.

| Bottles | Matrix | Variables, Methods |
|---|---|---|
| 17 (Includes Field Blank) | GW | EPA 8260 - Full List (Please send unpreserved bottles as per SCDHEC regs.) |
| 16 Samples | GW | Nitrate, Sulfate, Ferrous Iron, Alkalinity |
| 16 Samples | GW | Manganese |
| 1 Sample | W | Trip Blank - EPA 8260 (Full List) |
| | | |
| | | **Please send lab grade water for field blank.** |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | IMPORTANT: Include QC samples (duplicates) with regular samples no need to separate |

# Login Sample Receipt Checklist

Client: Duke Energy Corporation

Job Number: 490-116230-1

**Login Number: 116230**
**List Number: 1**
**Creator: Ngo, Phiet**

**List Source: TestAmerica Nashville**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | True | |

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**

**Program Manager: Amanda Payne**

**Order ID**
**J16110471**

*Please contact the Program Manager, Amanda Payne, at 980-875-6995 with any questions regarding this report.*

**Sample Number: 2016037099** **MW-1**

Collected Date: 11/15/2016 02:02 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037100** **MW-3**

Collected Date: 11/15/2016 01:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037101** **MW-3D**

Collected Date: 11/15/2016 12:47 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**
**Program Manager: Amanda Payne**

**Order ID**
**J16110471**

**Sample Number: 2016037102** **MW-19**

Collected Date: 11/15/2016 03:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037103** **MW-20**

Collected Date: 11/15/2016 02:27 PM Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037104** **Trip Blank**

Collected Date: 11/15/2016 Collected By: S&ME Date Received: 11/16/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Program Manager:** **Amanda Payne**
980-875-6995

**Report Authorized By: (Signature)**

Digitally signed by Amanda Payne
Date: 2016.12.06 16:28:09 -05'00'

An EDD has been included with this report.



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-116230-1
Client Project/Site: Bramlett Rd. MGP J16110471

For:
Duke Energy Corporation
13339 Hagers Ferry Road
Huntersville, North Carolina 28078

Attn: Lab Customer

*Authorized for release by:*
*11/30/2016 12:51:06 PM*

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

# Table of Contents

# Sample Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 490-116230-1 | MW-1 | Water | 11/15/16 16:02 | 11/16/16 10:25 |
| 490-116230-2 | MW-3 | Water | 11/15/16 13:27 | 11/16/16 10:25 |
| 490-116230-3 | MW-3D | Water | 11/15/16 12:47 | 11/16/16 10:25 |
| 490-116230-4 | MW-19 | Water | 11/15/16 15:27 | 11/16/16 10:25 |
| 490-116230-5 | MW-20 | Water | 11/15/16 14:27 | 11/16/16 10:25 |
| 490-116230-6 | Trip Blank | Water | 11/15/16 00:01 | 11/16/16 10:25 |

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Job ID: 490-116230-1

**Laboratory: TestAmerica Nashville**

**Narrative**

## CASE NARRATIVE

## Client: Duke Energy Corporation

## Project: Bramlett Rd. MGP J16110471

## Report Number: 490-116230-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Nashville attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

**RECEIPT**
The samples were received on 11/16/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.9 C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4), MW-20 (490-116230-5) and Trip Blank (490-116230-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/19/2016 and 11/20/2016.

2-Chlorotoluene failed the recovery criteria high for LCS 490-388378/3. 2-Chlorotoluene failed the recovery criteria high for LCSD 490-388378/4. Refer to the QC report for details.

Naphthalene failed the recovery criteria high for the MS of sample MW-3DMS (490-116230-3) in batch 490-388100.
Naphthalene failed the recovery criteria high for the MSD of sample MW-3DMSD (490-116230-3) in batch 490-388100. Refer to the QC report for details.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Job ID: 490-116230-1 (Continued)

### Laboratory: TestAmerica Nashville (Continued)

Samples MW-1 (490-116230-1)[10X], MW-3D (490-116230-3)[10X], MW-3D (490-116230-3)[50X], MW-19 (490-116230-4)[10X], MW-19 (490-116230-4)[50X], MW-20 (490-116230-5)[10X] and MW-20 (490-116230-5)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**TOTAL METALS (ICP)**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/22/2016 and 11/25/2016 and analyzed on 11/23/2016, 11/26/2016 and 11/28/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**ALKALINITY**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 11/23/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Sulfate**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

Sulfate failed the recovery criteria high for the MS of sample MW-1MS (490-116230-1) in batch 490-387412. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**Nitrate**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/17/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**FERROUS IRON**
Samples MW-1 (490-116230-1), MW-3 (490-116230-2), MW-3D (490-116230-3), MW-19 (490-116230-4) and MW-20 (490-116230-5) were analyzed for ferrous iron in accordance with SM 3500 F+2 B. The samples were analyzed on 11/22/2016.

Samples MW-1 (490-116230-1)[10X], MW-3 (490-116230-2)[10X], MW-3D (490-116230-3)[10X], MW-19 (490-116230-4)[10X] and MW-20 (490-116230-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |
| * | LCS or LCSD is outside acceptance limits. |

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| F1 | MS and/or MSD Recovery is outside acceptance limits. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-1**
**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-1**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Benzene** | **52.3** | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:06 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Ethylbenzene** | **27.2** | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:06 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| **Naphthalene** | **1500** | | 50.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:06 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-1

**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-1

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Tetrachloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **Toluene** | **22.0** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Trichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **1,2,4-Trimethylbenzene** | **28.9** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **1,3,5-Trimethylbenzene** | **31.8** | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| Vinyl chloride | ND | | 10.0 | ug/L | | | 11/19/16 22:06 | 10 |
| **Xylenes, Total** | **44.1** | | 30.0 | ug/L | | | 11/19/16 22:06 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 22:06* | *10* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 22:06* | *10* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 02:48 | 1 |
| Sulfate | ND | F1 | 1.00 | mg/L | | | 11/17/16 02:48 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **2.81** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 03:32 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **132** | | 10.0 | mg/L | | | 11/23/16 12:51 | 1 |
| **Ferrous Iron** | **27.5** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-3**
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-2**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 19:29 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 19:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-3
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-2
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 19:29 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 19:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/19/16 19:29* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 19:29* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 03:21 | 1 |
| **Sulfate** | **1.31** | | 1.00 | mg/L | | | 11/17/16 03:21 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.749** | | 0.0150 | mg/L | | 11/22/16 09:13 | 11/26/16 03:57 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **364** | | 10.0 | mg/L | | | 11/23/16 12:58 | 1 |
| **Ferrous Iron** | **28.0** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-3D**
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-3**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Benzene** | **296** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:33 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Ethylbenzene** | **331** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:33 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Naphthalene** | **4710** | | 250 | | ug/L | | | 11/20/16 16:53 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **p-Isopropyltoluene** | **10.6** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-3D
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-3
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Tetrachloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Toluene** | **19.6** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Trichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **1,2,4-Trimethylbenzene** | **63.8** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **1,3,5-Trimethylbenzene** | **127** | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| Vinyl chloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:33 | 10 |
| **Xylenes, Total** | **259** | | 30.0 | | ug/L | | | 11/19/16 22:33 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/20/16 16:53* | *50* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/19/16 22:33* | *10* |
| *Toluene-d8 (Surr)* | *111* | | *70 - 130* | | *11/20/16 16:53* | *50* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/17/16 03:43 | 1 |
| Sulfate | ND | | 1.00 | | mg/L | | | 11/17/16 03:43 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.147** | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 04:02 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **81.6** | | 10.0 | | mg/L | | | 11/23/16 13:04 | 1 |
| **Ferrous Iron** | **11.2** | **HF** | 1.00 | | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-19**
**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Benzene** | **42.5** | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 10:46 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Ethylbenzene** | **54.0** | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 10:46 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| **Naphthalene** | **4970** | | 250 | | ug/L | | | 11/20/16 17:19 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 10:46 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-19

**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-4

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Tetrachloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **Toluene** | **34.5** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Trichloroethene | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **1,2,4-Trimethylbenzene** | **38.2** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **1,3,5-Trimethylbenzene** | **66.6** | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| Vinyl chloride | ND | | 10.0 | ug/L | | | 11/19/16 10:46 | 10 |
| **Xylenes, Total** | **76.6** | | 30.0 | ug/L | | | 11/19/16 10:46 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 10:46* | *10* |
| *Toluene-d8 (Surr)* | *109* | | *70 - 130* | | *11/19/16 10:46* | *10* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | mg/L | | | 11/17/16 04:05 | 1 |
| Sulfate | ND | | 1.00 | mg/L | | | 11/17/16 04:05 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **2.43** | | 0.0150 | mg/L | | 11/22/16 15:30 | 11/23/16 23:01 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **133** | | 10.0 | mg/L | | | 11/23/16 13:10 | 1 |
| **Ferrous Iron** | **27.7** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: MW-20**
**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 250 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Benzene** | **414** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromochloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromodichloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromoform | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Bromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Butanone (MEK) | ND | | 500 | | ug/L | | | 11/19/16 22:59 | 10 |
| Carbon disulfide | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Carbon tetrachloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chlorodibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloroform | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Chloromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 4-Chlorotoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| cis-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| cis-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dibromo-3-Chloropropane | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dibromoethane (EDB) | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Dibromomethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,3-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,4-Dichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Dichlorodifluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,3-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2,2-Dichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Diisopropyl ether | ND | | 20.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Ethylbenzene** | **275** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Hexachlorobutadiene | ND | | 20.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 2-Hexanone | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| Isopropylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Methylene Chloride | ND | | 50.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 100 | | ug/L | | | 11/19/16 22:59 | 10 |
| Methyl tert-butyl ether | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Naphthalene** | **5040** | | 250 | | ug/L | | | 11/20/16 17:46 | 50 |
| n-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| N-Propylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| p-Isopropyltoluene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| sec-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Styrene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| tert-Butylbenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,1,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-20
**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-5
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Tetrachloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Toluene** | **41.7** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| trans-1,2-Dichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| trans-1,3-Dichloropropene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,3-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,4-Trichlorobenzene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,1-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,1,2-Trichloroethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Trichloroethene | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Trichlorofluoromethane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| 1,2,3-Trichloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **1,2,4-Trimethylbenzene** | **63.8** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **1,3,5-Trimethylbenzene** | **140** | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| Vinyl chloride | ND | | 10.0 | | ug/L | | | 11/19/16 22:59 | 10 |
| **Xylenes, Total** | **268** | | 30.0 | | ug/L | | | 11/19/16 22:59 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* | | *11/20/16 17:46* | *50* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 22:59* | *10* |
| *Toluene-d8 (Surr)* | *109* | | *70 - 130* | | *11/20/16 17:46* | *50* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/17/16 04:28 | 1 |
| Sulfate | ND | | 1.00 | | mg/L | | | 11/17/16 04:28 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.178** | | 0.0150 | | mg/L | | 11/25/16 07:59 | 11/28/16 14:01 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **70.3** | | 10.0 | | mg/L | | | 11/23/16 13:16 | 1 |
| **Ferrous Iron** | **11.9** | **HF** | 1.00 | | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

**Client Sample ID: Trip Blank**
**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-6**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 04:13 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 04:13 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: Trip Blank

**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

## Lab Sample ID: 490-116230-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | ND | | 5.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Naphthalene | ND | | 5.00 | ug/L | | | 11/19/16 04:13 | 1 |
| n-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| N-Propylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| sec-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 04:13 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 04:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *Dibromofluoromethane (Surr)* | *102* | | *70 - 130* | | *11/19/16 04:13* | *1* |
| *Toluene-d8 (Surr)* | *111* | | *70 - 130* | | *11/19/16 04:13* | *1* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-388091/7**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 02:54 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388091/7**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/19/16 02:54 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/19/16 02:54 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/19/16 02:54* | *1* |
| *Toluene-d8 (Surr)* | *107* | | *70 - 130* | | *11/19/16 02:54* | *1* |

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.56 | | ug/L | | 98 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.23 | | ug/L | | 96 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 104.7 | | ug/L | | 105 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 23.82 | | ug/L | | 119 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.26 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 21.32 | | ug/L | | 107 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 20.51 | | ug/L | | 103 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 18.84 | | ug/L | | 94 | 70 - 130 |
| Acetone | 100 | 100.8 | | ug/L | | 101 | 39 - 150 |
| Benzene | 20.0 | 19.63 | | ug/L | | 98 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 18.02 | | ug/L | | 90 | 70 - 132 |
| Bromobenzene | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.24 | | ug/L | | 91 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 20.33 | | ug/L | | 102 | 70 - 130 |
| Bromodichloromethane | 20.0 | 18.35 | | ug/L | | 92 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 14.93 | | ug/L | | 75 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.71 | | ug/L | | 104 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 18.56 | | ug/L | | 93 | 70 - 130 |
| Bromomethane | 20.0 | 11.77 | | ug/L | | 59 | 53 - 150 |
| Carbon disulfide | 20.0 | 21.31 | | ug/L | | 107 | 64 - 135 |
| Diisopropyl ether | 20.0 | 18.61 | | ug/L | | 93 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 18.16 | | ug/L | | 91 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 |
| 2-Hexanone | 100 | 98.07 | | ug/L | | 98 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 21.63 | | ug/L | | 108 | 70 - 133 |
| Chloroethane | 20.0 | 18.94 | | ug/L | | 95 | 60 - 138 |
| Chloroform | 20.0 | 19.07 | | ug/L | | 95 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 101.0 | | ug/L | | 101 | 60 - 137 |
| Chloromethane | 20.0 | 18.69 | | ug/L | | 93 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.68 | | ug/L | | 98 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 19.32 | | ug/L | | 97 | 70 - 133 |
| Dibromomethane | 20.0 | 18.54 | | ug/L | | 93 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.76 | | ug/L | | 89 | 48 - 150 |
| Ethylbenzene | 20.0 | 18.89 | | ug/L | | 94 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 17.80 | | ug/L | | 89 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.67 | | ug/L | | 93 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.28 | | ug/L | | 106 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 17.82 | | ug/L | | 89 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.46 | | ug/L | | 112 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.95 | | ug/L | | 100 | 70 - 130 |
| Naphthalene | 20.0 | 17.02 | | ug/L | | 85 | 54 - 150 |
| n-Butylbenzene | 20.0 | 20.98 | | ug/L | | 105 | 68 - 137 |
| N-Propylbenzene | 20.0 | 20.78 | | ug/L | | 104 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 20.55 | | ug/L | | 103 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 20.49 | | ug/L | | 102 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.55 | | ug/L | | 88 | 46 - 150 |
| Styrene | 20.0 | 20.23 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.13 | | ug/L | | 86 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 20.41 | | ug/L | | 102 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 17.04 | | ug/L | | 85 | 70 - 135 |
| Tetrachloroethene | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| Toluene | 20.0 | 19.16 | | ug/L | | 96 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 18.25 | | ug/L | | 91 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.27 | | ug/L | | 106 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 18.08 | | ug/L | | 90 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.64 | | ug/L | | 103 | 70 - 130 |
| Trichloroethene | 20.0 | 17.70 | | ug/L | | 89 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.47 | | ug/L | | 122 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 18.12 | | ug/L | | 91 | 59 - 150 |
| Vinyl chloride | 20.0 | 18.98 | | ug/L | | 95 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.44 | | ug/L | | 96 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388091/3**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 105 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 95 | | 70 - 130 |
| Toluene-d8 (Surr) | 103 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388091/4**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.24 | | ug/L | | 96 | 45 - 138 | 2 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.12 | | ug/L | | 96 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 97.12 | | ug/L | | 97 | 55 - 143 | 8 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 19.59 | | ug/L | | 98 | 70 - 130 | 3 | 12 |
| 2-Chlorotoluene | 20.0 | 23.90 | | ug/L | | 120 | 70 - 130 | 0 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 19.99 | | ug/L | | 100 | 70 - 130 | 1 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.25 | | ug/L | | 101 | 70 - 130 | 0 | 12 |
| 4-Chlorotoluene | 20.0 | 21.32 | | ug/L | | 107 | 70 - 130 | 0 | 15 |
| 1,1-Dichloroethane | 20.0 | 20.14 | | ug/L | | 101 | 70 - 130 | 2 | 17 |
| 1,2-Dichloroethane | 20.0 | 18.34 | | ug/L | | 92 | 70 - 130 | 3 | 13 |
| Acetone | 100 | 98.64 | | ug/L | | 99 | 39 - 150 | 2 | 23 |
| Benzene | 20.0 | 19.46 | | ug/L | | 97 | 70 - 130 | 1 | 12 |
| 1,1-Dichloroethene | 20.0 | 18.71 | | ug/L | | 94 | 70 - 132 | 4 | 20 |
| Bromobenzene | 20.0 | 20.01 | | ug/L | | 100 | 70 - 130 | 1 | 16 |
| 1,2-Dichloropropane | 20.0 | 19.18 | | ug/L | | 96 | 70 - 130 | 4 | 15 |
| Bromochloromethane | 20.0 | 17.62 | | ug/L | | 88 | 70 - 130 | 3 | 16 |
| 1,3-Dichloropropane | 20.0 | 19.34 | | ug/L | | 97 | 70 - 130 | 5 | 12 |
| Bromodichloromethane | 20.0 | 17.86 | | ug/L | | 89 | 70 - 130 | 3 | 14 |
| 2,2-Dichloropropane | 20.0 | 15.49 | | ug/L | | 77 | 60 - 143 | 4 | 20 |
| Bromoform | 20.0 | 20.03 | | ug/L | | 100 | 70 - 137 | 3 | 14 |
| 1,1-Dichloropropene | 20.0 | 17.93 | | ug/L | | 90 | 70 - 130 | 3 | 16 |
| Bromomethane | 20.0 | 11.65 | | ug/L | | 58 | 53 - 150 | 1 | 19 |
| Carbon disulfide | 20.0 | 20.79 | | ug/L | | 104 | 64 - 135 | 2 | 16 |
| Diisopropyl ether | 20.0 | 18.46 | | ug/L | | 92 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | 20.0 | 17.85 | | ug/L | | 89 | 70 - 147 | 2 | 16 |
| Chlorobenzene | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 | 2 | 12 |
| 2-Hexanone | 100 | 96.33 | | ug/L | | 96 | 54 - 142 | 2 | 17 |
| Chlorodibromomethane | 20.0 | 20.72 | | ug/L | | 104 | 70 - 133 | 4 | 13 |
| Chloroethane | 20.0 | 18.79 | | ug/L | | 94 | 60 - 138 | 1 | 15 |
| Chloroform | 20.0 | 18.87 | | ug/L | | 94 | 70 - 130 | 1 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 95.59 | | ug/L | | 96 | 60 - 137 | 6 | 21 |
| Chloromethane | 20.0 | 17.47 | | ug/L | | 87 | 33 - 150 | 7 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 19.57 | | ug/L | | 98 | 70 - 130 | 1 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 19.25 | | ug/L | | 96 | 70 - 133 | 0 | 15 |
| Dibromomethane | 20.0 | 17.88 | | ug/L | | 89 | 70 - 130 | 4 | 14 |
| Dichlorodifluoromethane | 20.0 | 17.39 | | ug/L | | 87 | 48 - 150 | 2 | 16 |
| Ethylbenzene | 20.0 | 18.72 | | ug/L | | 94 | 70 - 130 | 1 | 12 |
| Hexachlorobutadiene | 20.0 | 18.57 | | ug/L | | 93 | 70 - 138 | 4 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388091/4**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | | | 20.0 | 18.39 | | ug/L | | 92 | 70 - 131 | 2 | 13 |
| 1,1,1,2-Tetrachloroethane | | | 20.0 | 20.87 | | ug/L | | 104 | 70 - 130 | 2 | 13 |
| Methyl tert-butyl ether | | | 20.0 | 17.22 | | ug/L | | 86 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | | | 20.0 | 21.86 | | ug/L | | 109 | 69 - 131 | 3 | 15 |
| Methylene Chloride | | | 20.0 | 19.29 | | ug/L | | 96 | 70 - 130 | 3 | 15 |
| Naphthalene | | | 20.0 | 16.63 | | ug/L | | 83 | 54 - 150 | 2 | 15 |
| n-Butylbenzene | | | 20.0 | 21.63 | | ug/L | | 108 | 68 - 137 | 3 | 14 |
| N-Propylbenzene | | | 20.0 | 21.00 | | ug/L | | 105 | 70 - 134 | 1 | 14 |
| p-Isopropyltoluene | | | 20.0 | 20.31 | | ug/L | | 102 | 66 - 130 | 1 | 13 |
| sec-Butylbenzene | | | 20.0 | 20.75 | | ug/L | | 104 | 70 - 135 | 1 | 14 |
| 1,2,3-Trichlorobenzene | | | 20.0 | 17.13 | | ug/L | | 86 | 46 - 150 | 2 | 16 |
| Styrene | | | 20.0 | 20.00 | | ug/L | | 100 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | | | 20.0 | 17.16 | | ug/L | | 86 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | | | 20.0 | 20.48 | | ug/L | | 102 | 70 - 130 | 0 | 14 |
| 1,1,1-Trichloroethane | | | 20.0 | 16.82 | | ug/L | | 84 | 70 - 135 | 1 | 15 |
| Tetrachloroethene | | | 20.0 | 17.43 | | ug/L | | 87 | 70 - 130 | 3 | 17 |
| 1,1,2-Trichloroethane | | | 20.0 | 19.43 | | ug/L | | 97 | 70 - 130 | 4 | 13 |
| Toluene | | | 20.0 | 19.09 | | ug/L | | 95 | 70 - 130 | 0 | 13 |
| trans-1,2-Dichloroethene | | | 20.0 | 17.85 | | ug/L | | 89 | 70 - 130 | 2 | 15 |
| 1,2,3-Trichloropropane | | | 20.0 | 20.76 | | ug/L | | 104 | 70 - 131 | 2 | 14 |
| trans-1,3-Dichloropropene | | | 20.0 | 17.22 | | ug/L | | 86 | 63 - 142 | 5 | 13 |
| 1,2,4-Trimethylbenzene | | | 20.0 | 20.63 | | ug/L | | 103 | 70 - 130 | 0 | 13 |
| Trichloroethene | | | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 | 2 | 14 |
| 1,3,5-Trimethylbenzene | | | 20.0 | 24.57 | | ug/L | | 123 | 70 - 130 | 0 | 14 |
| Trichlorofluoromethane | | | 20.0 | 17.29 | | ug/L | | 86 | 59 - 150 | 5 | 22 |
| Vinyl chloride | | | 20.0 | 18.83 | | ug/L | | 94 | 57 - 137 | 1 | 15 |
| Xylenes, Total | | | 40.0 | 38.04 | | ug/L | | 95 | 70 - 132 | 1 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 508.7 | | ug/L | | 102 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 482.1 | | ug/L | | 96 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 2500 | 2441 | | ug/L | | 98 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 500 | 501.6 | | ug/L | | 100 | 70 - 130 |
| 2-Chlorotoluene | ND | | 500 | 603.8 | | ug/L | | 121 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 500 | 518.9 | | ug/L | | 104 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 500 | 504.6 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | ND | | 500 | 540.4 | | ug/L | | 108 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 500 | 542.3 | | ug/L | | 108 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 500 | 464.0 | | ug/L | | 93 | 64 - 136 |
| Acetone | ND | | 2500 | 2003 | | ug/L | | 80 | 39 - 150 |
| Benzene | 42.5 | | 500 | 514.2 | | ug/L | | 94 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 500 | 526.7 | | ug/L | | 105 | 54 - 150 |
| Bromobenzene | ND | | 500 | 504.1 | | ug/L | | 101 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 500 | 509.9 | | ug/L | | 102 | 67 - 130 |
| Bromochloromethane | ND | | 500 | 465.7 | | ug/L | | 93 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 500 | 498.2 | | ug/L | | 100 | 70 - 130 |
| Bromodichloromethane | ND | | 500 | 464.9 | | ug/L | | 93 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 500 | 373.8 | | ug/L | | 75 | 50 - 146 |
| Bromoform | ND | | 500 | 495.7 | | ug/L | | 99 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 500 | 481.5 | | ug/L | | 96 | 54 - 150 |
| Bromomethane | ND | | 500 | 388.9 | | ug/L | | 78 | 30 - 150 |
| Carbon disulfide | ND | | 500 | 576.4 | | ug/L | | 115 | 35 - 150 |
| Diisopropyl ether | ND | | 500 | 468.7 | | ug/L | | 94 | 56 - 142 |
| Carbon tetrachloride | ND | | 500 | 492.0 | | ug/L | | 98 | 56 - 150 |
| Chlorobenzene | ND | | 500 | 515.6 | | ug/L | | 103 | 70 - 130 |
| 2-Hexanone | ND | | 2500 | 2313 | | ug/L | | 93 | 44 - 150 |
| Chlorodibromomethane | ND | | 500 | 541.7 | | ug/L | | 108 | 66 - 140 |
| Chloroethane | ND | | 500 | 509.1 | | ug/L | | 102 | 58 - 141 |
| Chloroform | ND | | 500 | 485.0 | | ug/L | | 97 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2377 | | ug/L | | 95 | 50 - 140 |
| Chloromethane | ND | | 500 | 517.5 | | ug/L | | 103 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 500 | 511.1 | | ug/L | | 102 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 500 | 482.1 | | ug/L | | 96 | 70 - 133 |
| Dibromomethane | ND | | 500 | 456.1 | | ug/L | | 91 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 500 | 456.4 | | ug/L | | 91 | 10 - 150 |
| Ethylbenzene | 54.0 | | 500 | 535.7 | | ug/L | | 96 | 65 - 139 |
| Hexachlorobutadiene | ND | | 500 | 489.6 | | ug/L | | 98 | 61 - 141 |
| Isopropylbenzene | ND | | 500 | 486.3 | | ug/L | | 96 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 543.1 | | ug/L | | 109 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 500 | 424.6 | | ug/L | | 85 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 546.2 | | ug/L | | 109 | 56 - 145 |
| Methylene Chloride | ND | | 500 | 509.4 | | ug/L | | 102 | 64 - 130 |
| Naphthalene | 2260 | E | 500 | 2599 | E 4 | ug/L | | 68 | 32 - 150 |
| n-Butylbenzene | ND | | 500 | 561.4 | | ug/L | | 112 | 61 - 141 |
| N-Propylbenzene | ND | | 500 | 538.3 | | ug/L | | 108 | 53 - 150 |
| p-Isopropyltoluene | ND | | 500 | 532.4 | | ug/L | | 106 | 66 - 137 |
| sec-Butylbenzene | ND | | 500 | 543.1 | | ug/L | | 109 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 436.9 | | ug/L | | 87 | 36 - 150 |
| Styrene | ND | | 500 | 505.8 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 465.7 | | ug/L | | 93 | 47 - 147 |
| tert-Butylbenzene | ND | | 500 | 541.9 | | ug/L | | 108 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 500 | 467.3 | | ug/L | | 93 | 68 - 144 |
| Tetrachloroethene | ND | | 500 | 470.6 | | ug/L | | 94 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 500 | 501.8 | | ug/L | | 100 | 70 - 130 |
| Toluene | 34.5 | | 500 | 523.9 | | ug/L | | 98 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 500 | 524.4 | | ug/L | | 105 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MS**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 500 | 523.1 | | ug/L | | 105 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 500 | 450.5 | | ug/L | | 90 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 38.2 | | 500 | 563.7 | | ug/L | | 105 | 64 - 136 |
| Trichloroethene | ND | | 500 | 469.5 | | ug/L | | 94 | 63 - 135 |
| 1,3,5-Trimethylbenzene | 66.6 | | 500 | 691.9 | | ug/L | | 125 | 69 - 139 |
| Trichlorofluoromethane | ND | | 500 | 495.9 | | ug/L | | 99 | 44 - 150 |
| Vinyl chloride | ND | | 500 | 519.4 | | ug/L | | 104 | 57 - 150 |
| Xylenes, Total | 76.6 | | 1000 | 1070 | | ug/L | | 99 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116230-4 MSD**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 508.4 | | ug/L | | 102 | 38 - 138 | 0 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 462.5 | | ug/L | | 92 | 65 - 137 | 4 | 21 |
| 2-Butanone (MEK) | ND | | 2500 | 2375 | | ug/L | | 95 | 50 - 143 | 3 | 28 |
| 1,2-Dichlorobenzene | ND | | 500 | 483.8 | | ug/L | | 97 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | | 500 | 600.2 | | ug/L | | 120 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 500 | 497.4 | | ug/L | | 99 | 68 - 131 | 4 | 14 |
| 1,4-Dichlorobenzene | ND | | 500 | 486.9 | | ug/L | | 97 | 70 - 130 | 4 | 14 |
| 4-Chlorotoluene | ND | | 500 | 520.6 | | ug/L | | 104 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 500 | 510.8 | | ug/L | | 102 | 61 - 139 | 6 | 23 |
| 1,2-Dichloroethane | ND | | 500 | 445.6 | | ug/L | | 89 | 64 - 136 | 4 | 22 |
| Acetone | ND | | 2500 | 1906 | | ug/L | | 76 | 39 - 150 | 5 | 28 |
| Benzene | 42.5 | | 500 | 518.7 | | ug/L | | 95 | 55 - 147 | 1 | 22 |
| 1,1-Dichloroethene | ND | | 500 | 492.7 | | ug/L | | 99 | 54 - 150 | 7 | 24 |
| Bromobenzene | ND | | 500 | 485.4 | | ug/L | | 97 | 60 - 133 | 4 | 18 |
| 1,2-Dichloropropane | ND | | 500 | 472.2 | | ug/L | | 94 | 67 - 130 | 8 | 19 |
| Bromochloromethane | ND | | 500 | 444.3 | | ug/L | | 89 | 59 - 132 | 5 | 21 |
| 1,3-Dichloropropane | ND | | 500 | 478.9 | | ug/L | | 96 | 70 - 130 | 4 | 17 |
| Bromodichloromethane | ND | | 500 | 441.7 | | ug/L | | 88 | 70 - 140 | 5 | 196 |
| 2,2-Dichloropropane | ND | | 500 | 345.0 | | ug/L | | 69 | 50 - 146 | 8 | 20 |
| Bromoform | ND | | 500 | 470.6 | | ug/L | | 94 | 53 - 150 | 5 | 20 |
| 1,1-Dichloropropene | ND | | 500 | 485.6 | | ug/L | | 97 | 54 - 150 | 1 | 24 |
| Bromomethane | ND | | 500 | 417.4 | | ug/L | | 83 | 30 - 150 | 7 | 44 |
| Carbon disulfide | ND | | 500 | 524.6 | | ug/L | | 105 | 35 - 150 | 9 | 34 |
| Diisopropyl ether | ND | | 500 | 444.7 | | ug/L | | 89 | 56 - 142 | 5 | 22 |
| Carbon tetrachloride | ND | | 500 | 474.4 | | ug/L | | 95 | 56 - 150 | 4 | 18 |
| Chlorobenzene | ND | | 500 | 488.2 | | ug/L | | 98 | 70 - 130 | 5 | 15 |
| 2-Hexanone | ND | | 2500 | 2258 | | ug/L | | 90 | 44 - 150 | 2 | 21 |
| Chlorodibromomethane | ND | | 500 | 518.6 | | ug/L | | 104 | 66 - 140 | 4 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-4 MSD**
**Matrix: Water**
**Analysis Batch: 388091**

**Client Sample ID: MW-19**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 500 | 483.3 | | ug/L | | 97 | 58 - 141 | 5 | 31 |
| Chloroform | ND | | 500 | 466.5 | | ug/L | | 93 | 66 - 138 | 4 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2313 | | ug/L | | 93 | 50 - 140 | 3 | 24 |
| Chloromethane | ND | | 500 | 498.6 | | ug/L | | 100 | 10 - 150 | 4 | 43 |
| cis-1,2-Dichloroethene | ND | | 500 | 488.0 | | ug/L | | 98 | 68 - 131 | 5 | 21 |
| cis-1,3-Dichloropropene | ND | | 500 | 470.5 | | ug/L | | 94 | 70 - 133 | 2 | 19 |
| Dibromomethane | ND | | 500 | 432.7 | | ug/L | | 87 | 70 - 130 | 5 | 19 |
| Dichlorodifluoromethane | ND | | 500 | 421.7 | | ug/L | | 84 | 10 - 150 | 8 | 50 |
| Ethylbenzene | 54.0 | | 500 | 510.0 | | ug/L | | 91 | 65 - 139 | 5 | 18 |
| Hexachlorobutadiene | ND | | 500 | 471.5 | | ug/L | | 94 | 61 - 141 | 4 | 26 |
| Isopropylbenzene | ND | | 500 | 464.2 | | ug/L | | 92 | 70 - 137 | 5 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 510.9 | | ug/L | | 102 | 70 - 131 | 6 | 16 |
| Methyl tert-butyl ether | ND | | 500 | 410.6 | | ug/L | | 82 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 531.4 | | ug/L | | 106 | 56 - 145 | 3 | 19 |
| Methylene Chloride | ND | | 500 | 482.2 | | ug/L | | 96 | 64 - 130 | 5 | 22 |
| Naphthalene | 2260 | E | 500 | 2638 | E 4 | ug/L | | 76 | 32 - 150 | 1 | 40 |
| n-Butylbenzene | ND | | 500 | 544.4 | | ug/L | | 109 | 61 - 141 | 3 | 17 |
| N-Propylbenzene | ND | | 500 | 520.1 | | ug/L | | 104 | 53 - 150 | 3 | 18 |
| p-Isopropyltoluene | ND | | 500 | 518.7 | | ug/L | | 104 | 66 - 137 | 3 | 16 |
| sec-Butylbenzene | ND | | 500 | 525.7 | | ug/L | | 105 | 55 - 136 | 3 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 457.3 | | ug/L | | 91 | 36 - 150 | 5 | 43 |
| Styrene | ND | | 500 | 482.3 | | ug/L | | 96 | 70 - 130 | 5 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 473.0 | | ug/L | | 95 | 47 - 147 | 2 | 24 |
| tert-Butylbenzene | ND | | 500 | 528.8 | | ug/L | | 106 | 70 - 138 | 2 | 17 |
| 1,1,1-Trichloroethane | ND | | 500 | 440.3 | | ug/L | | 88 | 68 - 144 | 6 | 17 |
| Tetrachloroethene | ND | | 500 | 446.6 | | ug/L | | 89 | 57 - 138 | 5 | 17 |
| 1,1,2-Trichloroethane | ND | | 500 | 470.9 | | ug/L | | 94 | 70 - 130 | 6 | 18 |
| Toluene | 34.5 | | 500 | 497.9 | | ug/L | | 93 | 64 - 136 | 5 | 18 |
| trans-1,2-Dichloroethene | ND | | 500 | 495.1 | | ug/L | | 99 | 59 - 143 | 6 | 25 |
| 1,2,3-Trichloropropane | ND | | 500 | 510.4 | | ug/L | | 102 | 65 - 131 | 2 | 19 |
| trans-1,3-Dichloropropene | ND | | 500 | 432.6 | | ug/L | | 87 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 38.2 | | 500 | 551.7 | | ug/L | | 103 | 64 - 136 | 2 | 18 |
| Trichloroethene | ND | | 500 | 448.8 | | ug/L | | 90 | 63 - 135 | 5 | 17 |
| 1,3,5-Trimethylbenzene | 66.6 | | 500 | 677.5 | | ug/L | | 122 | 69 - 139 | 2 | 17 |
| Trichlorofluoromethane | ND | | 500 | 463.7 | | ug/L | | 93 | 44 - 150 | 7 | 32 |
| Vinyl chloride | ND | | 500 | 486.0 | | ug/L | | 97 | 57 - 150 | 7 | 37 |
| Xylenes, Total | 76.6 | | 1000 | 1018 | | ug/L | | 94 | 69 - 132 | 5 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388100/7**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/19/16 15:08 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/19/16 15:08 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388100/7**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/19/16 15:08 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/19/16 15:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/19/16 15:08* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/19/16 15:08* | *1* |

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.74 | | ug/L | | 94 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.15 | | ug/L | | 96 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 100.7 | | ug/L | | 101 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 24.28 | | ug/L | | 121 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.42 | | ug/L | | 102 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 21.89 | | ug/L | | 109 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 18.18 | | ug/L | | 91 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 18.39 | | ug/L | | 92 | 70 - 130 |
| Acetone | 100 | 85.83 | | ug/L | | 86 | 39 - 150 |
| Benzene | 20.0 | 19.95 | | ug/L | | 100 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 19.01 | | ug/L | | 95 | 70 - 132 |
| Bromobenzene | 20.0 | 20.16 | | ug/L | | 101 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.54 | | ug/L | | 93 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 19.67 | | ug/L | | 98 | 70 - 130 |
| Bromodichloromethane | 20.0 | 18.17 | | ug/L | | 91 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 13.23 | | ug/L | | 66 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 19.99 | | ug/L | | 100 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 19.11 | | ug/L | | 96 | 70 - 130 |
| Bromomethane | 20.0 | 12.55 | | ug/L | | 63 | 53 - 150 |
| Carbon disulfide | 20.0 | 21.20 | | ug/L | | 106 | 64 - 135 |
| Diisopropyl ether | 20.0 | 18.56 | | ug/L | | 93 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 18.40 | | ug/L | | 92 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.61 | | ug/L | | 103 | 70 - 130 |
| 2-Hexanone | 100 | 90.96 | | ug/L | | 91 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 20.55 | | ug/L | | 103 | 70 - 133 |
| Chloroethane | 20.0 | 19.30 | | ug/L | | 96 | 60 - 138 |
| Chloroform | 20.0 | 19.39 | | ug/L | | 97 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 96.77 | | ug/L | | 97 | 60 - 137 |
| Chloromethane | 20.0 | 18.78 | | ug/L | | 94 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.83 | | ug/L | | 99 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 18.75 | | ug/L | | 94 | 70 - 133 |
| Dibromomethane | 20.0 | 17.99 | | ug/L | | 90 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.47 | | ug/L | | 87 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.04 | | ug/L | | 95 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 18.21 | | ug/L | | 91 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.81 | | ug/L | | 94 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.61 | | ug/L | | 103 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 16.98 | | ug/L | | 85 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.20 | | ug/L | | 101 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.47 | | ug/L | | 97 | 70 - 130 |
| Naphthalene | 20.0 | 17.00 | | ug/L | | 85 | 54 - 150 |
| n-Butylbenzene | 20.0 | 21.51 | | ug/L | | 108 | 68 - 137 |
| N-Propylbenzene | 20.0 | 21.53 | | ug/L | | 108 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 21.01 | | ug/L | | 105 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 21.29 | | ug/L | | 106 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.49 | | ug/L | | 87 | 46 - 150 |
| Styrene | 20.0 | 20.01 | | ug/L | | 100 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.26 | | ug/L | | 86 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 21.52 | | ug/L | | 108 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 17.48 | | ug/L | | 87 | 70 - 135 |
| Tetrachloroethene | 20.0 | 18.02 | | ug/L | | 90 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.08 | | ug/L | | 100 | 70 - 130 |
| Toluene | 20.0 | 19.46 | | ug/L | | 97 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 20.23 | | ug/L | | 101 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.30 | | ug/L | | 106 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 17.26 | | ug/L | | 86 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 21.06 | | ug/L | | 105 | 70 - 130 |
| Trichloroethene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.92 | | ug/L | | 125 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 17.27 | | ug/L | | 86 | 59 - 150 |
| Vinyl chloride | 20.0 | 19.33 | | ug/L | | 97 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.48 | | ug/L | | 96 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388100/3**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 108 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 96 | | 70 - 130 |
| Toluene-d8 (Surr) | 107 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388100/4**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.77 | | ug/L | | 94 | 45 - 138 | 0 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 18.82 | | ug/L | | 94 | 70 - 130 | 2 | 13 |
| 2-Butanone (MEK) | 100 | 98.47 | | ug/L | | 98 | 55 - 143 | 2 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 19.55 | | ug/L | | 98 | 70 - 130 | 3 | 12 |
| 2-Chlorotoluene | 20.0 | 23.97 | | ug/L | | 120 | 70 - 130 | 1 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 19.91 | | ug/L | | 100 | 70 - 130 | 3 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.19 | | ug/L | | 101 | 70 - 130 | 1 | 12 |
| 4-Chlorotoluene | 20.0 | 21.54 | | ug/L | | 108 | 70 - 130 | 2 | 15 |
| 1,1-Dichloroethane | 20.0 | 17.15 | | ug/L | | 86 | 70 - 130 | 6 | 17 |
| 1,2-Dichloroethane | 20.0 | 18.60 | | ug/L | | 93 | 70 - 130 | 1 | 13 |
| Acetone | 100 | 90.29 | | ug/L | | 90 | 39 - 150 | 5 | 23 |
| Benzene | 20.0 | 20.11 | | ug/L | | 101 | 70 - 130 | 1 | 12 |
| 1,1-Dichloroethene | 20.0 | 18.25 | | ug/L | | 91 | 70 - 132 | 4 | 20 |
| Bromobenzene | 20.0 | 19.61 | | ug/L | | 98 | 70 - 130 | 3 | 16 |
| 1,2-Dichloropropane | 20.0 | 19.33 | | ug/L | | 97 | 70 - 130 | 2 | 15 |
| Bromochloromethane | 20.0 | 18.34 | | ug/L | | 92 | 70 - 130 | 1 | 16 |
| 1,3-Dichloropropane | 20.0 | 19.42 | | ug/L | | 97 | 70 - 130 | 1 | 12 |
| Bromodichloromethane | 20.0 | 17.41 | | ug/L | | 87 | 70 - 130 | 4 | 14 |
| 2,2-Dichloropropane | 20.0 | 13.21 | | ug/L | | 66 | 60 - 143 | 0 | 20 |
| Bromoform | 20.0 | 19.22 | | ug/L | | 96 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 18.44 | | ug/L | | 92 | 70 - 130 | 4 | 16 |
| Bromomethane | 20.0 | 12.86 | | ug/L | | 64 | 53 - 150 | 2 | 19 |
| Carbon disulfide | 20.0 | 20.45 | | ug/L | | 102 | 64 - 135 | 4 | 16 |
| Diisopropyl ether | 20.0 | 18.39 | | ug/L | | 92 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | 20.0 | 18.17 | | ug/L | | 91 | 70 - 147 | 1 | 16 |
| Chlorobenzene | 20.0 | 19.67 | | ug/L | | 98 | 70 - 130 | 5 | 12 |
| 2-Hexanone | 100 | 89.37 | | ug/L | | 89 | 54 - 142 | 2 | 17 |
| Chlorodibromomethane | 20.0 | 20.38 | | ug/L | | 102 | 70 - 133 | 1 | 13 |
| Chloroethane | 20.0 | 19.54 | | ug/L | | 98 | 60 - 138 | 1 | 15 |
| Chloroform | 20.0 | 18.75 | | ug/L | | 94 | 70 - 130 | 3 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 93.45 | | ug/L | | 93 | 60 - 137 | 3 | 21 |
| Chloromethane | 20.0 | 19.19 | | ug/L | | 96 | 33 - 150 | 2 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 20.13 | | ug/L | | 101 | 70 - 130 | 2 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 18.04 | | ug/L | | 90 | 70 - 133 | 4 | 15 |
| Dibromomethane | 20.0 | 18.12 | | ug/L | | 91 | 70 - 130 | 1 | 14 |
| Dichlorodifluoromethane | 20.0 | 17.14 | | ug/L | | 86 | 48 - 150 | 2 | 16 |
| Ethylbenzene | 20.0 | 18.81 | | ug/L | | 94 | 70 - 130 | 1 | 12 |
| Hexachlorobutadiene | 20.0 | 17.80 | | ug/L | | 89 | 70 - 138 | 2 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388100/4**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 18.58 | | ug/L | | 93 | 70 - 131 | 1 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.47 | | ug/L | | 102 | 70 - 130 | 1 | 13 |
| Methyl tert-butyl ether | 20.0 | 17.09 | | ug/L | | 85 | 70 - 130 | 1 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 21.17 | | ug/L | | 106 | 69 - 131 | 5 | 15 |
| Methylene Chloride | 20.0 | 19.49 | | ug/L | | 97 | 70 - 130 | 0 | 15 |
| Naphthalene | 20.0 | 16.44 | | ug/L | | 82 | 54 - 150 | 3 | 15 |
| n-Butylbenzene | 20.0 | 20.76 | | ug/L | | 104 | 68 - 137 | 4 | 14 |
| N-Propylbenzene | 20.0 | 21.03 | | ug/L | | 105 | 70 - 134 | 2 | 14 |
| p-Isopropyltoluene | 20.0 | 20.48 | | ug/L | | 102 | 66 - 130 | 3 | 13 |
| sec-Butylbenzene | 20.0 | 20.85 | | ug/L | | 104 | 70 - 135 | 2 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 16.83 | | ug/L | | 84 | 46 - 150 | 4 | 16 |
| Styrene | 20.0 | 19.74 | | ug/L | | 99 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 16.79 | | ug/L | | 84 | 58 - 147 | 3 | 15 |
| tert-Butylbenzene | 20.0 | 20.93 | | ug/L | | 105 | 70 - 130 | 3 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 16.84 | | ug/L | | 84 | 70 - 135 | 4 | 15 |
| Tetrachloroethene | 20.0 | 17.57 | | ug/L | | 88 | 70 - 130 | 3 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 19.53 | | ug/L | | 98 | 70 - 130 | 3 | 13 |
| Toluene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 | 2 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 20.11 | | ug/L | | 101 | 70 - 130 | 1 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.39 | | ug/L | | 102 | 70 - 131 | 4 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 16.73 | | ug/L | | 84 | 63 - 142 | 3 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 130 | 2 | 13 |
| Trichloroethene | 20.0 | 17.96 | | ug/L | | 90 | 70 - 130 | 6 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.19 | | ug/L | | 121 | 70 - 130 | 3 | 14 |
| Trichlorofluoromethane | 20.0 | 18.12 | | ug/L | | 91 | 59 - 150 | 5 | 22 |
| Vinyl chloride | 20.0 | 19.25 | | ug/L | | 96 | 57 - 137 | 0 | 15 |
| Xylenes, Total | 40.0 | 38.14 | | ug/L | | 95 | 70 - 132 | 1 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 477.6 | | ug/L | | 96 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 464.2 | | ug/L | | 93 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 2500 | 2369 | | ug/L | | 95 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 500 | 481.2 | | ug/L | | 96 | 70 - 130 |
| 2-Chlorotoluene | ND | | 500 | 602.6 | | ug/L | | 121 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 500 | 494.1 | | ug/L | | 99 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 500 | 485.6 | | ug/L | | 97 | 70 - 130 |
| 4-Chlorotoluene | ND | | 500 | 529.4 | | ug/L | | 106 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 500 | 527.3 | | ug/L | | 105 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 500 | 456.1 | | ug/L | | 91 | 64 - 136 |
| Acetone | ND | | 2500 | 1987 | | ug/L | | 79 | 39 - 150 |
| Benzene | 296 | | 500 | 762.3 | | ug/L | | 93 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 500 | 493.5 | | ug/L | | 99 | 54 - 150 |
| Bromobenzene | ND | | 500 | 496.5 | | ug/L | | 99 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 500 | 482.0 | | ug/L | | 96 | 67 - 130 |
| Bromochloromethane | ND | | 500 | 453.4 | | ug/L | | 91 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 500 | 477.9 | | ug/L | | 96 | 70 - 130 |
| Bromodichloromethane | ND | | 500 | 457.7 | | ug/L | | 92 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 500 | 287.7 | | ug/L | | 58 | 50 - 146 |
| Bromoform | ND | | 500 | 478.2 | | ug/L | | 96 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 500 | 472.7 | | ug/L | | 95 | 54 - 150 |
| Bromomethane | ND | | 500 | 405.0 | | ug/L | | 81 | 30 - 150 |
| Carbon disulfide | ND | | 500 | 528.6 | | ug/L | | 106 | 35 - 150 |
| Diisopropyl ether | ND | | 500 | 452.9 | | ug/L | | 91 | 56 - 142 |
| Carbon tetrachloride | ND | | 500 | 481.3 | | ug/L | | 96 | 56 - 150 |
| Chlorobenzene | ND | | 500 | 495.7 | | ug/L | | 99 | 70 - 130 |
| 2-Hexanone | ND | | 2500 | 2228 | | ug/L | | 89 | 44 - 150 |
| Chlorodibromomethane | ND | | 500 | 517.0 | | ug/L | | 103 | 66 - 140 |
| Chloroethane | ND | | 500 | 490.7 | | ug/L | | 98 | 58 - 141 |
| Chloroform | ND | | 500 | 477.0 | | ug/L | | 95 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2306 | | ug/L | | 92 | 50 - 140 |
| Chloromethane | ND | | 500 | 500.9 | | ug/L | | 100 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 500 | 499.2 | | ug/L | | 100 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 500 | 456.9 | | ug/L | | 91 | 70 - 133 |
| Dibromomethane | ND | | 500 | 434.1 | | ug/L | | 87 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 500 | 419.0 | | ug/L | | 84 | 10 - 150 |
| Ethylbenzene | 331 | | 500 | 745.6 | | ug/L | | 83 | 65 - 139 |
| Hexachlorobutadiene | ND | | 500 | 442.8 | | ug/L | | 89 | 61 - 141 |
| Isopropylbenzene | ND | | 500 | 475.9 | | ug/L | | 94 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 523.0 | | ug/L | | 105 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 500 | 413.4 | | ug/L | | 83 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 535.8 | | ug/L | | 107 | 56 - 145 |
| Methylene Chloride | ND | | 500 | 489.2 | | ug/L | | 98 | 64 - 130 |
| Naphthalene | 2950 | E | 500 | 4104 | E 4 | ug/L | | 231 | 32 - 150 |
| n-Butylbenzene | ND | | 500 | 525.3 | | ug/L | | 105 | 61 - 141 |
| N-Propylbenzene | ND | | 500 | 526.6 | | ug/L | | 105 | 53 - 150 |
| p-Isopropyltoluene | 10.6 | | 500 | 522.5 | | ug/L | | 102 | 66 - 137 |
| sec-Butylbenzene | ND | | 500 | 520.7 | | ug/L | | 104 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 413.1 | | ug/L | | 83 | 36 - 150 |
| Styrene | ND | | 500 | 487.3 | | ug/L | | 97 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 440.6 | | ug/L | | 88 | 47 - 147 |
| tert-Butylbenzene | ND | | 500 | 529.5 | | ug/L | | 106 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 500 | 454.0 | | ug/L | | 91 | 68 - 144 |
| Tetrachloroethene | ND | | 500 | 444.9 | | ug/L | | 89 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 500 | 483.2 | | ug/L | | 97 | 70 - 130 |
| Toluene | 19.6 | | 500 | 495.4 | | ug/L | | 95 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 500 | 510.9 | | ug/L | | 102 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 500 | 515.4 | | ug/L | | 103 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 500 | 422.1 | | ug/L | | 84 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 63.8 | | 500 | 572.6 | | ug/L | | 102 | 64 - 136 |
| Trichloroethene | ND | | 500 | 450.0 | | ug/L | | 90 | 63 - 135 |
| 1,3,5-Trimethylbenzene | 127 | | 500 | 726.1 | | ug/L | | 120 | 69 - 139 |
| Trichlorofluoromethane | ND | | 500 | 463.8 | | ug/L | | 93 | 44 - 150 |
| Vinyl chloride | ND | | 500 | 497.2 | | ug/L | | 99 | 57 - 150 |
| Xylenes, Total | 259 | | 1000 | 1190 | | ug/L | | 93 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 500 | 478.7 | | ug/L | | 96 | 38 - 138 | 0 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 500 | 446.6 | | ug/L | | 89 | 65 - 137 | 4 | 21 |
| 2-Butanone (MEK) | ND | | 2500 | 2214 | | ug/L | | 89 | 50 - 143 | 7 | 28 |
| 1,2-Dichlorobenzene | ND | | 500 | 464.5 | | ug/L | | 93 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | | 500 | 585.7 | | ug/L | | 117 | 67 - 138 | 3 | 17 |
| 1,3-Dichlorobenzene | ND | | 500 | 477.3 | | ug/L | | 95 | 68 - 131 | 3 | 14 |
| 1,4-Dichlorobenzene | ND | | 500 | 473.3 | | ug/L | | 95 | 70 - 130 | 3 | 14 |
| 4-Chlorotoluene | ND | | 500 | 510.6 | | ug/L | | 102 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 500 | 502.5 | | ug/L | | 100 | 61 - 139 | 5 | 23 |
| 1,2-Dichloroethane | ND | | 500 | 450.2 | | ug/L | | 90 | 64 - 136 | 1 | 22 |
| Acetone | ND | | 2500 | 2192 | | ug/L | | 88 | 39 - 150 | 10 | 28 |
| Benzene | 296 | | 500 | 700.1 | | ug/L | | 81 | 55 - 147 | 8 | 22 |
| 1,1-Dichloroethene | ND | | 500 | 475.6 | | ug/L | | 95 | 54 - 150 | 4 | 24 |
| Bromobenzene | ND | | 500 | 472.0 | | ug/L | | 94 | 60 - 133 | 5 | 18 |
| 1,2-Dichloropropane | ND | | 500 | 470.1 | | ug/L | | 94 | 67 - 130 | 3 | 19 |
| Bromochloromethane | ND | | 500 | 428.3 | | ug/L | | 86 | 59 - 132 | 6 | 21 |
| 1,3-Dichloropropane | ND | | 500 | 457.7 | | ug/L | | 92 | 70 - 130 | 4 | 17 |
| Bromodichloromethane | ND | | 500 | 435.3 | | ug/L | | 87 | 70 - 140 | 5 | 196 |
| 2,2-Dichloropropane | ND | | 500 | 274.0 | | ug/L | | 55 | 50 - 146 | 5 | 20 |
| Bromoform | ND | | 500 | 460.7 | | ug/L | | 92 | 53 - 150 | 4 | 20 |
| 1,1-Dichloropropene | ND | | 500 | 453.6 | | ug/L | | 91 | 54 - 150 | 4 | 24 |
| Bromomethane | ND | | 500 | 405.0 | | ug/L | | 81 | 30 - 150 | 0 | 44 |
| Carbon disulfide | ND | | 500 | 502.6 | | ug/L | | 101 | 35 - 150 | 5 | 34 |
| Diisopropyl ether | ND | | 500 | 441.7 | | ug/L | | 88 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 500 | 458.9 | | ug/L | | 92 | 56 - 150 | 5 | 18 |
| Chlorobenzene | ND | | 500 | 466.8 | | ug/L | | 93 | 70 - 130 | 6 | 15 |
| 2-Hexanone | ND | | 2500 | 2201 | | ug/L | | 88 | 44 - 150 | 1 | 21 |
| Chlorodibromomethane | ND | | 500 | 495.5 | | ug/L | | 99 | 66 - 140 | 4 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388100**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 500 | 464.4 | | ug/L | | 93 | 58 - 141 | 6 | 31 |
| Chloroform | ND | | 500 | 459.4 | | ug/L | | 92 | 66 - 138 | 4 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 2500 | 2241 | | ug/L | | 90 | 50 - 140 | 3 | 24 |
| Chloromethane | ND | | 500 | 477.8 | | ug/L | | 96 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 500 | 475.1 | | ug/L | | 95 | 68 - 131 | 5 | 21 |
| cis-1,3-Dichloropropene | ND | | 500 | 433.2 | | ug/L | | 87 | 70 - 133 | 5 | 19 |
| Dibromomethane | ND | | 500 | 422.5 | | ug/L | | 84 | 70 - 130 | 3 | 19 |
| Dichlorodifluoromethane | ND | | 500 | 400.9 | | ug/L | | 80 | 10 - 150 | 4 | 50 |
| Ethylbenzene | 331 | | 500 | 698.5 | | ug/L | | 74 | 65 - 139 | 7 | 18 |
| Hexachlorobutadiene | ND | | 500 | 453.2 | | ug/L | | 91 | 61 - 141 | 2 | 26 |
| Isopropylbenzene | ND | | 500 | 450.2 | | ug/L | | 88 | 70 - 137 | 6 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 500 | 486.9 | | ug/L | | 97 | 70 - 131 | 7 | 16 |
| Methyl tert-butyl ether | ND | | 500 | 406.3 | | ug/L | | 81 | 55 - 141 | 2 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 500 | 515.3 | | ug/L | | 103 | 56 - 145 | 4 | 19 |
| Methylene Chloride | ND | | 500 | 471.4 | | ug/L | | 94 | 64 - 130 | 4 | 22 |
| Naphthalene | 2950 | E | 500 | 3949 | E 4 | ug/L | | 200 | 32 - 150 | 4 | 40 |
| n-Butylbenzene | ND | | 500 | 521.1 | | ug/L | | 104 | 61 - 141 | 1 | 17 |
| N-Propylbenzene | ND | | 500 | 508.2 | | ug/L | | 102 | 53 - 150 | 4 | 18 |
| p-Isopropyltoluene | 10.6 | | 500 | 510.2 | | ug/L | | 100 | 66 - 137 | 2 | 16 |
| sec-Butylbenzene | ND | | 500 | 514.2 | | ug/L | | 103 | 55 - 136 | 1 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 500 | 431.9 | | ug/L | | 86 | 36 - 150 | 4 | 43 |
| Styrene | ND | | 500 | 456.4 | | ug/L | | 91 | 70 - 130 | 7 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 500 | 449.3 | | ug/L | | 90 | 47 - 147 | 2 | 24 |
| tert-Butylbenzene | ND | | 500 | 518.2 | | ug/L | | 104 | 70 - 138 | 2 | 17 |
| 1,1,1-Trichloroethane | ND | | 500 | 430.5 | | ug/L | | 86 | 68 - 144 | 5 | 17 |
| Tetrachloroethene | ND | | 500 | 421.7 | | ug/L | | 84 | 57 - 138 | 5 | 17 |
| 1,1,2-Trichloroethane | ND | | 500 | 456.2 | | ug/L | | 91 | 70 - 130 | 6 | 18 |
| Toluene | 19.6 | | 500 | 467.1 | | ug/L | | 89 | 64 - 136 | 6 | 18 |
| trans-1,2-Dichloroethene | ND | | 500 | 490.7 | | ug/L | | 98 | 59 - 143 | 4 | 25 |
| 1,2,3-Trichloropropane | ND | | 500 | 486.3 | | ug/L | | 97 | 65 - 131 | 6 | 19 |
| trans-1,3-Dichloropropene | ND | | 500 | 404.6 | | ug/L | | 81 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 63.8 | | 500 | 552.1 | | ug/L | | 98 | 64 - 136 | 4 | 18 |
| Trichloroethene | ND | | 500 | 429.0 | | ug/L | | 86 | 63 - 135 | 5 | 17 |
| 1,3,5-Trimethylbenzene | 127 | | 500 | 703.3 | | ug/L | | 115 | 69 - 139 | 3 | 17 |
| Trichlorofluoromethane | ND | | 500 | 443.1 | | ug/L | | 89 | 44 - 150 | 5 | 32 |
| Vinyl chloride | ND | | 500 | 465.9 | | ug/L | | 93 | 57 - 150 | 6 | 37 |
| Xylenes, Total | 259 | | 1000 | 1126 | | ug/L | | 87 | 69 - 132 | 6 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *91* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/20/16 15:08 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388378/7**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/20/16 15:08 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/20/16 15:08 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/20/16 15:08* | *1* |
| *Toluene-d8 (Surr)* | *108* | | *70 - 130* | | *11/20/16 15:08* | *1* |

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 19.99 | | ug/L | | 100 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.28 | | ug/L | | 101 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 105.4 | | ug/L | | 105 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 21.29 | | ug/L | | 106 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 26.19 | * | ug/L | | 131 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 21.90 | | ug/L | | 109 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 21.79 | | ug/L | | 109 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 23.53 | | ug/L | | 118 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 21.84 | | ug/L | | 109 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 19.28 | | ug/L | | 96 | 70 - 130 |
| Acetone | 100 | 105.1 | | ug/L | | 105 | 39 - 150 |
| Benzene | 20.0 | 20.04 | | ug/L | | 100 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 20.67 | | ug/L | | 103 | 70 - 132 |
| Bromobenzene | 20.0 | 21.65 | | ug/L | | 108 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 21.14 | | ug/L | | 106 | 70 - 130 |
| Bromochloromethane | 20.0 | 18.70 | | ug/L | | 94 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 20.84 | | ug/L | | 104 | 70 - 130 |
| Bromodichloromethane | 20.0 | 19.01 | | ug/L | | 95 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 19.70 | | ug/L | | 99 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 20.64 | | ug/L | | 103 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 20.40 | | ug/L | | 102 | 70 - 130 |
| Bromomethane | 20.0 | 14.67 | | ug/L | | 73 | 53 - 150 |
| Carbon disulfide | 20.0 | 23.29 | | ug/L | | 116 | 64 - 135 |
| Diisopropyl ether | 20.0 | 19.76 | | ug/L | | 99 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 19.58 | | ug/L | | 98 | 70 - 147 |
| Chlorobenzene | 20.0 | 21.59 | | ug/L | | 108 | 70 - 130 |
| 2-Hexanone | 100 | 100.6 | | ug/L | | 101 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 22.17 | | ug/L | | 111 | 70 - 133 |
| Chloroethane | 20.0 | 20.58 | | ug/L | | 103 | 60 - 138 |
| Chloroform | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 101.4 | | ug/L | | 101 | 60 - 137 |
| Chloromethane | 20.0 | 20.03 | | ug/L | | 100 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 21.04 | | ug/L | | 105 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 20.53 | | ug/L | | 103 | 70 - 133 |
| Dibromomethane | 20.0 | 19.09 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.60 | | ug/L | | 88 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.90 | | ug/L | | 99 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 20.61 | | ug/L | | 103 | 70 - 138 |
| Isopropylbenzene | 20.0 | 19.49 | | ug/L | | 97 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.20 | | ug/L | | 106 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 18.33 | | ug/L | | 92 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 23.58 | | ug/L | | 118 | 69 - 131 |
| Methylene Chloride | 20.0 | 19.72 | | ug/L | | 99 | 70 - 130 |
| Naphthalene | 20.0 | 18.07 | | ug/L | | 90 | 54 - 150 |
| n-Butylbenzene | 20.0 | 23.89 | | ug/L | | 119 | 68 - 137 |
| N-Propylbenzene | 20.0 | 23.51 | | ug/L | | 118 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 22.89 | | ug/L | | 114 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 23.09 | | ug/L | | 115 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 |
| Styrene | 20.0 | 20.75 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.81 | | ug/L | | 94 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 22.98 | | ug/L | | 115 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 18.95 | | ug/L | | 95 | 70 - 135 |
| Tetrachloroethene | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 20.96 | | ug/L | | 105 | 70 - 130 |
| Toluene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 21.56 | | ug/L | | 108 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.47 | | ug/L | | 107 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 19.66 | | ug/L | | 98 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.61 | | ug/L | | 113 | 70 - 130 |
| Trichloroethene | 20.0 | 19.31 | | ug/L | | 97 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 20.12 | | ug/L | | 101 | 59 - 150 |
| Vinyl chloride | 20.0 | 20.64 | | ug/L | | 103 | 57 - 137 |
| Xylenes, Total | 40.0 | 40.30 | | ug/L | | 101 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388378/3**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 110 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 94 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 93 | | 70 - 130 |
| Toluene-d8 (Surr) | 101 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 20.67 | | ug/L | | 103 | 45 - 138 | 3 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.43 | | ug/L | | 102 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 107.8 | | ug/L | | 108 | 55 - 143 | 2 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 21.39 | | ug/L | | 107 | 70 - 130 | 0 | 12 |
| 2-Chlorotoluene | 20.0 | 26.27 | * | ug/L | | 131 | 70 - 130 | 0 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 21.92 | | ug/L | | 110 | 70 - 130 | 0 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 21.88 | | ug/L | | 109 | 70 - 130 | 0 | 12 |
| 4-Chlorotoluene | 20.0 | 23.38 | | ug/L | | 117 | 70 - 130 | 1 | 15 |
| 1,1-Dichloroethane | 20.0 | 23.16 | | ug/L | | 116 | 70 - 130 | 6 | 17 |
| 1,2-Dichloroethane | 20.0 | 20.06 | | ug/L | | 100 | 70 - 130 | 4 | 13 |
| Acetone | 100 | 103.4 | | ug/L | | 103 | 39 - 150 | 2 | 23 |
| Benzene | 20.0 | 20.78 | | ug/L | | 104 | 70 - 130 | 4 | 12 |
| 1,1-Dichloroethene | 20.0 | 21.75 | | ug/L | | 109 | 70 - 132 | 5 | 20 |
| Bromobenzene | 20.0 | 21.16 | | ug/L | | 106 | 70 - 130 | 2 | 16 |
| 1,2-Dichloropropane | 20.0 | 21.94 | | ug/L | | 110 | 70 - 130 | 4 | 15 |
| Bromochloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 5 | 16 |
| 1,3-Dichloropropane | 20.0 | 20.80 | | ug/L | | 104 | 70 - 130 | 0 | 12 |
| Bromodichloromethane | 20.0 | 19.65 | | ug/L | | 98 | 70 - 130 | 3 | 14 |
| 2,2-Dichloropropane | 20.0 | 20.29 | | ug/L | | 101 | 60 - 143 | 3 | 20 |
| Bromoform | 20.0 | 21.58 | | ug/L | | 108 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 | 3 | 16 |
| Bromomethane | 20.0 | 15.79 | | ug/L | | 79 | 53 - 150 | 7 | 19 |
| Carbon disulfide | 20.0 | 24.04 | | ug/L | | 120 | 64 - 135 | 3 | 16 |
| Diisopropyl ether | 20.0 | 20.69 | | ug/L | | 103 | 66 - 142 | 5 | 14 |
| Carbon tetrachloride | 20.0 | 20.59 | | ug/L | | 103 | 70 - 147 | 5 | 16 |
| Chlorobenzene | 20.0 | 21.82 | | ug/L | | 109 | 70 - 130 | 1 | 12 |
| 2-Hexanone | 100 | 100.3 | | ug/L | | 100 | 54 - 142 | 0 | 17 |
| Chlorodibromomethane | 20.0 | 22.38 | | ug/L | | 112 | 70 - 133 | 1 | 13 |
| Chloroethane | 20.0 | 21.71 | | ug/L | | 109 | 60 - 138 | 5 | 15 |
| Chloroform | 20.0 | 20.97 | | ug/L | | 105 | 70 - 130 | 3 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 103.4 | | ug/L | | 103 | 60 - 137 | 2 | 21 |
| Chloromethane | 20.0 | 21.02 | | ug/L | | 105 | 33 - 150 | 5 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 22.50 | | ug/L | | 113 | 70 - 130 | 7 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 21.46 | | ug/L | | 107 | 70 - 133 | 4 | 15 |
| Dibromomethane | 20.0 | 19.80 | | ug/L | | 99 | 70 - 130 | 4 | 14 |
| Dichlorodifluoromethane | 20.0 | 19.62 | | ug/L | | 98 | 48 - 150 | 11 | 16 |
| Ethylbenzene | 20.0 | 20.69 | | ug/L | | 103 | 70 - 130 | 4 | 12 |
| Hexachlorobutadiene | 20.0 | 21.00 | | ug/L | | 105 | 70 - 138 | 2 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388378/4**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 20.55 | | ug/L | | 103 | 70 - 131 | 5 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 22.24 | | ug/L | | 111 | 70 - 130 | 5 | 13 |
| Methyl tert-butyl ether | 20.0 | 18.93 | | ug/L | | 95 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 23.67 | | ug/L | | 118 | 69 - 131 | 0 | 15 |
| Methylene Chloride | 20.0 | 22.07 | | ug/L | | 110 | 70 - 130 | 11 | 15 |
| Naphthalene | 20.0 | 17.65 | | ug/L | | 88 | 54 - 150 | 2 | 15 |
| n-Butylbenzene | 20.0 | 24.40 | | ug/L | | 122 | 68 - 137 | 2 | 14 |
| N-Propylbenzene | 20.0 | 23.61 | | ug/L | | 118 | 70 - 134 | 0 | 14 |
| p-Isopropyltoluene | 20.0 | 23.00 | | ug/L | | 115 | 66 - 130 | 0 | 13 |
| sec-Butylbenzene | 20.0 | 23.33 | | ug/L | | 117 | 70 - 135 | 1 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 18.76 | | ug/L | | 94 | 46 - 150 | 0 | 16 |
| Styrene | 20.0 | 21.37 | | ug/L | | 107 | 70 - 130 | 3 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 18.86 | | ug/L | | 94 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | 20.0 | 23.03 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 19.45 | | ug/L | | 97 | 70 - 135 | 3 | 15 |
| Tetrachloroethene | 20.0 | 19.75 | | ug/L | | 99 | 70 - 130 | 2 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 21.09 | | ug/L | | 105 | 70 - 130 | 1 | 13 |
| Toluene | 20.0 | 20.90 | | ug/L | | 104 | 70 - 130 | 1 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 22.49 | | ug/L | | 112 | 70 - 130 | 4 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 22.15 | | ug/L | | 111 | 70 - 131 | 3 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 19.56 | | ug/L | | 98 | 63 - 142 | 0 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.60 | | ug/L | | 113 | 70 - 130 | 0 | 13 |
| Trichloroethene | 20.0 | 20.22 | | ug/L | | 101 | 70 - 130 | 5 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 23.07 | | ug/L | | 115 | 70 - 130 | 0 | 14 |
| Trichlorofluoromethane | 20.0 | 19.99 | | ug/L | | 100 | 59 - 150 | 1 | 22 |
| Vinyl chloride | 20.0 | 21.16 | | ug/L | | 106 | 57 - 137 | 3 | 15 |
| Xylenes, Total | 40.0 | 41.51 | | ug/L | | 104 | 70 - 132 | 3 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2561 | | ug/L | | 102 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2425 | | ug/L | | 97 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 12500 | 11740 | | ug/L | | 94 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 70 - 130 |
| 2-Chlorotoluene | ND | * | 2500 | 3139 | | ug/L | | 126 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2647 | | ug/L | | 106 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 130 |
| 4-Chlorotoluene | ND | | 2500 | 2816 | | ug/L | | 113 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 2500 | 2819 | | ug/L | | 113 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 2500 | 2418 | | ug/L | | 97 | 64 - 136 |
| Acetone | ND | | 12500 | 10730 | | ug/L | | 86 | 39 - 150 |
| Benzene | 356 | | 2500 | 2786 | | ug/L | | 97 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 2500 | 2696 | | ug/L | | 108 | 54 - 150 |
| Bromobenzene | ND | | 2500 | 2611 | | ug/L | | 104 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 2500 | 2622 | | ug/L | | 105 | 67 - 130 |
| Bromochloromethane | ND | | 2500 | 2402 | | ug/L | | 96 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 2500 | 2529 | | ug/L | | 101 | 70 - 130 |
| Bromodichloromethane | ND | | 2500 | 2411 | | ug/L | | 96 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 2500 | 2419 | | ug/L | | 97 | 50 - 146 |
| Bromoform | ND | | 2500 | 2499 | | ug/L | | 100 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 2500 | 2564 | | ug/L | | 103 | 54 - 150 |
| Bromomethane | ND | | 2500 | 2458 | | ug/L | | 98 | 30 - 150 |
| Carbon disulfide | ND | | 2500 | 3010 | | ug/L | | 120 | 35 - 150 |
| Diisopropyl ether | ND | | 2500 | 2389 | | ug/L | | 96 | 56 - 142 |
| Carbon tetrachloride | ND | | 2500 | 2546 | | ug/L | | 102 | 56 - 150 |
| Chlorobenzene | ND | | 2500 | 2614 | | ug/L | | 105 | 70 - 130 |
| 2-Hexanone | ND | | 12500 | 11860 | | ug/L | | 95 | 44 - 150 |
| Chlorodibromomethane | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 140 |
| Chloroethane | ND | | 2500 | 2662 | | ug/L | | 106 | 58 - 141 |
| Chloroform | ND | | 2500 | 2526 | | ug/L | | 101 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12000 | | ug/L | | 96 | 50 - 140 |
| Chloromethane | ND | | 2500 | 2806 | | ug/L | | 112 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2666 | | ug/L | | 106 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2539 | | ug/L | | 102 | 70 - 133 |
| Dibromomethane | ND | | 2500 | 2370 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 2500 | 2458 | | ug/L | | 98 | 10 - 150 |
| Ethylbenzene | 370 | | 2500 | 2821 | | ug/L | | 98 | 65 - 139 |
| Hexachlorobutadiene | ND | | 2500 | 2582 | | ug/L | | 103 | 61 - 141 |
| Isopropylbenzene | ND | | 2500 | 2479 | | ug/L | | 99 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2729 | | ug/L | | 109 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 2500 | 2186 | | ug/L | | 87 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2820 | | ug/L | | 113 | 56 - 145 |
| Methylene Chloride | ND | | 2500 | 2625 | | ug/L | | 105 | 64 - 130 |
| Naphthalene | 4710 | | 2500 | 7086 | | ug/L | | 95 | 32 - 150 |
| n-Butylbenzene | ND | | 2500 | 2951 | | ug/L | | 118 | 61 - 141 |
| N-Propylbenzene | ND | | 2500 | 2804 | | ug/L | | 112 | 53 - 150 |
| p-Isopropyltoluene | ND | | 2500 | 2790 | | ug/L | | 112 | 66 - 137 |
| sec-Butylbenzene | ND | | 2500 | 2828 | | ug/L | | 113 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2200 | | ug/L | | 88 | 36 - 150 |
| Styrene | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2402 | | ug/L | | 96 | 47 - 147 |
| tert-Butylbenzene | ND | | 2500 | 2831 | | ug/L | | 113 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2428 | | ug/L | | 97 | 68 - 144 |
| Tetrachloroethene | ND | | 2500 | 2436 | | ug/L | | 97 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2550 | | ug/L | | 102 | 70 - 130 |
| Toluene | ND | | 2500 | 2538 | | ug/L | | 101 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2807 | | ug/L | | 112 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MS**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 2500 | 2653 | | ug/L | | 106 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2419 | | ug/L | | 97 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2796 | | ug/L | | 110 | 64 - 136 |
| Trichloroethene | ND | | 2500 | 2465 | | ug/L | | 98 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2820 | | ug/L | | 112 | 69 - 139 |
| Trichlorofluoromethane | ND | | 2500 | 2629 | | ug/L | | 105 | 44 - 150 |
| Vinyl chloride | ND | | 2500 | 2759 | | ug/L | | 110 | 57 - 150 |
| Xylenes, Total | 273 | | 5000 | 5330 | | ug/L | | 101 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 2500 | 2800 | | ug/L | | 112 | 38 - 138 | 9 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 2500 | 2541 | | ug/L | | 102 | 65 - 137 | 5 | 21 |
| 2-Butanone (MEK) | ND | | 12500 | 12280 | | ug/L | | 98 | 50 - 143 | 4 | 28 |
| 1,2-Dichlorobenzene | ND | | 2500 | 2675 | | ug/L | | 107 | 70 - 130 | 4 | 15 |
| 2-Chlorotoluene | ND | * | 2500 | 3342 | | ug/L | | 134 | 67 - 138 | 6 | 17 |
| 1,3-Dichlorobenzene | ND | | 2500 | 2781 | | ug/L | | 111 | 68 - 131 | 5 | 14 |
| 1,4-Dichlorobenzene | ND | | 2500 | 2723 | | ug/L | | 109 | 70 - 130 | 2 | 14 |
| 4-Chlorotoluene | ND | | 2500 | 2934 | | ug/L | | 117 | 69 - 138 | 4 | 15 |
| 1,1-Dichloroethane | ND | | 2500 | 2896 | | ug/L | | 116 | 61 - 139 | 3 | 23 |
| 1,2-Dichloroethane | ND | | 2500 | 2501 | | ug/L | | 100 | 64 - 136 | 3 | 22 |
| Acetone | ND | | 12500 | 10430 | | ug/L | | 83 | 39 - 150 | 3 | 28 |
| Benzene | 356 | | 2500 | 3040 | | ug/L | | 107 | 55 - 147 | 9 | 22 |
| 1,1-Dichloroethene | ND | | 2500 | 2776 | | ug/L | | 111 | 54 - 150 | 3 | 24 |
| Bromobenzene | ND | | 2500 | 2717 | | ug/L | | 109 | 60 - 133 | 4 | 18 |
| 1,2-Dichloropropane | ND | | 2500 | 2675 | | ug/L | | 107 | 67 - 130 | 2 | 19 |
| Bromochloromethane | ND | | 2500 | 2476 | | ug/L | | 99 | 59 - 132 | 3 | 21 |
| 1,3-Dichloropropane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 2 | 17 |
| Bromodichloromethane | ND | | 2500 | 2497 | | ug/L | | 100 | 70 - 140 | 3 | 196 |
| 2,2-Dichloropropane | ND | | 2500 | 2437 | | ug/L | | 97 | 50 - 146 | 1 | 20 |
| Bromoform | ND | | 2500 | 2582 | | ug/L | | 103 | 53 - 150 | 3 | 20 |
| 1,1-Dichloropropene | ND | | 2500 | 2647 | | ug/L | | 106 | 54 - 150 | 3 | 24 |
| Bromomethane | ND | | 2500 | 2533 | | ug/L | | 101 | 30 - 150 | 3 | 44 |
| Carbon disulfide | ND | | 2500 | 3073 | | ug/L | | 123 | 35 - 150 | 2 | 34 |
| Diisopropyl ether | ND | | 2500 | 2468 | | ug/L | | 99 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 2500 | 2688 | | ug/L | | 108 | 56 - 150 | 5 | 18 |
| Chlorobenzene | ND | | 2500 | 2692 | | ug/L | | 108 | 70 - 130 | 3 | 15 |
| 2-Hexanone | ND | | 12500 | 12390 | | ug/L | | 99 | 44 - 150 | 4 | 21 |
| Chlorodibromomethane | ND | | 2500 | 2848 | | ug/L | | 114 | 66 - 140 | 2 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116230-3 MSD**
**Matrix: Water**
**Analysis Batch: 388378**

**Client Sample ID: MW-3D**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 2500 | 2693 | | ug/L | | 108 | 58 - 141 | 1 | 31 |
| Chloroform | ND | | 2500 | 2581 | | ug/L | | 103 | 66 - 138 | 2 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 12500 | 12700 | | ug/L | | 102 | 50 - 140 | 6 | 24 |
| Chloromethane | ND | | 2500 | 2935 | | ug/L | | 117 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 2500 | 2715 | | ug/L | | 108 | 68 - 131 | 2 | 21 |
| cis-1,3-Dichloropropene | ND | | 2500 | 2660 | | ug/L | | 106 | 70 - 133 | 5 | 19 |
| Dibromomethane | ND | | 2500 | 2426 | | ug/L | | 97 | 70 - 130 | 2 | 19 |
| Dichlorodifluoromethane | ND | | 2500 | 2510 | | ug/L | | 100 | 10 - 150 | 2 | 50 |
| Ethylbenzene | 370 | | 2500 | 2884 | | ug/L | | 101 | 65 - 139 | 2 | 18 |
| Hexachlorobutadiene | ND | | 2500 | 2743 | | ug/L | | 110 | 61 - 141 | 6 | 26 |
| Isopropylbenzene | ND | | 2500 | 2562 | | ug/L | | 102 | 70 - 137 | 3 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 2500 | 2814 | | ug/L | | 113 | 70 - 131 | 3 | 16 |
| Methyl tert-butyl ether | ND | | 2500 | 2259 | | ug/L | | 90 | 55 - 141 | 3 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 2500 | 2931 | | ug/L | | 117 | 56 - 145 | 4 | 19 |
| Methylene Chloride | ND | | 2500 | 2671 | | ug/L | | 107 | 64 - 130 | 2 | 22 |
| Naphthalene | 4710 | | 2500 | 7439 | | ug/L | | 109 | 32 - 150 | 5 | 40 |
| n-Butylbenzene | ND | | 2500 | 3097 | | ug/L | | 124 | 61 - 141 | 5 | 17 |
| N-Propylbenzene | ND | | 2500 | 2933 | | ug/L | | 117 | 53 - 150 | 4 | 18 |
| p-Isopropyltoluene | ND | | 2500 | 2917 | | ug/L | | 117 | 66 - 137 | 4 | 16 |
| sec-Butylbenzene | ND | | 2500 | 2945 | | ug/L | | 118 | 55 - 136 | 4 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 2500 | 2452 | | ug/L | | 98 | 36 - 150 | 11 | 43 |
| Styrene | ND | | 2500 | 2636 | | ug/L | | 105 | 70 - 130 | 2 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 2500 | 2581 | | ug/L | | 103 | 47 - 147 | 7 | 24 |
| tert-Butylbenzene | ND | | 2500 | 2953 | | ug/L | | 118 | 70 - 138 | 4 | 17 |
| 1,1,1-Trichloroethane | ND | | 2500 | 2503 | | ug/L | | 100 | 68 - 144 | 3 | 17 |
| Tetrachloroethene | ND | | 2500 | 2525 | | ug/L | | 101 | 57 - 138 | 4 | 17 |
| 1,1,2-Trichloroethane | ND | | 2500 | 2588 | | ug/L | | 104 | 70 - 130 | 1 | 18 |
| Toluene | ND | | 2500 | 2628 | | ug/L | | 104 | 64 - 136 | 3 | 18 |
| trans-1,2-Dichloroethene | ND | | 2500 | 2854 | | ug/L | | 114 | 59 - 143 | 2 | 25 |
| 1,2,3-Trichloropropane | ND | | 2500 | 2759 | | ug/L | | 110 | 65 - 131 | 4 | 19 |
| trans-1,3-Dichloropropene | ND | | 2500 | 2517 | | ug/L | | 101 | 63 - 142 | 4 | 18 |
| 1,2,4-Trimethylbenzene | 57.4 | | 2500 | 2919 | | ug/L | | 114 | 64 - 136 | 4 | 18 |
| Trichloroethene | ND | | 2500 | 2519 | | ug/L | | 100 | 63 - 135 | 2 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 2500 | 2802 | | ug/L | | 111 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 2500 | 2665 | | ug/L | | 107 | 44 - 150 | 1 | 32 |
| Vinyl chloride | ND | | 2500 | 2770 | | ug/L | | 111 | 57 - 150 | 0 | 37 |
| Xylenes, Total | 273 | | 5000 | 5492 | | ug/L | | 104 | 69 - 132 | 3 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *92* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *98* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 490-387412/3**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | | 1.00 | | mg/L | | | 11/16/16 23:50 | 1 |

**Lab Sample ID: LCS 490-387412/4**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.697 | | mg/L | | 97 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387412/5**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.781 | | mg/L | | 98 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 387412**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | F1 | 2.00 | 2.714 | F1 | mg/L | | 136 | 80 - 120 | | |

**Lab Sample ID: MB 490-387413/3**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/16/16 23:50 | 1 |

**Lab Sample ID: LCS 490-387413/4**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9537 | | mg/L | | 95 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-387413/5**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9641 | | mg/L | | 96 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 387413**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.200 | 0.1690 | | mg/L | | 85 | 80 - 120 | | |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 490-388719/1-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/22/16 09:13 | 11/26/16 02:55 | 1 |

**Lab Sample ID: LCS 490-388719/2-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5187 | | mg/L | | 104 | 80 - 120 | | |

**Lab Sample ID: LCSD 490-388719/3-A**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5219 | | mg/L | | 104 | 80 - 120 | 1 | 20 |

**Lab Sample ID: 490-116230-1 MS**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.279 | 4 | mg/L | | 94 | 75 - 125 | | |

**Lab Sample ID: 490-116230-1 MSD**
**Matrix: Water**
**Analysis Batch: 389814**

**Client Sample ID: MW-1**
**Prep Type: Total/NA**
**Prep Batch: 388719**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.81 | | 0.500 | 3.364 | 4 | mg/L | | 111 | 75 - 125 | 3 | 20 |

**Lab Sample ID: MB 490-388942/1-A**
**Matrix: Water**
**Analysis Batch: 389560**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 388942**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/22/16 15:30 | 11/23/16 22:45 | 1 |

**Lab Sample ID: LCS 490-388942/2-A**
**Matrix: Water**
**Analysis Batch: 389560**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 388942**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | | | 0.500 | 0.5195 | | mg/L | | 104 | 80 - 120 | | |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 490-116230-4 MS** — **Client Sample ID: MW-19**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389560** — **Prep Batch: 388942**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.43 | | 0.500 | 2.935 | 4 | mg/L | | 101 | 75 - 125 |

**Lab Sample ID: 490-116230-4 MSD** — **Client Sample ID: MW-19**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389560** — **Prep Batch: 388942**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 2.43 | | 0.500 | 2.953 | 4 | mg/L | | 104 | 75 - 125 | 1 | 20 |

**Lab Sample ID: MB 490-389505/1-A** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/25/16 07:34 | 11/28/16 12:19 | 1 |

**Lab Sample ID: LCS 490-389505/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.4780 | | mg/L | | 96 | 80 - 120 |

**Lab Sample ID: 490-116613-A-1-C MS** — **Client Sample ID: Matrix Spike**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9980 | | mg/L | | 92 | 75 - 125 |

**Lab Sample ID: 490-116613-A-1-D MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 390238** — **Prep Batch: 389505**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.537 | | 0.500 | 0.9884 | | mg/L | | 90 | 75 - 125 | 1 | 20 |

## Method: SM 2320B - Alkalinity

**Lab Sample ID: LCS 490-389383/7** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 389383**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 99.63 | | mg/L | | 100 | 90 - 110 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: LCSD 490-389383/29**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 98.51 | | mg/L | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 490-116395-L-10 DU**
**Matrix: Water**
**Analysis Batch: 389383**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | ND | | | ND | | mg/L | | | | NC | 20 |

## Method: SM 3500 Fe B - Iron, Ferrous

**Lab Sample ID: MB 490-389051/1**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 0.100 | | mg/L | | | 11/22/16 18:59 | 1 |

**Lab Sample ID: LCS 490-389051/2**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 0.9490 | | mg/L | | 94 | 80 - 120 | | |

**Lab Sample ID: LCSD 490-389051/3**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 1.025 | | mg/L | | 101 | 80 - 120 | 8 | 20 |

**Lab Sample ID: 490-116300-D-2 MS**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9420 | | mg/L | | 93 | 75 - 125 | | |

**Lab Sample ID: 490-116300-D-2 MSD**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9880 | | mg/L | | 98 | 75 - 125 | 5 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Method: SM 3500 Fe B - Iron, Ferrous (Continued)

**Lab Sample ID: 490-116219-B-6 DU**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 6.47 | | | 6.198 | | mg/L | | | | 4 | 20 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## GC/MS VOA

### Analysis Batch: 388091

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-6 | Trip Blank | Total/NA | Water | 8260B | |
| MB 490-388091/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388091/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388091/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 8260B | |

### Analysis Batch: 388100

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 8260B | |
| 490-116230-2 | MW-3 | Total/NA | Water | 8260B | |
| 490-116230-3 | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-5 | MW-20 | Total/NA | Water | 8260B | |
| MB 490-388100/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388100/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388100/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-3 MS | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-3 MSD | MW-3D | Total/NA | Water | 8260B | |

### Analysis Batch: 388378

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-3 | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-4 | MW-19 | Total/NA | Water | 8260B | |
| 490-116230-5 | MW-20 | Total/NA | Water | 8260B | |
| MB 490-388378/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388378/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388378/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116230-3 MS | MW-3D | Total/NA | Water | 8260B | |
| 490-116230-3 MSD | MW-3D | Total/NA | Water | 8260B | |

## HPLC/IC

### Analysis Batch: 387412

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 300.0 | |
| 490-116230-2 | MW-3 | Total/NA | Water | 300.0 | |
| 490-116230-3 | MW-3D | Total/NA | Water | 300.0 | |
| 490-116230-4 | MW-19 | Total/NA | Water | 300.0 | |
| 490-116230-5 | MW-20 | Total/NA | Water | 300.0 | |
| MB 490-387412/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-387412/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387412/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 300.0 | |

### Analysis Batch: 387413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 300.0 | |
| 490-116230-2 | MW-3 | Total/NA | Water | 300.0 | |
| 490-116230-3 | MW-3D | Total/NA | Water | 300.0 | |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## HPLC/IC (Continued)

### Analysis Batch: 387413 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 300.0 | |
| 490-116230-5 | MW-20 | Total/NA | Water | 300.0 | |
| MB 490-387413/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-387413/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-387413/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 300.0 | |

## Metals

### Prep Batch: 388719

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 3010A | |
| 490-116230-2 | MW-3 | Total/NA | Water | 3010A | |
| 490-116230-3 | MW-3D | Total/NA | Water | 3010A | |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 3010A | |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 3010A | |
| 490-116230-1 MSD | MW-1 | Total/NA | Water | 3010A | |

### Prep Batch: 388942

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 3010A | |
| MB 490-388942/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-388942/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 3010A | |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 3010A | |

### Prep Batch: 389505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-5 | MW-20 | Total/NA | Water | 3010A | |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 3010A | |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 3010A | |

### Analysis Batch: 389560

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-4 | MW-19 | Total/NA | Water | 6010C | 388942 |
| MB 490-388942/1-A | Method Blank | Total/NA | Water | 6010C | 388942 |
| LCS 490-388942/2-A | Lab Control Sample | Total/NA | Water | 6010C | 388942 |
| 490-116230-4 MS | MW-19 | Total/NA | Water | 6010C | 388942 |
| 490-116230-4 MSD | MW-19 | Total/NA | Water | 6010C | 388942 |

### Analysis Batch: 389814

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | 6010C | 388719 |
| 490-116230-2 | MW-3 | Total/NA | Water | 6010C | 388719 |
| 490-116230-3 | MW-3D | Total/NA | Water | 6010C | 388719 |
| MB 490-388719/1-A | Method Blank | Total/NA | Water | 6010C | 388719 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Metals (Continued)

### Analysis Batch: 389814 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 490-388719/2-A | Lab Control Sample | Total/NA | Water | 6010C | 388719 |
| LCSD 490-388719/3-A | Lab Control Sample Dup | Total/NA | Water | 6010C | 388719 |
| 490-116230-1 MS | MW-1 | Total/NA | Water | 6010C | 388719 |
| 490-116230-1 MSD | MW-1 | Total/NA | Water | 6010C | 388719 |

### Analysis Batch: 390238

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-5 | MW-20 | Total/NA | Water | 6010C | 389505 |
| MB 490-389505/1-A | Method Blank | Total/NA | Water | 6010C | 389505 |
| LCS 490-389505/2-A | Lab Control Sample | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-C MS | Matrix Spike | Total/NA | Water | 6010C | 389505 |
| 490-116613-A-1-D MSD | Matrix Spike Duplicate | Total/NA | Water | 6010C | 389505 |

## General Chemistry

### Analysis Batch: 389051

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-2 | MW-3 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-3 | MW-3D | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-4 | MW-19 | Total/NA | Water | SM 3500 Fe B | |
| 490-116230-5 | MW-20 | Total/NA | Water | SM 3500 Fe B | |
| MB 490-389051/1 | Method Blank | Total/NA | Water | SM 3500 Fe B | |
| LCS 490-389051/2 | Lab Control Sample | Total/NA | Water | SM 3500 Fe B | |
| LCSD 490-389051/3 | Lab Control Sample Dup | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MS | Matrix Spike | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MSD | Matrix Spike Duplicate | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-B-6 DU | Duplicate | Total/NA | Water | SM 3500 Fe B | |

### Analysis Batch: 389383

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116230-1 | MW-1 | Total/NA | Water | SM 2320B | |
| 490-116230-2 | MW-3 | Total/NA | Water | SM 2320B | |
| 490-116230-3 | MW-3D | Total/NA | Water | SM 2320B | |
| 490-116230-4 | MW-19 | Total/NA | Water | SM 2320B | |
| 490-116230-5 | MW-20 | Total/NA | Water | SM 2320B | |
| LCS 490-389383/7 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCSD 490-389383/29 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116395-L-10 DU | Duplicate | Total/NA | Water | SM 2320B | |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-1
**Date Collected: 11/15/16 16:02**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-1**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:06 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 02:48 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 02:48 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 03:32 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 12:51 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-3
**Date Collected: 11/15/16 13:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-2**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388100 | 11/19/16 19:29 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 03:21 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 03:21 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 03:57 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 12:58 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-3D
**Date Collected: 11/15/16 12:47**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-3**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:33 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 16:53 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 03:43 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 03:43 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388719 | 11/22/16 09:13 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389814 | 11/26/16 04:02 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:04 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-19
**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388091 | 11/19/16 10:46 | BBR | TAL NSH |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Client Sample ID: MW-19

**Date Collected: 11/15/16 15:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-4**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 17:19 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 04:05 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 04:05 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 388942 | 11/22/16 15:30 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 389560 | 11/23/16 23:01 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:10 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-20

**Date Collected: 11/15/16 14:27**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-5**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 10 | 388100 | 11/19/16 22:59 | BBR | TAL NSH |
| Total/NA | Analysis | 8260B | | 50 | 388378 | 11/20/16 17:46 | AK1 | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387412 | 11/17/16 04:28 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 387413 | 11/17/16 04:28 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389505 | 11/25/16 07:59 | CAH | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390238 | 11/28/16 14:01 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 389383 | 11/23/16 13:16 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: Trip Blank

**Date Collected: 11/15/16 00:01**
**Date Received: 11/16/16 10:25**

**Lab Sample ID: 490-116230-6**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388091 | 11/19/16 04:13 | BBR | TAL NSH |

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Method Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL NSH |
| 6010C | Metals (ICP) | SW846 | TAL NSH |
| SM 2320B | Alkalinity | SM | TAL NSH |
| SM 3500 Fe B | Iron, Ferrous | SM | TAL NSH |

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Certification Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110471

TestAmerica Job ID: 490-116230-1

## Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| A2LA | A2LA | | NA: NELAP & A2LA | 12-31-17 |
| A2LA | ISO/IEC 17025 | | 0453.07 | 12-31-17 |
| Alaska (UST) | State Program | 10 | UST-087 | 07-24-17 |
| Arizona | State Program | 9 | AZ0473 | 05-05-17 |
| Arkansas DEQ | State Program | 6 | 88-0737 | 04-25-17 |
| California | State Program | 9 | 2938 | 10-31-16 * |
| Connecticut | State Program | 1 | PH-0220 | 12-31-17 |
| Florida | NELAP | 4 | E87358 | 06-30-17 |
| Georgia | State Program | 4 | N/A | 12-31-17 |
| Illinois | NELAP | 5 | 200010 | 12-09-16 * |
| Iowa | State Program | 7 | 131 | 04-01-18 |
| Kansas | NELAP | 7 | E-10229 | 10-31-17 |
| Kentucky (UST) | State Program | 4 | 19 | 06-30-17 |
| Kentucky (WW) | State Program | 4 | 90038 | 12-31-16 * |
| Louisiana | NELAP | 6 | 30613 | 06-30-17 |
| Maine | State Program | 1 | TN00032 | 11-03-17 |
| Maryland | State Program | 3 | 316 | 03-31-17 |
| Massachusetts | State Program | 1 | M-TN032 | 06-30-17 |
| Minnesota | NELAP | 5 | 047-999-345 | 12-31-16 * |
| Mississippi | State Program | 4 | N/A | 06-30-17 |
| Montana (UST) | State Program | 8 | NA | 02-24-20 |
| Nevada | State Program | 9 | TN00032 | 07-31-17 |
| New Hampshire | NELAP | 1 | 2963 | 10-09-17 |
| New Jersey | NELAP | 2 | TN965 | 06-30-17 |
| New York | NELAP | 2 | 11342 | 03-31-17 |
| North Carolina (WW/SW) | State Program | 4 | 387 | 12-31-16 * |
| North Dakota | State Program | 8 | R-146 | 06-30-17 |
| Ohio VAP | State Program | 5 | CL0033 | 07-10-17 |
| Oklahoma | State Program | 6 | 9412 | 08-31-17 |
| Oregon | NELAP | 10 | TN200001 | 04-27-17 |
| Pennsylvania | NELAP | 3 | 68-00585 | 06-30-17 |
| Rhode Island | State Program | 1 | LAO00268 | 12-30-16 * |
| South Carolina | State Program | 4 | 84009 (001) | 02-18-17 |
| South Carolina (Do Not Use - DW) | State Program | 4 | 84009 (002) | 12-16-17 |
| Tennessee | State Program | 4 | 2008 | 02-23-17 |
| Texas | NELAP | 6 | T104704077 | 08-31-17 |
| USDA | Federal | | P330-13-00306 | 12-01-16 * |
| Utah | NELAP | 8 | TN00032 | 07-31-17 |
| Virginia | NELAP | 3 | 460152 | 06-14-17 |
| Washington | State Program | 10 | C789 | 07-19-17 |
| West Virginia DEP | State Program | 3 | 219 | 02-28-17 |
| Wisconsin | State Program | 5 | 998020430 | 08-31-17 |
| Wyoming (UST) | A2LA | 8 | 453.07 | 12-31-17 |

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

# COOLER RECEIPT FORM

490-116230 Chain of Custody

Cooler Received/Opened On 11/16/2016 @ ~~0920~~ 1025 mm 11.16.16

Time Samples Removed From Cooler 1601 Time Samples Placed In Storage 1619 (2 Hour Window)

1. Tracking # 2939 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot HC682547 Chlorine Strip Lot 0613160

2. Temperature of rep. sample or temp blank when opened: 2.9 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 - Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) WD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial) PM

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) PM

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) PM

I certify that I attached a label with the unique LIMS number to each container (intial) PM

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

Revised 12/15/15

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

# Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

| Client | Project Manager | Date | Chain of Custody Number |
|---|---|---|---|
| DUKE ENERGY (S+ME) | JOHN WHITEHEAD | 11.15.16 | 302118 |

| Address | Telephone Number (Area Code)/Fax Number | Lab Number | Page |
|---|---|---|---|
| 301 ZIMA PARK DR. | (864) 574-2300 / 576-8730 | | Page 1 of 1 |

| City | State | Zip Code | Site Contact | Lab Contact |
|---|---|---|---|---|
| SPARTANBURG | SC | 29301 | S. GORETOY | CANDACE BONHAM |

| Project Name and Location (State) | Carrier/Waybill Number |
|---|---|
| BRAMLETTE ROAD MGP SC | FEDEX |

Contract/Purchase Order/Quote No.: ORDER # 00321902

Analysis (Attach list if more space is needed)

Loc: 490
116230

| Sample I.D. No. and Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed | Soil | Containers & Preservatives: Unpres | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | 8260 FULL LIST | NO3/SO4 | ALKALINITY | MANGANESE | FERROUS IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 MW-1 | 11.15.16 | 16:02 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 2 MW-3 | " " | 13:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 3 MW-3D | " " | 12:47 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 4 MW-19 | " " | 15:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 5 MW-20 | " " | 14:27 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |

Special Instructions/ Conditions of Receipt

project# 490001932

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other STANDARD

QC Requirements (Specify)

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| 1. Relinquished By | 11.15.16 | 17:52 | 1. Received By | 2.9 11/16/16 | 1025 |
| 2. Relinquished By | | | 2. Received By | | |
| 3. Relinquished By | | | 3. Received By | | |

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

# ANALYTICAL LABORATORY REQUEST FORM (ARF)

| | |
|---|---|
| *(1) Complete all yellow sections of this form. Move through by striking the "TAB" key.* | |
| *(2) Save the file & e-mail to:* | labcustomer@duke-energy.com |
| *Questions / Problems Call:* | 704-875-5245 |

**Duke Energy Completes and sends ARF to the engineering firm**

## Customer Information

| Your Name | Office Phone | Cell Phone |
|---|---|---|
| John Whitehead | 864-574-2360 | 864-580-1429 |
| **Project Name** (Use Remediation&Decommissioning Site Names) | | Your e-Mail Address |
| Bramlette Rd. MGP | | jwhitehead@smeinc.com |

| Duke Vendor Labs & Contact | Accounting Fields | |
|---|---|---|
| *Test America:* ***Candace.Bonham@testamericainc.com*** | Accounting Type | Specific Accounting |
| *Pace:* ***Kevin.Herring@pacelabs.com*** | Operating Unit | |
| *Acutest:* ***Andreac@accutest.com*** | Project ID | |
| *Prism:* ***Aovercash@prismlabs.com*** | Activity ID | |
| | Account | |
| ***Also send copy to - labcustomer@duke-energy.com*** | | |

**Engineering Firm Completes these sections and sends ARF to one of the Duke Vendor Lab Contacts listed above**

## Sampling Information

| Sampling Personnel / Contractor | Scheduled Sampling Date | Date Sample Kit Needed |
|---|---|---|
| scott dacus/ s&me | Week of 11-14-16 | 10/31/2016 |

**Shipping Address for Kit**

| Name | Phone | Mail Code |
|---|---|---|
| S&ME, Inc. | 864-574-2360 | |
| Street Address - 301 Zima Park Road | State | Zip Code |
| Spartanburg | SC | 29301 |

## Reporting

| Report Due Date | Additional Reports - .pdf file w/ Basic QC and EDD (spreadsheet) is Standard | |
|---|---|---|
| | | |
| Report To (e-Mail Address 1) | Report To (e-Mail Address 2) | Report to (e-Mail Address 3) |
| jwhitehead@smeinc.com | larmstrong@smeinc.com | TimHunsucker@duke-energy.com |

## Project Specifics

| Project Name | Program Type |
|---|---|
| Bramlette Rd. MGP | Groundwater |

| Site, Location or Station | State | Approximate Number of Days Sampling is Scheduled |
|---|---|---|
| Greenville | S.C. | 3 |

Notes, Special Requests, Required Contract Lab to use, etc.

S&ME job number 1264-08-105. If you have any questions, please call John Whitehead.

| Bottles | Matrix | Variables, Methods |
|---|---|---|
| 17 (Includes Field Blank) | GW | EPA 8260 - Full List (Please send unpreserved bottles as per SCDHEC regs.) |
| 16 Samples | GW | Nitrate, Sulfate, Ferrous Iron, Alkalinity |
| 16 Samples | GW | Manganese |
| 1 Sample | W | Trip Blank - EPA 8260 (Full List) |
| | | |
| | | **Please send lab grade water for field blank.** |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | IMPORTANT: Include QC samples (duplicates) with regular samples no need to separate |

# Login Sample Receipt Checklist

Client: Duke Energy Corporation

Job Number: 490-116230-1

**Login Number: 116230**
**List Number: 1**
**Creator: Ngo, Phiet**

**List Source: TestAmerica Nashville**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | True | |

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**

**Program Manager: Amanda Payne**

**Order ID**
**J16110519**

*Please contact the Program Manager, Amanda Payne, at 980-875-6995 with any questions regarding this report.*

**Sample Number: 2016037278** **MW-2**

Collected Date: 11/16/2016 10:18 AM Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037279** **MW-15**

Collected Date: 11/16/2016 11:50 AM Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037280** **MW-16**

Collected Date: 11/16/2016 11:30 AM Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

# Certificate of Laboratory Analysis

**MGP: Bramlette MGP - South Carolina**
**Program Manager: Amanda Payne**

**Order ID**
**J16110519**

**Sample Number: 2016037281** **MW-25R**

Collected Date: 11/16/2016 01:15 PM Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **DIONEX ANIONS BY VENDOR - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **METALS ANALYSIS BY VENDOR LAB - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037282** **FIELD BLANK**

Collected Date: 11/16/2016 10:30 AM Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Sample Number: 2016037283** **TRIP BLANK**

Collected Date: 11/16/2016 Collected By: S&ME Date Received: 11/17/16

| | Result: | Units: | Qualifier: | RDL: | Dilution: | Method: |
|---|---|---|---|---|---|---|
| **VOLATILES - (Analysis Performed by Test America)** | | | | | | |
| Vendor Parameter | Complete | | | | 1 | V_T. America |

**Program Manager:** **Amanda Payne**
980-875-6995

**Report Authorized By: (Signature)**

Digitally signed by Amanda Payne
Date: 2016.12.06 15:54:41 -05'00'

An EDD has been included with this report.



**Mail Code MG03A2 -- 13339 Hagers Ferry Road, Huntersville, NC 28078. -- Phone: 704-787-5245 Fax 980-875-4349**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-116307-1
Client Project/Site: Bramlett Rd. MGP J16110519

For:
Duke Energy Corporation
13339 Hagers Ferry Road
Huntersville, North Carolina 28078

Attn: Lab Customer

*Authorized for release by:*
*12/1/2016 1:39:06 PM*

Shali Brown, Project Manager II
(615)301-5031
shali.brown@testamericainc.com

# Table of Contents

# Sample Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 490-116307-1 | MW-2 | Water | 11/16/16 10:18 | 11/17/16 10:05 |
| 490-116307-2 | MW-15 | Water | 11/16/16 11:50 | 11/17/16 10:05 |
| 490-116307-3 | MW-16 | Water | 11/16/16 11:30 | 11/17/16 10:05 |
| 490-116307-4 | MW-25R | Water | 11/16/16 13:15 | 11/17/16 10:05 |
| 490-116307-5 | FIELD BLANK | Water | 11/16/16 10:30 | 11/17/16 10:05 |
| 490-116307-6 | TRIP BLANK | Water | 11/16/16 00:01 | 11/17/16 10:05 |

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Job ID: 490-116307-1

**Laboratory: TestAmerica Nashville**

**Narrative**

## CASE NARRATIVE

## Client: Duke Energy Corporation

## Project: Bramlett Rd. MGP J16110519

## Report Number: 490-116307-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Nashville attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

**RECEIPT**
The samples were received on 11/17/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.6 C.

**VOLATILE ORGANIC COMPOUNDS (GC-MS)**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3), MW-25R (490-116307-4), FIELD BLANK (490-116307-5) and TRIP BLANK (490-116307-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/22/2016 and 11/23/2016.

1,3,5-Trimethylbenzene failed the recovery criteria high for LCSD 490-388780/4. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.
Chloroethane exceeded the RPD limit for LCSD 490-388956/4. Refer to the QC report for details.

Sample MW-2 (490-116307-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**TOTAL METALS (ICP)**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4) were analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/25/2016 and analyzed on 11/29/2016.

# Case Narrative

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Job ID: 490-116307-1 (Continued)

### Laboratory: TestAmerica Nashville (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**ALKALINITY**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 11/28/2016 and 11/30/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**SULFATE**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/26/2016.

Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-389897. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Sample MW-16 (490-116307-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**NITRATE**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 11/26/2016.

Reanalysis of the following samples was performed outside of the analytical holding time due to the initial continuous calibration verification exceeding acceptance limits.: MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4).

Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-389898. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Sample MW-15 (490-116307-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**FERROUS IRON**
Samples MW-2 (490-116307-1), MW-15 (490-116307-2), MW-16 (490-116307-3) and MW-25R (490-116307-4) were analyzed for ferrous iron in accordance with SM 3500 F+2 B. The samples were analyzed on 11/22/2016.

Samples MW-2 (490-116307-1)[10X], MW-16 (490-116307-3)[10X] and MW-25R (490-116307-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| * | RPD of the LCS and LCSD exceeds the control limits |
| * | LCS or LCSD is outside acceptance limits. |

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| H | Sample was prepped or analyzed beyond the specified holding time |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| HF | Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: MW-2**
**Date Collected: 11/16/16 10:18**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-1**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 13:59 | 1 |
| **Benzene** | **333** | | 5.00 | | ug/L | | | 11/23/16 16:10 | 5 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 13:59 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| **Ethylbenzene** | **23.2** | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 13:59 | 1 |
| **Isopropylbenzene** | **2.46** | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 13:59 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| **Naphthalene** | **258** | | 25.0 | | ug/L | | | 11/23/16 16:10 | 5 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-2

**Date Collected: 11/16/16 10:18**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-1

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| **1,2,4-Trimethylbenzene** | **1.40** | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| **1,3,5-Trimethylbenzene** | **5.93** | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/23/16 13:59 | 1 |
| **Xylenes, Total** | **14.4** | | 3.00 | | ug/L | | | 11/23/16 13:59 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/23/16 13:59* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/23/16 16:10* | *5* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/23/16 13:59* | *1* |
| *Dibromofluoromethane (Surr)* | *96* | | *70 - 130* | | *11/23/16 16:10* | *5* |
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *70 - 130* | | *11/23/16 13:59* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *70 - 130* | | *11/23/16 16:10* | *5* |
| *Toluene-d8 (Surr)* | *114* | | *70 - 130* | | *11/23/16 13:59* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *70 - 130* | | *11/23/16 16:10* | *5* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H | 0.100 | | mg/L | | | 11/26/16 15:46 | 1 |
| Sulfate | ND | | 1.00 | | mg/L | | | 11/26/16 15:46 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **1.35** | | 0.0150 | | mg/L | | 11/25/16 14:31 | 11/29/16 20:36 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **214** | | 10.0 | | mg/L | | | 11/30/16 17:33 | 1 |
| **Ferrous Iron** | **17.5** | **HF** | 1.00 | | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: MW-15**
**Date Collected: 11/16/16 11:50**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-2**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 05:39 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 05:39 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Chloroethane | ND | * | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| **cis-1,2-Dichloroethene** | **1.77** | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 05:39 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 05:39 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-15

**Date Collected: 11/16/16 11:50**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-2

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/23/16 05:39 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/23/16 05:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *87* | | *70 - 130* | | *11/23/16 05:39* | *1* |
| *Dibromofluoromethane (Surr)* | *95* | | *70 - 130* | | *11/23/16 05:39* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *87* | | *70 - 130* | | *11/23/16 05:39* | *1* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* | | *11/23/16 05:39* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrate as N** | **6.48** | **H** | 1.00 | | mg/L | | | 11/26/16 17:26 | 10 |
| **Sulfate** | **1.96** | | 1.00 | | mg/L | | | 11/26/16 15:57 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.0974** | | 0.0150 | | mg/L | | 11/25/16 14:31 | 11/29/16 20:00 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **27.1** | | 10.0 | | mg/L | | | 11/30/16 17:38 | 1 |
| **Ferrous Iron** | **0.538** | **HF** | 0.100 | | mg/L | | | 11/22/16 18:59 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: MW-16**
**Date Collected: 11/16/16 11:30**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-3**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 06:04 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 06:04 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Chloroethane | ND | * | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 06:04 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 06:04 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:04 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-16
**Date Collected: 11/16/16 11:30**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-3
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/23/16 06:04 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/23/16 06:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | | *11/23/16 06:04* | *1* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* | | *11/23/16 06:04* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *84* | | *70 - 130* | | *11/23/16 06:04* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* | | *11/23/16 06:04* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | H | 0.100 | mg/L | | | 11/26/16 16:09 | 1 |
| **Sulfate** | **184** | | 10.0 | mg/L | | | 11/26/16 18:00 | 10 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.340** | | 0.0150 | mg/L | | 11/25/16 14:31 | 11/29/16 20:41 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **326** | | 10.0 | mg/L | | | 11/28/16 12:26 | 1 |
| **Ferrous Iron** | **28.0** | **HF** | 1.00 | mg/L | | | 11/22/16 18:59 | 10 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: MW-25R**
**Date Collected: 11/16/16 13:15**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-4**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 06:29 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 06:29 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Chloroethane | ND | * | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 06:29 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 06:29 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-25R
**Date Collected: 11/16/16 13:15**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-4
**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Tetrachloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Toluene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Trichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Vinyl chloride | ND | | 1.00 | | ug/L | | | 11/23/16 06:29 | 1 |
| Xylenes, Total | ND | | 3.00 | | ug/L | | | 11/23/16 06:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | | *11/23/16 06:29* | *1* |
| *Dibromofluoromethane (Surr)* | *92* | | *70 - 130* | | *11/23/16 06:29* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* | | *11/23/16 06:29* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *70 - 130* | | *11/23/16 06:29* | *1* |

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrate as N** | **0.118** | **H** | 0.100 | | mg/L | | | 11/26/16 16:20 | 1 |
| **Sulfate** | **11.2** | | 1.00 | | mg/L | | | 11/26/16 16:20 | 1 |

### Method: 6010C - Metals (ICP)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Manganese** | **0.118** | | 0.0150 | | mg/L | | 11/25/16 14:31 | 11/29/16 20:46 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Alkalinity** | **46.6** | | 10.0 | | mg/L | | | 11/30/16 17:49 | 1 |
| **Ferrous Iron** | **4.86** | **HF** | 0.500 | | mg/L | | | 11/22/16 18:59 | 5 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: FIELD BLANK**
**Date Collected: 11/16/16 10:30**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Acetone | ND | | 25.0 | | ug/L | | | 11/22/16 14:07 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/22/16 14:07 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/22/16 14:07 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/22/16 14:07 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| Styrene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| tert-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 14:07 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: FIELD BLANK**
**Date Collected: 11/16/16 10:30**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-5**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| 1,3,5-Trimethylbenzene | ND | * | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/22/16 14:07 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/22/16 14:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/22/16 14:07* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/22/16 14:07* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* | | *11/22/16 14:07* | *1* |
| *Toluene-d8 (Surr)* | *113* | | *70 - 130* | | *11/22/16 14:07* | *1* |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: TRIP BLANK**
**Date Collected: 11/16/16 00:01**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-6**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2,3-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,3,5-Trimethylbenzene | ND | * | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/22/16 13:41 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/22/16 13:41 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/22/16 13:41 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/22/16 13:41 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/22/16 13:41 | 1 |

# Client Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

**Client Sample ID: TRIP BLANK**
**Date Collected: 11/16/16 00:01**
**Date Received: 11/17/16 10:05**

**Lab Sample ID: 490-116307-6**
**Matrix: Water**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | ND | | 5.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Naphthalene | ND | | 5.00 | ug/L | | | 11/22/16 13:41 | 1 |
| n-Butylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| N-Propylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| sec-Butylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/22/16 13:41 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/22/16 13:41 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* | | *11/22/16 13:41* | *1* |
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | | *11/22/16 13:41* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/22/16 13:41* | *1* |
| *Toluene-d8 (Surr)* | *106* | | *70 - 130* | | *11/22/16 13:41* | *1* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 490-388780/7**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/22/16 13:15 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/22/16 13:15 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/22/16 13:15 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/22/16 13:15 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388780/7**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/22/16 13:15 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/22/16 13:15 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | | *11/22/16 13:15* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* | | *11/22/16 13:15* | *1* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* | | *11/22/16 13:15* | *1* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* | | *11/22/16 13:15* | *1* |

**Lab Sample ID: LCS 490-388780/3**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.25 | | ug/L | | 91 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 18.96 | | ug/L | | 95 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 97.70 | | ug/L | | 98 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 24.97 | | ug/L | | 125 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.89 | | ug/L | | 104 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.54 | | ug/L | | 103 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 22.52 | | ug/L | | 113 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 22.30 | | ug/L | | 112 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 19.94 | | ug/L | | 100 | 70 - 130 |
| Acetone | 100 | 94.27 | | ug/L | | 94 | 39 - 150 |
| Benzene | 20.0 | 21.16 | | ug/L | | 106 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 20.80 | | ug/L | | 104 | 70 - 132 |
| Bromobenzene | 20.0 | 20.54 | | ug/L | | 103 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 20.96 | | ug/L | | 105 | 70 - 130 |
| Bromochloromethane | 20.0 | 19.41 | | ug/L | | 97 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 19.50 | | ug/L | | 97 | 70 - 130 |
| Bromodichloromethane | 20.0 | 19.04 | | ug/L | | 95 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 18.70 | | ug/L | | 93 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388780/3**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 19.73 | | ug/L | | 99 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 20.25 | | ug/L | | 101 | 70 - 130 |
| Bromomethane | 20.0 | 16.71 | | ug/L | | 84 | 53 - 150 |
| Carbon disulfide | 20.0 | 24.17 | | ug/L | | 121 | 64 - 135 |
| Diisopropyl ether | 20.0 | 19.95 | | ug/L | | 100 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 18.95 | | ug/L | | 95 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.73 | | ug/L | | 104 | 70 - 130 |
| 2-Hexanone | 100 | 90.68 | | ug/L | | 91 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 20.86 | | ug/L | | 104 | 70 - 133 |
| Chloroethane | 20.0 | 21.34 | | ug/L | | 107 | 60 - 138 |
| Chloroform | 20.0 | 20.64 | | ug/L | | 103 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 96.41 | | ug/L | | 96 | 60 - 137 |
| Chloromethane | 20.0 | 19.67 | | ug/L | | 98 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 21.19 | | ug/L | | 106 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 20.56 | | ug/L | | 103 | 70 - 133 |
| Dibromomethane | 20.0 | 18.99 | | ug/L | | 95 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 17.87 | | ug/L | | 89 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.18 | | ug/L | | 96 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 19.36 | | ug/L | | 97 | 70 - 138 |
| Isopropylbenzene | 20.0 | 19.08 | | ug/L | | 95 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 20.60 | | ug/L | | 103 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 18.15 | | ug/L | | 91 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 21.85 | | ug/L | | 109 | 69 - 131 |
| Methylene Chloride | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 |
| Naphthalene | 20.0 | 15.80 | | ug/L | | 79 | 54 - 150 |
| n-Butylbenzene | 20.0 | 22.90 | | ug/L | | 115 | 68 - 137 |
| N-Propylbenzene | 20.0 | 22.15 | | ug/L | | 111 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 21.36 | | ug/L | | 107 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 21.69 | | ug/L | | 108 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 16.73 | | ug/L | | 84 | 46 - 150 |
| Styrene | 20.0 | 20.10 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.04 | | ug/L | | 85 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 21.88 | | ug/L | | 109 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 18.96 | | ug/L | | 95 | 70 - 135 |
| Tetrachloroethene | 20.0 | 18.37 | | ug/L | | 92 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 19.67 | | ug/L | | 98 | 70 - 130 |
| Toluene | 20.0 | 19.81 | | ug/L | | 99 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 22.17 | | ug/L | | 111 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 21.21 | | ug/L | | 106 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 17.87 | | ug/L | | 89 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 21.45 | | ug/L | | 107 | 70 - 130 |
| Trichloroethene | 20.0 | 19.43 | | ug/L | | 97 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 25.48 | | ug/L | | 127 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 18.59 | | ug/L | | 93 | 59 - 150 |
| Vinyl chloride | 20.0 | 20.90 | | ug/L | | 104 | 57 - 137 |
| Xylenes, Total | 40.0 | 38.79 | | ug/L | | 97 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388780/3**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 108 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 96 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 98 | | 70 - 130 |
| Toluene-d8 (Surr) | 103 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388780/4**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.28 | | ug/L | | 91 | 45 - 138 | 0 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.39 | | ug/L | | 97 | 70 - 130 | 2 | 13 |
| 2-Butanone (MEK) | 100 | 99.02 | | ug/L | | 99 | 55 - 143 | 1 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 20.67 | | ug/L | | 103 | 70 - 130 | 2 | 12 |
| 2-Chlorotoluene | 20.0 | 25.85 | | ug/L | | 129 | 70 - 130 | 3 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 21.26 | | ug/L | | 106 | 70 - 130 | 2 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.76 | | ug/L | | 104 | 70 - 130 | 1 | 12 |
| 4-Chlorotoluene | 20.0 | 22.72 | | ug/L | | 114 | 70 - 130 | 1 | 15 |
| 1,1-Dichloroethane | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 | 15 | 17 |
| 1,2-Dichloroethane | 20.0 | 19.97 | | ug/L | | 100 | 70 - 130 | 0 | 13 |
| Acetone | 100 | 95.60 | | ug/L | | 96 | 39 - 150 | 1 | 23 |
| Benzene | 20.0 | 22.29 | | ug/L | | 111 | 70 - 130 | 5 | 12 |
| 1,1-Dichloroethene | 20.0 | 21.52 | | ug/L | | 108 | 70 - 132 | 3 | 20 |
| Bromobenzene | 20.0 | 20.48 | | ug/L | | 102 | 70 - 130 | 0 | 16 |
| 1,2-Dichloropropane | 20.0 | 21.95 | | ug/L | | 110 | 70 - 130 | 5 | 15 |
| Bromochloromethane | 20.0 | 19.97 | | ug/L | | 100 | 70 - 130 | 3 | 16 |
| 1,3-Dichloropropane | 20.0 | 20.14 | | ug/L | | 101 | 70 - 130 | 3 | 12 |
| Bromodichloromethane | 20.0 | 19.22 | | ug/L | | 96 | 70 - 130 | 1 | 14 |
| 2,2-Dichloropropane | 20.0 | 19.33 | | ug/L | | 97 | 60 - 143 | 3 | 20 |
| Bromoform | 20.0 | 20.32 | | ug/L | | 102 | 70 - 137 | 3 | 14 |
| 1,1-Dichloropropene | 20.0 | 20.68 | | ug/L | | 103 | 70 - 130 | 2 | 16 |
| Bromomethane | 20.0 | 19.52 | | ug/L | | 98 | 53 - 150 | 16 | 19 |
| Carbon disulfide | 20.0 | 24.73 | | ug/L | | 124 | 64 - 135 | 2 | 16 |
| Diisopropyl ether | 20.0 | 20.32 | | ug/L | | 102 | 66 - 142 | 2 | 14 |
| Carbon tetrachloride | 20.0 | 20.21 | | ug/L | | 101 | 70 - 147 | 6 | 16 |
| Chlorobenzene | 20.0 | 21.42 | | ug/L | | 107 | 70 - 130 | 3 | 12 |
| 2-Hexanone | 100 | 94.58 | | ug/L | | 95 | 54 - 142 | 4 | 17 |
| Chlorodibromomethane | 20.0 | 21.35 | | ug/L | | 107 | 70 - 133 | 2 | 13 |
| Chloroethane | 20.0 | 21.61 | | ug/L | | 108 | 60 - 138 | 1 | 15 |
| Chloroform | 20.0 | 20.97 | | ug/L | | 105 | 70 - 130 | 2 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 97.37 | | ug/L | | 97 | 60 - 137 | 1 | 21 |
| Chloromethane | 20.0 | 21.19 | | ug/L | | 106 | 33 - 150 | 7 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 21.79 | | ug/L | | 109 | 70 - 130 | 3 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 20.68 | | ug/L | | 103 | 70 - 133 | 1 | 15 |
| Dibromomethane | 20.0 | 19.49 | | ug/L | | 97 | 70 - 130 | 3 | 14 |
| Dichlorodifluoromethane | 20.0 | 18.19 | | ug/L | | 91 | 48 - 150 | 2 | 16 |
| Ethylbenzene | 20.0 | 20.33 | | ug/L | | 102 | 70 - 130 | 6 | 12 |
| Hexachlorobutadiene | 20.0 | 19.91 | | ug/L | | 100 | 70 - 138 | 3 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388780/4**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 19.90 | | ug/L | | 100 | 70 - 131 | 4 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.62 | | ug/L | | 108 | 70 - 130 | 5 | 13 |
| Methyl tert-butyl ether | 20.0 | 18.28 | | ug/L | | 91 | 70 - 130 | 1 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.24 | | ug/L | | 111 | 69 - 131 | 2 | 15 |
| Methylene Chloride | 20.0 | 21.43 | | ug/L | | 107 | 70 - 130 | 2 | 15 |
| Naphthalene | 20.0 | 15.83 | | ug/L | | 79 | 54 - 150 | 0 | 15 |
| n-Butylbenzene | 20.0 | 23.34 | | ug/L | | 117 | 68 - 137 | 2 | 14 |
| N-Propylbenzene | 20.0 | 23.10 | | ug/L | | 116 | 70 - 134 | 4 | 14 |
| p-Isopropyltoluene | 20.0 | 22.44 | | ug/L | | 112 | 66 - 130 | 5 | 13 |
| sec-Butylbenzene | 20.0 | 22.62 | | ug/L | | 113 | 70 - 135 | 4 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.28 | | ug/L | | 86 | 46 - 150 | 3 | 16 |
| Styrene | 20.0 | 21.05 | | ug/L | | 105 | 70 - 130 | 5 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.33 | | ug/L | | 87 | 58 - 147 | 2 | 15 |
| tert-Butylbenzene | 20.0 | 22.43 | | ug/L | | 112 | 70 - 130 | 2 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 19.55 | | ug/L | | 98 | 70 - 135 | 3 | 15 |
| Tetrachloroethene | 20.0 | 19.42 | | ug/L | | 97 | 70 - 130 | 6 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 20.31 | | ug/L | | 102 | 70 - 130 | 3 | 13 |
| Toluene | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 | 6 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 23.01 | | ug/L | | 115 | 70 - 130 | 4 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.82 | | ug/L | | 104 | 70 - 131 | 2 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 18.55 | | ug/L | | 93 | 63 - 142 | 4 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.28 | | ug/L | | 111 | 70 - 130 | 4 | 13 |
| Trichloroethene | 20.0 | 19.73 | | ug/L | | 99 | 70 - 130 | 2 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 26.23 | * | ug/L | | 131 | 70 - 130 | 3 | 14 |
| Trichlorofluoromethane | 20.0 | 19.47 | | ug/L | | 97 | 59 - 150 | 5 | 22 |
| Vinyl chloride | 20.0 | 21.74 | | ug/L | | 109 | 57 - 137 | 4 | 15 |
| Xylenes, Total | 40.0 | 41.14 | | ug/L | | 103 | 70 - 132 | 6 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: 490-116032-C-31 MS**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 1250 | 1253 | | ug/L | | 100 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 1250 | 1314 | | ug/L | | 105 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 6250 | 6807 | | ug/L | | 109 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 1250 | 1270 | | ug/L | | 102 | 70 - 130 |
| 2-Chlorotoluene | ND | | 1250 | 1567 | | ug/L | | 125 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 1250 | 1318 | | ug/L | | 105 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 1250 | 1304 | | ug/L | | 104 | 70 - 130 |
| 4-Chlorotoluene | ND | | 1250 | 1417 | | ug/L | | 113 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 1250 | 1493 | | ug/L | | 119 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116032-C-31 MS**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 1250 | 1289 | | ug/L | | 103 | 64 - 136 |
| Acetone | ND | | 6250 | 5924 | | ug/L | | 95 | 39 - 150 |
| Benzene | 98.4 | | 1250 | 1485 | | ug/L | | 111 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 1250 | 1452 | | ug/L | | 116 | 54 - 150 |
| Bromobenzene | ND | | 1250 | 1290 | | ug/L | | 103 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 1250 | 1411 | | ug/L | | 113 | 67 - 130 |
| Bromochloromethane | ND | | 1250 | 1309 | | ug/L | | 105 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 1250 | 1345 | | ug/L | | 108 | 70 - 130 |
| Bromodichloromethane | ND | | 1250 | 1310 | | ug/L | | 105 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 1250 | 1236 | | ug/L | | 99 | 50 - 146 |
| Bromoform | ND | | 1250 | 1280 | | ug/L | | 102 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 1250 | 1347 | | ug/L | | 108 | 54 - 150 |
| Bromomethane | ND | | 1250 | 1284 | | ug/L | | 103 | 30 - 150 |
| Carbon disulfide | ND | | 1250 | 1646 | | ug/L | | 132 | 35 - 150 |
| Diisopropyl ether | ND | | 1250 | 1258 | | ug/L | | 101 | 56 - 142 |
| Carbon tetrachloride | ND | | 1250 | 1380 | | ug/L | | 110 | 56 - 150 |
| Chlorobenzene | ND | | 1250 | 1321 | | ug/L | | 106 | 70 - 130 |
| 2-Hexanone | ND | | 6250 | 6073 | | ug/L | | 97 | 44 - 150 |
| Chlorodibromomethane | ND | | 1250 | 1484 | | ug/L | | 119 | 66 - 140 |
| Chloroethane | ND | | 1250 | 1412 | | ug/L | | 113 | 58 - 141 |
| Chloroform | ND | | 1250 | 1363 | | ug/L | | 109 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 6250 | 6134 | | ug/L | | 98 | 50 - 140 |
| Chloromethane | ND | | 1250 | 1472 | | ug/L | | 118 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 1250 | 1420 | | ug/L | | 114 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 1250 | 1326 | | ug/L | | 106 | 70 - 133 |
| Dibromomethane | ND | | 1250 | 1280 | | ug/L | | 102 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 1250 | 1298 | | ug/L | | 104 | 10 - 150 |
| Ethylbenzene | 205 | | 1250 | 1437 | | ug/L | | 99 | 65 - 139 |
| Hexachlorobutadiene | ND | | 1250 | 1246 | | ug/L | | 100 | 61 - 141 |
| Isopropylbenzene | ND | | 1250 | 1248 | | ug/L | | 99 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 1250 | 1392 | | ug/L | | 111 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 1250 | 1167 | | ug/L | | 93 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 1250 | 1419 | | ug/L | | 114 | 56 - 145 |
| Methylene Chloride | ND | | 1250 | 1407 | | ug/L | | 113 | 64 - 130 |
| Naphthalene | 238 | | 1250 | 1117 | | ug/L | | 70 | 32 - 150 |
| n-Butylbenzene | ND | | 1250 | 1458 | | ug/L | | 116 | 61 - 141 |
| N-Propylbenzene | ND | | 1250 | 1409 | | ug/L | | 111 | 53 - 150 |
| p-Isopropyltoluene | ND | | 1250 | 1376 | | ug/L | | 110 | 66 - 137 |
| sec-Butylbenzene | ND | | 1250 | 1406 | | ug/L | | 112 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 1250 | 1045 | | ug/L | | 84 | 36 - 150 |
| Styrene | ND | | 1250 | 1321 | | ug/L | | 106 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 1250 | 1123 | | ug/L | | 90 | 47 - 147 |
| tert-Butylbenzene | ND | | 1250 | 1397 | | ug/L | | 112 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 1250 | 1302 | | ug/L | | 104 | 68 - 144 |
| Tetrachloroethene | ND | | 1250 | 1314 | | ug/L | | 105 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 1250 | 1363 | | ug/L | | 109 | 70 - 130 |
| Toluene | 2510 | E | 1250 | 3395 | | ug/L | | 71 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 1250 | 1492 | | ug/L | | 119 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116032-C-31 MS**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 1250 | 1328 | | ug/L | | 106 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 1250 | 1257 | | ug/L | | 101 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 60.1 | | 1250 | 1431 | | ug/L | | 110 | 64 - 136 |
| Trichloroethene | ND | | 1250 | 1318 | | ug/L | | 105 | 63 - 135 |
| 1,3,5-Trimethylbenzene | 61.5 | * | 1250 | 1673 | | ug/L | | 129 | 69 - 139 |
| Trichlorofluoromethane | ND | | 1250 | 1387 | | ug/L | | 111 | 44 - 150 |
| Vinyl chloride | ND | | 1250 | 1458 | | ug/L | | 117 | 57 - 150 |
| Xylenes, Total | 1230 | | 2500 | 3690 | | ug/L | | 98 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 490-116032-C-31 MSD**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 1250 | 1277 | | ug/L | | 102 | 38 - 138 | 2 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 1250 | 1227 | | ug/L | | 98 | 65 - 137 | 7 | 21 |
| 2-Butanone (MEK) | ND | | 6250 | 6923 | | ug/L | | 111 | 50 - 143 | 2 | 28 |
| 1,2-Dichlorobenzene | ND | | 1250 | 1280 | | ug/L | | 102 | 70 - 130 | 1 | 15 |
| 2-Chlorotoluene | ND | | 1250 | 1556 | | ug/L | | 124 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 1250 | 1322 | | ug/L | | 106 | 68 - 131 | 0 | 14 |
| 1,4-Dichlorobenzene | ND | | 1250 | 1303 | | ug/L | | 104 | 70 - 130 | 0 | 14 |
| 4-Chlorotoluene | ND | | 1250 | 1404 | | ug/L | | 112 | 69 - 138 | 1 | 15 |
| 1,1-Dichloroethane | ND | | 1250 | 1519 | | ug/L | | 121 | 61 - 139 | 2 | 23 |
| 1,2-Dichloroethane | ND | | 1250 | 1301 | | ug/L | | 104 | 64 - 136 | 1 | 22 |
| Acetone | ND | | 6250 | 6509 | | ug/L | | 104 | 39 - 150 | 9 | 28 |
| Benzene | 98.4 | | 1250 | 1502 | | ug/L | | 112 | 55 - 147 | 1 | 22 |
| 1,1-Dichloroethene | ND | | 1250 | 1483 | | ug/L | | 119 | 54 - 150 | 2 | 24 |
| Bromobenzene | ND | | 1250 | 1300 | | ug/L | | 104 | 60 - 133 | 1 | 18 |
| 1,2-Dichloropropane | ND | | 1250 | 1420 | | ug/L | | 114 | 67 - 130 | 1 | 19 |
| Bromochloromethane | ND | | 1250 | 1300 | | ug/L | | 104 | 59 - 132 | 1 | 21 |
| 1,3-Dichloropropane | ND | | 1250 | 1250 | | ug/L | | 100 | 70 - 130 | 7 | 17 |
| Bromodichloromethane | ND | | 1250 | 1319 | | ug/L | | 106 | 70 - 140 | 1 | 196 |
| 2,2-Dichloropropane | ND | | 1250 | 1313 | | ug/L | | 105 | 50 - 146 | 6 | 20 |
| Bromoform | ND | | 1250 | 1264 | | ug/L | | 101 | 53 - 150 | 1 | 20 |
| 1,1-Dichloropropene | ND | | 1250 | 1373 | | ug/L | | 110 | 54 - 150 | 2 | 24 |
| Bromomethane | ND | | 1250 | 1431 | | ug/L | | 115 | 30 - 150 | 11 | 44 |
| Carbon disulfide | ND | | 1250 | 1629 | | ug/L | | 130 | 35 - 150 | 1 | 34 |
| Diisopropyl ether | ND | | 1250 | 1288 | | ug/L | | 103 | 56 - 142 | 2 | 22 |
| Carbon tetrachloride | ND | | 1250 | 1404 | | ug/L | | 112 | 56 - 150 | 2 | 18 |
| Chlorobenzene | ND | | 1250 | 1305 | | ug/L | | 104 | 70 - 130 | 1 | 15 |
| 2-Hexanone | ND | | 6250 | 5715 | | ug/L | | 91 | 44 - 150 | 6 | 21 |
| Chlorodibromomethane | ND | | 1250 | 1380 | | ug/L | | 110 | 66 - 140 | 7 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116032-C-31 MSD**
**Matrix: Water**
**Analysis Batch: 388780**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 1250 | 1430 | | ug/L | | 114 | 58 - 141 | 1 | 31 |
| Chloroform | ND | | 1250 | 1379 | | ug/L | | 110 | 66 - 138 | 1 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 6250 | 5773 | | ug/L | | 92 | 50 - 140 | 6 | 24 |
| Chloromethane | ND | | 1250 | 1522 | | ug/L | | 122 | 10 - 150 | 3 | 43 |
| cis-1,2-Dichloroethene | ND | | 1250 | 1455 | | ug/L | | 116 | 68 - 131 | 2 | 21 |
| cis-1,3-Dichloropropene | ND | | 1250 | 1255 | | ug/L | | 100 | 70 - 133 | 6 | 19 |
| Dibromomethane | ND | | 1250 | 1306 | | ug/L | | 105 | 70 - 130 | 2 | 19 |
| Dichlorodifluoromethane | ND | | 1250 | 1295 | | ug/L | | 104 | 10 - 150 | 0 | 50 |
| Ethylbenzene | 205 | | 1250 | 1415 | | ug/L | | 97 | 65 - 139 | 2 | 18 |
| Hexachlorobutadiene | ND | | 1250 | 1263 | | ug/L | | 101 | 61 - 141 | 1 | 26 |
| Isopropylbenzene | ND | | 1250 | 1225 | | ug/L | | 97 | 70 - 137 | 2 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 1250 | 1361 | | ug/L | | 109 | 70 - 131 | 2 | 16 |
| Methyl tert-butyl ether | ND | | 1250 | 1195 | | ug/L | | 96 | 55 - 141 | 2 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 1250 | 1377 | | ug/L | | 110 | 56 - 145 | 3 | 19 |
| Methylene Chloride | ND | | 1250 | 1425 | | ug/L | | 114 | 64 - 130 | 1 | 22 |
| Naphthalene | 238 | | 1250 | 1172 | | ug/L | | 75 | 32 - 150 | 5 | 40 |
| n-Butylbenzene | ND | | 1250 | 1447 | | ug/L | | 115 | 61 - 141 | 1 | 17 |
| N-Propylbenzene | ND | | 1250 | 1394 | | ug/L | | 110 | 53 - 150 | 1 | 18 |
| p-Isopropyltoluene | ND | | 1250 | 1374 | | ug/L | | 110 | 66 - 137 | 0 | 16 |
| sec-Butylbenzene | ND | | 1250 | 1390 | | ug/L | | 111 | 55 - 136 | 1 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 1250 | 1152 | | ug/L | | 92 | 36 - 150 | 10 | 43 |
| Styrene | ND | | 1250 | 1290 | | ug/L | | 103 | 70 - 130 | 2 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 1250 | 1170 | | ug/L | | 94 | 47 - 147 | 4 | 24 |
| tert-Butylbenzene | ND | | 1250 | 1399 | | ug/L | | 112 | 70 - 138 | 0 | 17 |
| 1,1,1-Trichloroethane | ND | | 1250 | 1304 | | ug/L | | 104 | 68 - 144 | 0 | 17 |
| Tetrachloroethene | ND | | 1250 | 1223 | | ug/L | | 98 | 57 - 138 | 7 | 17 |
| 1,1,2-Trichloroethane | ND | | 1250 | 1243 | | ug/L | | 99 | 70 - 130 | 9 | 18 |
| Toluene | 2510 | E | 1250 | 3324 | | ug/L | | 65 | 64 - 136 | 2 | 18 |
| trans-1,2-Dichloroethene | ND | | 1250 | 1511 | | ug/L | | 121 | 59 - 143 | 1 | 25 |
| 1,2,3-Trichloropropane | ND | | 1250 | 1320 | | ug/L | | 106 | 65 - 131 | 1 | 19 |
| trans-1,3-Dichloropropene | ND | | 1250 | 1199 | | ug/L | | 96 | 63 - 142 | 5 | 18 |
| 1,2,4-Trimethylbenzene | 60.1 | | 1250 | 1410 | | ug/L | | 108 | 64 - 136 | 1 | 18 |
| Trichloroethene | ND | | 1250 | 1346 | | ug/L | | 108 | 63 - 135 | 2 | 17 |
| 1,3,5-Trimethylbenzene | 61.5 | * | 1250 | 1661 | | ug/L | | 128 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 1250 | 1314 | | ug/L | | 105 | 44 - 150 | 5 | 32 |
| Vinyl chloride | ND | | 1250 | 1476 | | ug/L | | 118 | 57 - 150 | 1 | 37 |
| Xylenes, Total | 1230 | | 2500 | 3619 | | ug/L | | 96 | 69 - 132 | 2 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *101* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *99* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388956/7**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 01:50 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 01:50 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 01:50 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 01:50 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-388956/7**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/23/16 01:50 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/23/16 01:50 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *87* | | *70 - 130* | | *11/23/16 01:50* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* | | *11/23/16 01:50* | *1* |
| *Dibromofluoromethane (Surr)* | *93* | | *70 - 130* | | *11/23/16 01:50* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *70 - 130* | | *11/23/16 01:50* | *1* |

**Lab Sample ID: LCS 490-388956/3**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 21.04 | | ug/L | | 105 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 19.86 | | ug/L | | 99 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 100.9 | | ug/L | | 101 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 20.92 | | ug/L | | 105 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 19.88 | | ug/L | | 99 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.42 | | ug/L | | 102 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.41 | | ug/L | | 102 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 19.62 | | ug/L | | 98 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 18.02 | | ug/L | | 90 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 23.02 | | ug/L | | 115 | 70 - 130 |
| Acetone | 100 | 87.71 | | ug/L | | 88 | 39 - 150 |
| Benzene | 20.0 | 19.01 | | ug/L | | 95 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 17.97 | | ug/L | | 90 | 70 - 132 |
| Bromobenzene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 17.43 | | ug/L | | 87 | 70 - 130 |
| Bromochloromethane | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 18.94 | | ug/L | | 95 | 70 - 130 |
| Bromodichloromethane | 20.0 | 20.56 | | ug/L | | 103 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 21.09 | | ug/L | | 105 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388956/3**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 19.23 | | ug/L | | 96 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 18.34 | | ug/L | | 92 | 70 - 130 |
| Bromomethane | 20.0 | 13.36 | | ug/L | | 67 | 53 - 150 |
| Carbon disulfide | 20.0 | 15.85 | | ug/L | | 79 | 64 - 135 |
| Diisopropyl ether | 20.0 | 17.94 | | ug/L | | 90 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 19.88 | | ug/L | | 99 | 70 - 147 |
| Chlorobenzene | 20.0 | 19.84 | | ug/L | | 99 | 70 - 130 |
| 2-Hexanone | 100 | 88.95 | | ug/L | | 89 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 20.90 | | ug/L | | 105 | 70 - 133 |
| Chloroethane | 20.0 | 16.42 | | ug/L | | 82 | 60 - 138 |
| Chloroform | 20.0 | 20.22 | | ug/L | | 101 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 88.35 | | ug/L | | 88 | 60 - 137 |
| Chloromethane | 20.0 | 15.67 | | ug/L | | 78 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 19.85 | | ug/L | | 99 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 18.98 | | ug/L | | 95 | 70 - 133 |
| Dibromomethane | 20.0 | 20.80 | | ug/L | | 104 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 16.72 | | ug/L | | 84 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.28 | | ug/L | | 96 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 14.56 | | ug/L | | 73 | 70 - 138 |
| Isopropylbenzene | 20.0 | 19.84 | | ug/L | | 99 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 19.03 | | ug/L | | 95 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 20.41 | | ug/L | | 102 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 20.40 | | ug/L | | 102 | 69 - 131 |
| Methylene Chloride | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 |
| Naphthalene | 20.0 | 22.73 | | ug/L | | 114 | 54 - 150 |
| n-Butylbenzene | 20.0 | 17.84 | | ug/L | | 89 | 68 - 137 |
| N-Propylbenzene | 20.0 | 19.19 | | ug/L | | 96 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 18.85 | | ug/L | | 94 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 18.74 | | ug/L | | 94 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 21.31 | | ug/L | | 107 | 46 - 150 |
| Styrene | 20.0 | 20.15 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 19.90 | | ug/L | | 100 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 19.11 | | ug/L | | 96 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 20.25 | | ug/L | | 101 | 70 - 135 |
| Tetrachloroethene | 20.0 | 19.37 | | ug/L | | 97 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 19.64 | | ug/L | | 98 | 70 - 130 |
| Toluene | 20.0 | 18.40 | | ug/L | | 92 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 17.97 | | ug/L | | 90 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 19.16 | | ug/L | | 96 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 19.95 | | ug/L | | 100 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 19.57 | | ug/L | | 98 | 70 - 130 |
| Trichloroethene | 20.0 | 18.90 | | ug/L | | 94 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 19.78 | | ug/L | | 99 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 21.32 | | ug/L | | 107 | 59 - 150 |
| Vinyl chloride | 20.0 | 18.66 | | ug/L | | 93 | 57 - 137 |
| Xylenes, Total | 40.0 | 37.84 | | ug/L | | 95 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-388956/3**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 85 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 84 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 92 | | 70 - 130 |
| Toluene-d8 (Surr) | 105 | | 70 - 130 |

**Lab Sample ID: LCSD 490-388956/4**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 21.74 | | ug/L | | 109 | 45 - 138 | 3 | 19 |
| 1,2-Dibromoethane (EDB) | 20.0 | 20.07 | | ug/L | | 100 | 70 - 130 | 1 | 13 |
| 2-Butanone (MEK) | 100 | 96.41 | | ug/L | | 96 | 55 - 143 | 5 | 19 |
| 1,2-Dichlorobenzene | 20.0 | 21.08 | | ug/L | | 105 | 70 - 130 | 1 | 12 |
| 2-Chlorotoluene | 20.0 | 19.56 | | ug/L | | 98 | 70 - 130 | 2 | 15 |
| 1,3-Dichlorobenzene | 20.0 | 20.52 | | ug/L | | 103 | 70 - 130 | 0 | 13 |
| 1,4-Dichlorobenzene | 20.0 | 20.69 | | ug/L | | 103 | 70 - 130 | 1 | 12 |
| 4-Chlorotoluene | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 | 1 | 15 |
| 1,1-Dichloroethane | 20.0 | 18.27 | | ug/L | | 91 | 70 - 130 | 1 | 17 |
| 1,2-Dichloroethane | 20.0 | 22.77 | | ug/L | | 114 | 70 - 130 | 1 | 13 |
| Acetone | 100 | 86.50 | | ug/L | | 87 | 39 - 150 | 1 | 23 |
| Benzene | 20.0 | 19.10 | | ug/L | | 96 | 70 - 130 | 0 | 12 |
| 1,1-Dichloroethene | 20.0 | 18.54 | | ug/L | | 93 | 70 - 132 | 3 | 20 |
| Bromobenzene | 20.0 | 19.39 | | ug/L | | 97 | 70 - 130 | 1 | 16 |
| 1,2-Dichloropropane | 20.0 | 18.31 | | ug/L | | 92 | 70 - 130 | 5 | 15 |
| Bromochloromethane | 20.0 | 21.51 | | ug/L | | 108 | 70 - 130 | 6 | 16 |
| 1,3-Dichloropropane | 20.0 | 18.55 | | ug/L | | 93 | 70 - 130 | 2 | 12 |
| Bromodichloromethane | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 | 1 | 14 |
| 2,2-Dichloropropane | 20.0 | 20.85 | | ug/L | | 104 | 60 - 143 | 1 | 20 |
| Bromoform | 20.0 | 18.43 | | ug/L | | 92 | 70 - 137 | 4 | 14 |
| 1,1-Dichloropropene | 20.0 | 18.33 | | ug/L | | 92 | 70 - 130 | 0 | 16 |
| Bromomethane | 20.0 | 14.00 | | ug/L | | 70 | 53 - 150 | 5 | 19 |
| Carbon disulfide | 20.0 | 16.42 | | ug/L | | 82 | 64 - 135 | 4 | 16 |
| Diisopropyl ether | 20.0 | 18.02 | | ug/L | | 90 | 66 - 142 | 0 | 14 |
| Carbon tetrachloride | 20.0 | 20.15 | | ug/L | | 101 | 70 - 147 | 1 | 16 |
| Chlorobenzene | 20.0 | 19.53 | | ug/L | | 98 | 70 - 130 | 2 | 12 |
| 2-Hexanone | 100 | 88.62 | | ug/L | | 89 | 54 - 142 | 0 | 17 |
| Chlorodibromomethane | 20.0 | 20.10 | | ug/L | | 100 | 70 - 133 | 4 | 13 |
| Chloroethane | 20.0 | 19.61 | * | ug/L | | 98 | 60 - 138 | 18 | 15 |
| Chloroform | 20.0 | 20.15 | | ug/L | | 101 | 70 - 130 | 0 | 14 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 87.69 | | ug/L | | 88 | 60 - 137 | 1 | 21 |
| Chloromethane | 20.0 | 15.40 | | ug/L | | 77 | 33 - 150 | 2 | 20 |
| cis-1,2-Dichloroethene | 20.0 | 19.93 | | ug/L | | 100 | 70 - 130 | 0 | 15 |
| cis-1,3-Dichloropropene | 20.0 | 18.94 | | ug/L | | 95 | 70 - 133 | 0 | 15 |
| Dibromomethane | 20.0 | 20.53 | | ug/L | | 103 | 70 - 130 | 1 | 14 |
| Dichlorodifluoromethane | 20.0 | 16.75 | | ug/L | | 84 | 48 - 150 | 0 | 16 |
| Ethylbenzene | 20.0 | 19.04 | | ug/L | | 95 | 70 - 130 | 1 | 12 |
| Hexachlorobutadiene | 20.0 | 14.57 | | ug/L | | 73 | 70 - 138 | 0 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-388956/4**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 19.84 | | ug/L | | 99 | 70 - 131 | 0 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 18.78 | | ug/L | | 94 | 70 - 130 | 1 | 13 |
| Methyl tert-butyl ether | 20.0 | 20.91 | | ug/L | | 105 | 70 - 130 | 2 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 21.31 | | ug/L | | 107 | 69 - 131 | 4 | 15 |
| Methylene Chloride | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 | 1 | 15 |
| Naphthalene | 20.0 | 23.33 | | ug/L | | 117 | 54 - 150 | 3 | 15 |
| n-Butylbenzene | 20.0 | 17.93 | | ug/L | | 90 | 68 - 137 | 1 | 14 |
| N-Propylbenzene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 134 | 0 | 14 |
| p-Isopropyltoluene | 20.0 | 19.15 | | ug/L | | 96 | 66 - 130 | 2 | 13 |
| sec-Butylbenzene | 20.0 | 18.84 | | ug/L | | 94 | 70 - 135 | 0 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 20.41 | | ug/L | | 102 | 46 - 150 | 4 | 16 |
| Styrene | 20.0 | 20.29 | | ug/L | | 101 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 19.83 | | ug/L | | 99 | 58 - 147 | 0 | 15 |
| tert-Butylbenzene | 20.0 | 19.62 | | ug/L | | 98 | 70 - 130 | 3 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 20.18 | | ug/L | | 101 | 70 - 135 | 0 | 15 |
| Tetrachloroethene | 20.0 | 18.72 | | ug/L | | 94 | 70 - 130 | 3 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 18.73 | | ug/L | | 94 | 70 - 130 | 5 | 13 |
| Toluene | 20.0 | 18.52 | | ug/L | | 93 | 70 - 130 | 1 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 18.39 | | ug/L | | 92 | 70 - 130 | 2 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.44 | | ug/L | | 102 | 70 - 131 | 6 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 19.67 | | ug/L | | 98 | 63 - 142 | 1 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 19.89 | | ug/L | | 99 | 70 - 130 | 2 | 13 |
| Trichloroethene | 20.0 | 19.23 | | ug/L | | 96 | 70 - 130 | 2 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 19.59 | | ug/L | | 98 | 70 - 130 | 1 | 14 |
| Trichlorofluoromethane | 20.0 | 21.52 | | ug/L | | 108 | 59 - 150 | 1 | 22 |
| Vinyl chloride | 20.0 | 18.50 | | ug/L | | 92 | 57 - 137 | 1 | 15 |
| Xylenes, Total | 40.0 | 37.83 | | ug/L | | 95 | 70 - 132 | 0 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *85* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *91* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 490-115993-A-4 MS**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 50.0 | 50.13 | | ug/L | | 100 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 50.0 | 49.98 | | ug/L | | 100 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 250 | 248.3 | | ug/L | | 99 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 50.0 | 51.17 | | ug/L | | 102 | 70 - 130 |
| 2-Chlorotoluene | ND | | 50.0 | 49.70 | | ug/L | | 99 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 50.0 | 51.15 | | ug/L | | 102 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 50.0 | 50.35 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | ND | | 50.0 | 49.92 | | ug/L | | 100 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 50.0 | 46.14 | | ug/L | | 92 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115993-A-4 MS**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 50.0 | 57.19 | | ug/L | | 114 | 64 - 136 |
| Acetone | ND | | 250 | 204.2 | | ug/L | | 82 | 39 - 150 |
| Benzene | ND | | 50.0 | 48.52 | | ug/L | | 97 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 50.0 | 47.61 | | ug/L | | 95 | 54 - 150 |
| Bromobenzene | ND | | 50.0 | 48.55 | | ug/L | | 97 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 50.0 | 44.45 | | ug/L | | 89 | 67 - 130 |
| Bromochloromethane | ND | | 50.0 | 48.28 | | ug/L | | 97 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 50.0 | 44.21 | | ug/L | | 88 | 70 - 130 |
| Bromodichloromethane | ND | | 50.0 | 50.79 | | ug/L | | 102 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 50.0 | 49.53 | | ug/L | | 99 | 50 - 146 |
| Bromoform | ND | | 50.0 | 46.66 | | ug/L | | 93 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 50.0 | 47.42 | | ug/L | | 95 | 54 - 150 |
| Bromomethane | ND | | 50.0 | 35.65 | | ug/L | | 71 | 30 - 150 |
| Carbon disulfide | ND | | 50.0 | 40.25 | | ug/L | | 81 | 35 - 150 |
| Diisopropyl ether | ND | | 50.0 | 43.09 | | ug/L | | 86 | 56 - 142 |
| Carbon tetrachloride | ND | | 50.0 | 53.85 | | ug/L | | 108 | 56 - 150 |
| Chlorobenzene | ND | | 50.0 | 48.92 | | ug/L | | 98 | 70 - 130 |
| 2-Hexanone | ND | | 250 | 208.1 | | ug/L | | 83 | 44 - 150 |
| Chlorodibromomethane | ND | | 50.0 | 51.70 | | ug/L | | 103 | 66 - 140 |
| Chloroethane | ND | * | 50.0 | 41.55 | | ug/L | | 83 | 58 - 141 |
| Chloroform | ND | | 50.0 | 50.80 | | ug/L | | 102 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 250 | 206.8 | | ug/L | | 83 | 50 - 140 |
| Chloromethane | ND | | 50.0 | 39.27 | | ug/L | | 79 | 10 - 150 |
| cis-1,2-Dichloroethene | 52.5 | | 50.0 | 103.1 | | ug/L | | 101 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 50.0 | 45.82 | | ug/L | | 92 | 70 - 133 |
| Dibromomethane | ND | | 50.0 | 51.85 | | ug/L | | 104 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 50.0 | 43.07 | | ug/L | | 86 | 10 - 150 |
| Ethylbenzene | ND | | 50.0 | 47.95 | | ug/L | | 96 | 65 - 139 |
| Hexachlorobutadiene | ND | | 50.0 | 36.17 | | ug/L | | 72 | 61 - 141 |
| Isopropylbenzene | ND | | 50.0 | 50.60 | | ug/L | | 101 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 50.0 | 49.06 | | ug/L | | 98 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 50.0 | 49.50 | | ug/L | | 99 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 50.0 | 52.44 | | ug/L | | 105 | 56 - 145 |
| Methylene Chloride | ND | | 50.0 | 50.91 | | ug/L | | 102 | 64 - 130 |
| Naphthalene | ND | | 50.0 | 52.48 | | ug/L | | 105 | 32 - 150 |
| n-Butylbenzene | ND | | 50.0 | 45.08 | | ug/L | | 90 | 61 - 141 |
| N-Propylbenzene | ND | | 50.0 | 48.77 | | ug/L | | 98 | 53 - 150 |
| p-Isopropyltoluene | ND | | 50.0 | 48.01 | | ug/L | | 96 | 66 - 137 |
| sec-Butylbenzene | ND | | 50.0 | 47.99 | | ug/L | | 96 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 50.0 | 48.05 | | ug/L | | 96 | 36 - 150 |
| Styrene | ND | | 50.0 | 50.40 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 50.0 | 46.14 | | ug/L | | 92 | 47 - 147 |
| tert-Butylbenzene | ND | | 50.0 | 49.25 | | ug/L | | 99 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 50.0 | 54.19 | | ug/L | | 108 | 68 - 144 |
| Tetrachloroethene | 2.03 | | 50.0 | 51.13 | | ug/L | | 98 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 50.0 | 47.07 | | ug/L | | 94 | 70 - 130 |
| Toluene | ND | | 50.0 | 46.41 | | ug/L | | 93 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 50.0 | 46.27 | | ug/L | | 93 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115993-A-4 MS**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 50.0 | 48.76 | | ug/L | | 98 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 50.0 | 47.68 | | ug/L | | 95 | 63 - 142 |
| 1,2,4-Trimethylbenzene | ND | | 50.0 | 49.36 | | ug/L | | 99 | 64 - 136 |
| Trichloroethene | 44.0 | | 50.0 | 92.50 | | ug/L | | 97 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 50.0 | 49.68 | | ug/L | | 99 | 69 - 139 |
| Trichlorofluoromethane | ND | | 50.0 | 57.48 | | ug/L | | 115 | 44 - 150 |
| Vinyl chloride | ND | | 50.0 | 48.87 | | ug/L | | 97 | 57 - 150 |
| Xylenes, Total | ND | | 100 | 95.63 | | ug/L | | 96 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *83* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *88* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *94* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 490-115993-A-4 MSD**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 50.0 | 48.93 | | ug/L | | 98 | 38 - 138 | 2 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 50.0 | 49.58 | | ug/L | | 99 | 65 - 137 | 1 | 21 |
| 2-Butanone (MEK) | ND | | 250 | 238.6 | | ug/L | | 95 | 50 - 143 | 4 | 28 |
| 1,2-Dichlorobenzene | ND | | 50.0 | 51.07 | | ug/L | | 102 | 70 - 130 | 0 | 15 |
| 2-Chlorotoluene | ND | | 50.0 | 49.95 | | ug/L | | 100 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 50.0 | 50.62 | | ug/L | | 101 | 68 - 131 | 1 | 14 |
| 1,4-Dichlorobenzene | ND | | 50.0 | 49.71 | | ug/L | | 99 | 70 - 130 | 1 | 14 |
| 4-Chlorotoluene | ND | | 50.0 | 49.52 | | ug/L | | 99 | 69 - 138 | 1 | 15 |
| 1,1-Dichloroethane | ND | | 50.0 | 47.14 | | ug/L | | 94 | 61 - 139 | 2 | 23 |
| 1,2-Dichloroethane | ND | | 50.0 | 55.36 | | ug/L | | 111 | 64 - 136 | 3 | 22 |
| Acetone | ND | | 250 | 209.2 | | ug/L | | 84 | 39 - 150 | 2 | 28 |
| Benzene | ND | | 50.0 | 47.62 | | ug/L | | 95 | 55 - 147 | 2 | 22 |
| 1,1-Dichloroethene | ND | | 50.0 | 49.00 | | ug/L | | 98 | 54 - 150 | 3 | 24 |
| Bromobenzene | ND | | 50.0 | 48.61 | | ug/L | | 97 | 60 - 133 | 0 | 18 |
| 1,2-Dichloropropane | ND | | 50.0 | 44.11 | | ug/L | | 88 | 67 - 130 | 1 | 19 |
| Bromochloromethane | ND | | 50.0 | 49.30 | | ug/L | | 99 | 59 - 132 | 2 | 21 |
| 1,3-Dichloropropane | ND | | 50.0 | 45.01 | | ug/L | | 90 | 70 - 130 | 2 | 17 |
| Bromodichloromethane | ND | | 50.0 | 50.21 | | ug/L | | 100 | 70 - 140 | 1 | 196 |
| 2,2-Dichloropropane | ND | | 50.0 | 48.68 | | ug/L | | 97 | 50 - 146 | 2 | 20 |
| Bromoform | ND | | 50.0 | 46.45 | | ug/L | | 93 | 53 - 150 | 0 | 20 |
| 1,1-Dichloropropene | ND | | 50.0 | 47.62 | | ug/L | | 95 | 54 - 150 | 0 | 24 |
| Bromomethane | ND | | 50.0 | 41.30 | | ug/L | | 83 | 30 - 150 | 15 | 44 |
| Carbon disulfide | ND | | 50.0 | 40.78 | | ug/L | | 82 | 35 - 150 | 1 | 34 |
| Diisopropyl ether | ND | | 50.0 | 42.83 | | ug/L | | 86 | 56 - 142 | 1 | 22 |
| Carbon tetrachloride | ND | | 50.0 | 54.34 | | ug/L | | 109 | 56 - 150 | 1 | 18 |
| Chlorobenzene | ND | | 50.0 | 49.17 | | ug/L | | 98 | 70 - 130 | 1 | 15 |
| 2-Hexanone | ND | | 250 | 200.4 | | ug/L | | 80 | 44 - 150 | 4 | 21 |
| Chlorodibromomethane | ND | | 50.0 | 51.03 | | ug/L | | 102 | 66 - 140 | 1 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-115993-A-4 MSD**
**Matrix: Water**
**Analysis Batch: 388956**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | * | 50.0 | 48.95 | | ug/L | | 98 | 58 - 141 | 16 | 31 |
| Chloroform | ND | | 50.0 | 50.36 | | ug/L | | 101 | 66 - 138 | 1 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 250 | 205.2 | | ug/L | | 82 | 50 - 140 | 1 | 24 |
| Chloromethane | ND | | 50.0 | 40.34 | | ug/L | | 81 | 10 - 150 | 3 | 43 |
| cis-1,2-Dichloroethene | 52.5 | | 50.0 | 98.86 | | ug/L | | 93 | 68 - 131 | 4 | 21 |
| cis-1,3-Dichloropropene | ND | | 50.0 | 46.68 | | ug/L | | 93 | 70 - 133 | 2 | 19 |
| Dibromomethane | ND | | 50.0 | 49.78 | | ug/L | | 100 | 70 - 130 | 4 | 19 |
| Dichlorodifluoromethane | ND | | 50.0 | 42.95 | | ug/L | | 86 | 10 - 150 | 0 | 50 |
| Ethylbenzene | ND | | 50.0 | 48.29 | | ug/L | | 97 | 65 - 139 | 1 | 18 |
| Hexachlorobutadiene | ND | | 50.0 | 38.40 | | ug/L | | 77 | 61 - 141 | 6 | 26 |
| Isopropylbenzene | ND | | 50.0 | 52.04 | | ug/L | | 104 | 70 - 137 | 3 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 50.0 | 47.94 | | ug/L | | 96 | 70 - 131 | 2 | 16 |
| Methyl tert-butyl ether | ND | | 50.0 | 48.71 | | ug/L | | 97 | 55 - 141 | 2 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 50.0 | 48.93 | | ug/L | | 98 | 56 - 145 | 7 | 19 |
| Methylene Chloride | ND | | 50.0 | 50.50 | | ug/L | | 101 | 64 - 130 | 1 | 22 |
| Naphthalene | ND | | 50.0 | 54.31 | | ug/L | | 109 | 32 - 150 | 3 | 40 |
| n-Butylbenzene | ND | | 50.0 | 46.16 | | ug/L | | 92 | 61 - 141 | 2 | 17 |
| N-Propylbenzene | ND | | 50.0 | 50.06 | | ug/L | | 100 | 53 - 150 | 3 | 18 |
| p-Isopropyltoluene | ND | | 50.0 | 48.98 | | ug/L | | 98 | 66 - 137 | 2 | 16 |
| sec-Butylbenzene | ND | | 50.0 | 49.12 | | ug/L | | 98 | 55 - 136 | 2 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 50.0 | 51.17 | | ug/L | | 102 | 36 - 150 | 6 | 43 |
| Styrene | ND | | 50.0 | 50.74 | | ug/L | | 101 | 70 - 130 | 1 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 50.0 | 48.76 | | ug/L | | 98 | 47 - 147 | 6 | 24 |
| tert-Butylbenzene | ND | | 50.0 | 50.19 | | ug/L | | 100 | 70 - 138 | 2 | 17 |
| 1,1,1-Trichloroethane | ND | | 50.0 | 53.82 | | ug/L | | 108 | 68 - 144 | 1 | 17 |
| Tetrachloroethene | 2.03 | | 50.0 | 53.23 | | ug/L | | 102 | 57 - 138 | 4 | 17 |
| 1,1,2-Trichloroethane | ND | | 50.0 | 46.51 | | ug/L | | 93 | 70 - 130 | 1 | 18 |
| Toluene | ND | | 50.0 | 46.63 | | ug/L | | 93 | 64 - 136 | 0 | 18 |
| trans-1,2-Dichloroethene | ND | | 50.0 | 45.39 | | ug/L | | 91 | 59 - 143 | 2 | 25 |
| 1,2,3-Trichloropropane | ND | | 50.0 | 47.27 | | ug/L | | 95 | 65 - 131 | 3 | 19 |
| trans-1,3-Dichloropropene | ND | | 50.0 | 48.11 | | ug/L | | 96 | 63 - 142 | 1 | 18 |
| 1,2,4-Trimethylbenzene | ND | | 50.0 | 49.75 | | ug/L | | 99 | 64 - 136 | 1 | 18 |
| Trichloroethene | 44.0 | | 50.0 | 90.10 | | ug/L | | 92 | 63 - 135 | 3 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 50.0 | 50.54 | | ug/L | | 101 | 69 - 139 | 2 | 17 |
| Trichlorofluoromethane | ND | | 50.0 | 57.43 | | ug/L | | 115 | 44 - 150 | 0 | 32 |
| Vinyl chloride | ND | | 50.0 | 49.45 | | ug/L | | 98 | 57 - 150 | 1 | 37 |
| Xylenes, Total | ND | | 100 | 96.93 | | ug/L | | 97 | 69 - 132 | 1 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *84* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *85* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *93* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *105* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-389189/7**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 10.0 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2-Dibromoethane (EDB) | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 2-Butanone (MEK) | ND | | 50.0 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 2-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,3-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,4-Dichlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 4-Chlorotoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2-Dichloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Acetone | ND | | 25.0 | | ug/L | | | 11/23/16 13:32 | 1 |
| Benzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Bromobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Bromochloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,3-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Bromodichloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 2,2-Dichloropropane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Bromoform | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Bromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Carbon disulfide | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Diisopropyl ether | ND | | 2.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Carbon tetrachloride | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Chlorobenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 2-Hexanone | ND | | 10.0 | | ug/L | | | 11/23/16 13:32 | 1 |
| Chlorodibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Chloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Chloroform | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 10.0 | | ug/L | | | 11/23/16 13:32 | 1 |
| Chloromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| cis-1,2-Dichloroethene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| cis-1,3-Dichloropropene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Dibromomethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Dichlorodifluoromethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Ethylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Hexachlorobutadiene | ND | | 2.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Isopropylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1,1,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Methyl tert-butyl ether | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1,2,2-Tetrachloroethane | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Methylene Chloride | ND | | 5.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| Naphthalene | ND | | 5.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| n-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| N-Propylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| p-Isopropyltoluene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |
| sec-Butylbenzene | ND | | 1.00 | | ug/L | | | 11/23/16 13:32 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 490-389189/7**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Styrene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2,4-Trichlorobenzene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| tert-Butylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1,1-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Tetrachloroethene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,1,2-Trichloroethane | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Toluene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| trans-1,2-Dichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2,3-Trichloropropane | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| trans-1,3-Dichloropropene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,2,4-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Trichloroethene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| 1,3,5-Trimethylbenzene | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Trichlorofluoromethane | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Vinyl chloride | ND | | 1.00 | ug/L | | | 11/23/16 13:32 | 1 |
| Xylenes, Total | ND | | 3.00 | ug/L | | | 11/23/16 13:32 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | | *11/23/16 13:32* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *70 - 130* | | *11/23/16 13:32* | *1* |
| *Dibromofluoromethane (Surr)* | *99* | | *70 - 130* | | *11/23/16 13:32* | *1* |
| *Toluene-d8 (Surr)* | *109* | | *70 - 130* | | *11/23/16 13:32* | *1* |

**Lab Sample ID: LCS 490-389189/3**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | 20.0 | 18.30 | | ug/L | | 91 | 45 - 138 |
| 1,2-Dibromoethane (EDB) | 20.0 | 18.96 | | ug/L | | 95 | 70 - 130 |
| 2-Butanone (MEK) | 100 | 110.6 | | ug/L | | 111 | 55 - 143 |
| 1,2-Dichlorobenzene | 20.0 | 19.75 | | ug/L | | 99 | 70 - 130 |
| 2-Chlorotoluene | 20.0 | 24.05 | | ug/L | | 120 | 70 - 130 |
| 1,3-Dichlorobenzene | 20.0 | 20.17 | | ug/L | | 101 | 70 - 130 |
| 1,4-Dichlorobenzene | 20.0 | 20.18 | | ug/L | | 101 | 70 - 130 |
| 4-Chlorotoluene | 20.0 | 21.88 | | ug/L | | 109 | 70 - 130 |
| 1,1-Dichloroethane | 20.0 | 19.63 | | ug/L | | 98 | 70 - 130 |
| 1,2-Dichloroethane | 20.0 | 20.14 | | ug/L | | 101 | 70 - 130 |
| Acetone | 100 | 95.32 | | ug/L | | 95 | 39 - 150 |
| Benzene | 20.0 | 20.49 | | ug/L | | 102 | 70 - 130 |
| 1,1-Dichloroethene | 20.0 | 19.61 | | ug/L | | 98 | 70 - 132 |
| Bromobenzene | 20.0 | 19.69 | | ug/L | | 98 | 70 - 130 |
| 1,2-Dichloropropane | 20.0 | 20.94 | | ug/L | | 105 | 70 - 130 |
| Bromochloromethane | 20.0 | 20.56 | | ug/L | | 103 | 70 - 130 |
| 1,3-Dichloropropane | 20.0 | 19.68 | | ug/L | | 98 | 70 - 130 |
| Bromodichloromethane | 20.0 | 19.21 | | ug/L | | 96 | 70 - 130 |
| 2,2-Dichloropropane | 20.0 | 18.99 | | ug/L | | 95 | 60 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-389189/3**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromoform | 20.0 | 19.82 | | ug/L | | 99 | 70 - 137 |
| 1,1-Dichloropropene | 20.0 | 19.49 | | ug/L | | 97 | 70 - 130 |
| Bromomethane | 20.0 | 18.66 | | ug/L | | 93 | 53 - 150 |
| Carbon disulfide | 20.0 | 22.86 | | ug/L | | 114 | 64 - 135 |
| Diisopropyl ether | 20.0 | 19.75 | | ug/L | | 99 | 66 - 142 |
| Carbon tetrachloride | 20.0 | 19.07 | | ug/L | | 95 | 70 - 147 |
| Chlorobenzene | 20.0 | 20.84 | | ug/L | | 104 | 70 - 130 |
| 2-Hexanone | 100 | 88.27 | | ug/L | | 88 | 54 - 142 |
| Chlorodibromomethane | 20.0 | 20.72 | | ug/L | | 104 | 70 - 133 |
| Chloroethane | 20.0 | 20.03 | | ug/L | | 100 | 60 - 138 |
| Chloroform | 20.0 | 21.02 | | ug/L | | 105 | 70 - 130 |
| 4-Methyl-2-pentanone (MIBK) | 100 | 92.23 | | ug/L | | 92 | 60 - 137 |
| Chloromethane | 20.0 | 20.71 | | ug/L | | 104 | 33 - 150 |
| cis-1,2-Dichloroethene | 20.0 | 21.84 | | ug/L | | 109 | 70 - 130 |
| cis-1,3-Dichloropropene | 20.0 | 19.65 | | ug/L | | 98 | 70 - 133 |
| Dibromomethane | 20.0 | 19.70 | | ug/L | | 99 | 70 - 130 |
| Dichlorodifluoromethane | 20.0 | 15.42 | | ug/L | | 77 | 48 - 150 |
| Ethylbenzene | 20.0 | 19.18 | | ug/L | | 96 | 70 - 130 |
| Hexachlorobutadiene | 20.0 | 18.61 | | ug/L | | 93 | 70 - 138 |
| Isopropylbenzene | 20.0 | 18.42 | | ug/L | | 92 | 70 - 131 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.07 | | ug/L | | 105 | 70 - 130 |
| Methyl tert-butyl ether | 20.0 | 17.99 | | ug/L | | 90 | 70 - 130 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.01 | | ug/L | | 110 | 69 - 131 |
| Methylene Chloride | 20.0 | 21.27 | | ug/L | | 106 | 70 - 130 |
| Naphthalene | 20.0 | 16.03 | | ug/L | | 80 | 54 - 150 |
| n-Butylbenzene | 20.0 | 21.91 | | ug/L | | 110 | 68 - 137 |
| N-Propylbenzene | 20.0 | 21.28 | | ug/L | | 106 | 70 - 134 |
| p-Isopropyltoluene | 20.0 | 20.65 | | ug/L | | 103 | 66 - 130 |
| sec-Butylbenzene | 20.0 | 20.85 | | ug/L | | 104 | 70 - 135 |
| 1,2,3-Trichlorobenzene | 20.0 | 16.76 | | ug/L | | 84 | 46 - 150 |
| Styrene | 20.0 | 20.24 | | ug/L | | 101 | 70 - 130 |
| 1,2,4-Trichlorobenzene | 20.0 | 16.49 | | ug/L | | 82 | 58 - 147 |
| tert-Butylbenzene | 20.0 | 20.50 | | ug/L | | 103 | 70 - 130 |
| 1,1,1-Trichloroethane | 20.0 | 18.80 | | ug/L | | 94 | 70 - 135 |
| Tetrachloroethene | 20.0 | 18.22 | | ug/L | | 91 | 70 - 130 |
| 1,1,2-Trichloroethane | 20.0 | 19.99 | | ug/L | | 100 | 70 - 130 |
| Toluene | 20.0 | 19.71 | | ug/L | | 99 | 70 - 130 |
| trans-1,2-Dichloroethene | 20.0 | 21.49 | | ug/L | | 107 | 70 - 130 |
| 1,2,3-Trichloropropane | 20.0 | 20.33 | | ug/L | | 102 | 70 - 131 |
| trans-1,3-Dichloropropene | 20.0 | 18.23 | | ug/L | | 91 | 63 - 142 |
| 1,2,4-Trimethylbenzene | 20.0 | 20.83 | | ug/L | | 104 | 70 - 130 |
| Trichloroethene | 20.0 | 19.17 | | ug/L | | 96 | 70 - 130 |
| 1,3,5-Trimethylbenzene | 20.0 | 24.36 | | ug/L | | 122 | 70 - 130 |
| Trichlorofluoromethane | 20.0 | 18.66 | | ug/L | | 93 | 59 - 150 |
| Vinyl chloride | 20.0 | 19.45 | | ug/L | | 97 | 57 - 137 |
| Xylenes, Total | 40.0 | 39.00 | | ug/L | | 98 | 70 - 132 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 490-389189/3**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 105 | | 70 - 130 |
| 1,2-Dichloroethane-d4 (Surr) | 104 | | 70 - 130 |
| Dibromofluoromethane (Surr) | 101 | | 70 - 130 |
| Toluene-d8 (Surr) | 100 | | 70 - 130 |

**Lab Sample ID: LCSD 490-389189/4**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | | | 20.0 | 18.44 | | ug/L | | 92 | 45 - 138 | 1 | 19 |
| 1,2-Dibromoethane (EDB) | | | 20.0 | 19.49 | | ug/L | | 97 | 70 - 130 | 3 | 13 |
| 2-Butanone (MEK) | | | 100 | 101.8 | | ug/L | | 102 | 55 - 143 | 8 | 19 |
| 1,2-Dichlorobenzene | | | 20.0 | 20.30 | | ug/L | | 102 | 70 - 130 | 3 | 12 |
| 2-Chlorotoluene | | | 20.0 | 25.25 | | ug/L | | 126 | 70 - 130 | 5 | 15 |
| 1,3-Dichlorobenzene | | | 20.0 | 21.12 | | ug/L | | 106 | 70 - 130 | 5 | 13 |
| 1,4-Dichlorobenzene | | | 20.0 | 21.13 | | ug/L | | 106 | 70 - 130 | 5 | 12 |
| 4-Chlorotoluene | | | 20.0 | 22.64 | | ug/L | | 113 | 70 - 130 | 3 | 15 |
| 1,1-Dichloroethane | | | 20.0 | 22.61 | | ug/L | | 113 | 70 - 130 | 14 | 17 |
| 1,2-Dichloroethane | | | 20.0 | 19.60 | | ug/L | | 98 | 70 - 130 | 3 | 13 |
| Acetone | | | 100 | 98.56 | | ug/L | | 99 | 39 - 150 | 3 | 23 |
| Benzene | | | 20.0 | 22.04 | | ug/L | | 110 | 70 - 130 | 7 | 12 |
| 1,1-Dichloroethene | | | 20.0 | 20.40 | | ug/L | | 102 | 70 - 132 | 4 | 20 |
| Bromobenzene | | | 20.0 | 20.59 | | ug/L | | 103 | 70 - 130 | 4 | 16 |
| 1,2-Dichloropropane | | | 20.0 | 21.65 | | ug/L | | 108 | 70 - 130 | 3 | 15 |
| Bromochloromethane | | | 20.0 | 19.56 | | ug/L | | 98 | 70 - 130 | 5 | 16 |
| 1,3-Dichloropropane | | | 20.0 | 19.68 | | ug/L | | 98 | 70 - 130 | 0 | 12 |
| Bromodichloromethane | | | 20.0 | 19.26 | | ug/L | | 96 | 70 - 130 | 0 | 14 |
| 2,2-Dichloropropane | | | 20.0 | 18.77 | | ug/L | | 94 | 60 - 143 | 1 | 20 |
| Bromoform | | | 20.0 | 20.12 | | ug/L | | 101 | 70 - 137 | 2 | 14 |
| 1,1-Dichloropropene | | | 20.0 | 19.95 | | ug/L | | 100 | 70 - 130 | 2 | 16 |
| Bromomethane | | | 20.0 | 19.08 | | ug/L | | 95 | 53 - 150 | 2 | 19 |
| Carbon disulfide | | | 20.0 | 23.26 | | ug/L | | 116 | 64 - 135 | 2 | 16 |
| Diisopropyl ether | | | 20.0 | 19.60 | | ug/L | | 98 | 66 - 142 | 1 | 14 |
| Carbon tetrachloride | | | 20.0 | 19.75 | | ug/L | | 99 | 70 - 147 | 3 | 16 |
| Chlorobenzene | | | 20.0 | 21.28 | | ug/L | | 106 | 70 - 130 | 2 | 12 |
| 2-Hexanone | | | 100 | 93.48 | | ug/L | | 93 | 54 - 142 | 6 | 17 |
| Chlorodibromomethane | | | 20.0 | 21.04 | | ug/L | | 105 | 70 - 133 | 2 | 13 |
| Chloroethane | | | 20.0 | 20.34 | | ug/L | | 102 | 60 - 138 | 2 | 15 |
| Chloroform | | | 20.0 | 20.80 | | ug/L | | 104 | 70 - 130 | 1 | 14 |
| 4-Methyl-2-pentanone (MIBK) | | | 100 | 93.50 | | ug/L | | 93 | 60 - 137 | 1 | 21 |
| Chloromethane | | | 20.0 | 21.51 | | ug/L | | 108 | 33 - 150 | 4 | 20 |
| cis-1,2-Dichloroethene | | | 20.0 | 21.89 | | ug/L | | 109 | 70 - 130 | 0 | 15 |
| cis-1,3-Dichloropropene | | | 20.0 | 20.12 | | ug/L | | 101 | 70 - 133 | 2 | 15 |
| Dibromomethane | | | 20.0 | 19.63 | | ug/L | | 98 | 70 - 130 | 0 | 14 |
| Dichlorodifluoromethane | | | 20.0 | 16.39 | | ug/L | | 82 | 48 - 150 | 6 | 16 |
| Ethylbenzene | | | 20.0 | 19.88 | | ug/L | | 99 | 70 - 130 | 4 | 12 |
| Hexachlorobutadiene | | | 20.0 | 19.62 | | ug/L | | 98 | 70 - 138 | 5 | 16 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 490-389189/4**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | 20.0 | 19.45 | | ug/L | | 97 | 70 - 131 | 5 | 13 |
| 1,1,1,2-Tetrachloroethane | 20.0 | 21.37 | | ug/L | | 107 | 70 - 130 | 1 | 13 |
| Methyl tert-butyl ether | 20.0 | 17.42 | | ug/L | | 87 | 70 - 130 | 3 | 16 |
| 1,1,2,2-Tetrachloroethane | 20.0 | 22.44 | | ug/L | | 112 | 69 - 131 | 2 | 15 |
| Methylene Chloride | 20.0 | 21.19 | | ug/L | | 106 | 70 - 130 | 0 | 15 |
| Naphthalene | 20.0 | 16.19 | | ug/L | | 81 | 54 - 150 | 1 | 15 |
| n-Butylbenzene | 20.0 | 23.49 | | ug/L | | 117 | 68 - 137 | 7 | 14 |
| N-Propylbenzene | 20.0 | 22.78 | | ug/L | | 114 | 70 - 134 | 7 | 14 |
| p-Isopropyltoluene | 20.0 | 21.95 | | ug/L | | 110 | 66 - 130 | 6 | 13 |
| sec-Butylbenzene | 20.0 | 22.17 | | ug/L | | 111 | 70 - 135 | 6 | 14 |
| 1,2,3-Trichlorobenzene | 20.0 | 17.45 | | ug/L | | 87 | 46 - 150 | 4 | 16 |
| Styrene | 20.0 | 20.47 | | ug/L | | 102 | 70 - 130 | 1 | 12 |
| 1,2,4-Trichlorobenzene | 20.0 | 17.78 | | ug/L | | 89 | 58 - 147 | 8 | 15 |
| tert-Butylbenzene | 20.0 | 21.99 | | ug/L | | 110 | 70 - 130 | 7 | 14 |
| 1,1,1-Trichloroethane | 20.0 | 19.04 | | ug/L | | 95 | 70 - 135 | 1 | 15 |
| Tetrachloroethene | 20.0 | 19.35 | | ug/L | | 97 | 70 - 130 | 6 | 17 |
| 1,1,2-Trichloroethane | 20.0 | 20.42 | | ug/L | | 102 | 70 - 130 | 2 | 13 |
| Toluene | 20.0 | 20.41 | | ug/L | | 102 | 70 - 130 | 3 | 13 |
| trans-1,2-Dichloroethene | 20.0 | 21.79 | | ug/L | | 109 | 70 - 130 | 1 | 15 |
| 1,2,3-Trichloropropane | 20.0 | 20.37 | | ug/L | | 102 | 70 - 131 | 0 | 14 |
| trans-1,3-Dichloropropene | 20.0 | 18.38 | | ug/L | | 92 | 63 - 142 | 1 | 13 |
| 1,2,4-Trimethylbenzene | 20.0 | 22.02 | | ug/L | | 110 | 70 - 130 | 6 | 13 |
| Trichloroethene | 20.0 | 19.80 | | ug/L | | 99 | 70 - 130 | 3 | 14 |
| 1,3,5-Trimethylbenzene | 20.0 | 25.95 | | ug/L | | 130 | 70 - 130 | 6 | 14 |
| Trichlorofluoromethane | 20.0 | 18.86 | | ug/L | | 94 | 59 - 150 | 1 | 22 |
| Vinyl chloride | 20.0 | 20.04 | | ug/L | | 100 | 57 - 137 | 3 | 15 |
| Xylenes, Total | 40.0 | 40.25 | | ug/L | | 101 | 70 - 132 | 3 | 11 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 490-116307-1 MS**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: MW-2**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 250 | 247.2 | | ug/L | | 99 | 38 - 138 |
| 1,2-Dibromoethane (EDB) | ND | | 250 | 241.9 | | ug/L | | 97 | 65 - 137 |
| 2-Butanone (MEK) | ND | | 1250 | 1289 | | ug/L | | 103 | 50 - 143 |
| 1,2-Dichlorobenzene | ND | | 250 | 252.6 | | ug/L | | 101 | 70 - 130 |
| 2-Chlorotoluene | ND | | 250 | 307.1 | | ug/L | | 123 | 67 - 138 |
| 1,3-Dichlorobenzene | ND | | 250 | 263.7 | | ug/L | | 105 | 68 - 131 |
| 1,4-Dichlorobenzene | ND | | 250 | 259.7 | | ug/L | | 104 | 70 - 130 |
| 4-Chlorotoluene | ND | | 250 | 278.1 | | ug/L | | 111 | 69 - 138 |
| 1,1-Dichloroethane | ND | | 250 | 293.5 | | ug/L | | 117 | 61 - 139 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116307-1 MS**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: MW-2**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | ND | | 250 | 268.3 | | ug/L | | 107 | 64 - 136 |
| Acetone | ND | | 1250 | 1115 | | ug/L | | 89 | 39 - 150 |
| Benzene | 333 | | 250 | 561.9 | | ug/L | | 92 | 55 - 147 |
| 1,1-Dichloroethene | ND | | 250 | 288.2 | | ug/L | | 115 | 54 - 150 |
| Bromobenzene | ND | | 250 | 255.5 | | ug/L | | 102 | 60 - 133 |
| 1,2-Dichloropropane | ND | | 250 | 278.9 | | ug/L | | 112 | 67 - 130 |
| Bromochloromethane | ND | | 250 | 256.6 | | ug/L | | 103 | 59 - 132 |
| 1,3-Dichloropropane | ND | | 250 | 245.3 | | ug/L | | 98 | 70 - 130 |
| Bromodichloromethane | ND | | 250 | 260.0 | | ug/L | | 104 | 70 - 140 |
| 2,2-Dichloropropane | ND | | 250 | 255.4 | | ug/L | | 102 | 50 - 146 |
| Bromoform | ND | | 250 | 236.4 | | ug/L | | 95 | 53 - 150 |
| 1,1-Dichloropropene | ND | | 250 | 270.5 | | ug/L | | 108 | 54 - 150 |
| Bromomethane | ND | | 250 | 277.6 | | ug/L | | 111 | 30 - 150 |
| Carbon disulfide | ND | | 250 | 322.5 | | ug/L | | 129 | 35 - 150 |
| Diisopropyl ether | ND | | 250 | 248.5 | | ug/L | | 99 | 56 - 142 |
| Carbon tetrachloride | ND | | 250 | 282.0 | | ug/L | | 113 | 56 - 150 |
| Chlorobenzene | ND | | 250 | 260.6 | | ug/L | | 104 | 70 - 130 |
| 2-Hexanone | ND | | 1250 | 1098 | | ug/L | | 88 | 44 - 150 |
| Chlorodibromomethane | ND | | 250 | 278.9 | | ug/L | | 112 | 66 - 140 |
| Chloroethane | ND | | 250 | 285.0 | | ug/L | | 114 | 58 - 141 |
| Chloroform | ND | | 250 | 272.6 | | ug/L | | 109 | 66 - 138 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1250 | 1147 | | ug/L | | 92 | 50 - 140 |
| Chloromethane | ND | | 250 | 302.9 | | ug/L | | 121 | 10 - 150 |
| cis-1,2-Dichloroethene | ND | | 250 | 280.5 | | ug/L | | 112 | 68 - 131 |
| cis-1,3-Dichloropropene | ND | | 250 | 254.7 | | ug/L | | 102 | 70 - 133 |
| Dibromomethane | ND | | 250 | 252.8 | | ug/L | | 101 | 70 - 130 |
| Dichlorodifluoromethane | ND | | 250 | 294.9 | | ug/L | | 118 | 10 - 150 |
| Ethylbenzene | 18.8 | | 250 | 261.4 | | ug/L | | 97 | 65 - 139 |
| Hexachlorobutadiene | ND | | 250 | 255.2 | | ug/L | | 102 | 61 - 141 |
| Isopropylbenzene | ND | | 250 | 233.1 | | ug/L | | 92 | 70 - 137 |
| 1,1,1,2-Tetrachloroethane | ND | | 250 | 275.6 | | ug/L | | 110 | 70 - 131 |
| Methyl tert-butyl ether | ND | | 250 | 224.2 | | ug/L | | 90 | 55 - 141 |
| 1,1,2,2-Tetrachloroethane | ND | | 250 | 276.2 | | ug/L | | 110 | 56 - 145 |
| Methylene Chloride | ND | | 250 | 276.6 | | ug/L | | 111 | 64 - 130 |
| Naphthalene | 258 | | 250 | 487.4 | | ug/L | | 92 | 32 - 150 |
| n-Butylbenzene | ND | | 250 | 292.7 | | ug/L | | 117 | 61 - 141 |
| N-Propylbenzene | ND | | 250 | 278.2 | | ug/L | | 111 | 53 - 150 |
| p-Isopropyltoluene | ND | | 250 | 273.9 | | ug/L | | 110 | 66 - 137 |
| sec-Butylbenzene | ND | | 250 | 276.6 | | ug/L | | 111 | 55 - 136 |
| 1,2,3-Trichlorobenzene | ND | | 250 | 214.3 | | ug/L | | 86 | 36 - 150 |
| Styrene | ND | | 250 | 241.2 | | ug/L | | 96 | 70 - 130 |
| 1,2,4-Trichlorobenzene | ND | | 250 | 234.2 | | ug/L | | 94 | 47 - 147 |
| tert-Butylbenzene | ND | | 250 | 278.6 | | ug/L | | 111 | 70 - 138 |
| 1,1,1-Trichloroethane | ND | | 250 | 255.6 | | ug/L | | 102 | 68 - 144 |
| Tetrachloroethene | ND | | 250 | 245.9 | | ug/L | | 98 | 57 - 138 |
| 1,1,2-Trichloroethane | ND | | 250 | 251.3 | | ug/L | | 101 | 70 - 130 |
| Toluene | ND | | 250 | 248.9 | | ug/L | | 100 | 64 - 136 |
| trans-1,2-Dichloroethene | ND | | 250 | 291.1 | | ug/L | | 116 | 59 - 143 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116307-1 MS**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: MW-2**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | ND | | 250 | 261.7 | | ug/L | | 105 | 65 - 131 |
| trans-1,3-Dichloropropene | ND | | 250 | 235.3 | | ug/L | | 94 | 63 - 142 |
| 1,2,4-Trimethylbenzene | ND | | 250 | 269.5 | | ug/L | | 108 | 64 - 136 |
| Trichloroethene | ND | | 250 | 267.7 | | ug/L | | 107 | 63 - 135 |
| 1,3,5-Trimethylbenzene | ND | | 250 | 328.3 | | ug/L | | 130 | 69 - 139 |
| Trichlorofluoromethane | ND | | 250 | 283.4 | | ug/L | | 113 | 44 - 150 |
| Vinyl chloride | ND | | 250 | 296.3 | | ug/L | | 119 | 57 - 150 |
| Xylenes, Total | ND | | 500 | 481.9 | | ug/L | | 94 | 69 - 132 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *100* | | *70 - 130* |

**Lab Sample ID: 490-116307-1 MSD**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: MW-2**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-Chloropropane | ND | | 250 | 247.8 | | ug/L | | 99 | 38 - 138 | 0 | 26 |
| 1,2-Dibromoethane (EDB) | ND | | 250 | 238.9 | | ug/L | | 96 | 65 - 137 | 1 | 21 |
| 2-Butanone (MEK) | ND | | 1250 | 1277 | | ug/L | | 102 | 50 - 143 | 1 | 28 |
| 1,2-Dichlorobenzene | ND | | 250 | 248.8 | | ug/L | | 100 | 70 - 130 | 2 | 15 |
| 2-Chlorotoluene | ND | | 250 | 304.0 | | ug/L | | 122 | 67 - 138 | 1 | 17 |
| 1,3-Dichlorobenzene | ND | | 250 | 259.6 | | ug/L | | 104 | 68 - 131 | 2 | 14 |
| 1,4-Dichlorobenzene | ND | | 250 | 254.9 | | ug/L | | 102 | 70 - 130 | 2 | 14 |
| 4-Chlorotoluene | ND | | 250 | 275.1 | | ug/L | | 110 | 69 - 138 | 1 | 15 |
| 1,1-Dichloroethane | ND | | 250 | 284.8 | | ug/L | | 114 | 61 - 139 | 3 | 23 |
| 1,2-Dichloroethane | ND | | 250 | 253.2 | | ug/L | | 101 | 64 - 136 | 6 | 22 |
| Acetone | ND | | 1250 | 1102 | | ug/L | | 88 | 39 - 150 | 1 | 28 |
| Benzene | 333 | | 250 | 551.4 | | ug/L | | 87 | 55 - 147 | 2 | 22 |
| 1,1-Dichloroethene | ND | | 250 | 274.1 | | ug/L | | 110 | 54 - 150 | 5 | 24 |
| Bromobenzene | ND | | 250 | 254.2 | | ug/L | | 102 | 60 - 133 | 1 | 18 |
| 1,2-Dichloropropane | ND | | 250 | 254.5 | | ug/L | | 102 | 67 - 130 | 9 | 19 |
| Bromochloromethane | ND | | 250 | 244.7 | | ug/L | | 98 | 59 - 132 | 5 | 21 |
| 1,3-Dichloropropane | ND | | 250 | 243.2 | | ug/L | | 97 | 70 - 130 | 1 | 17 |
| Bromodichloromethane | ND | | 250 | 237.1 | | ug/L | | 95 | 70 - 140 | 9 | 196 |
| 2,2-Dichloropropane | ND | | 250 | 239.0 | | ug/L | | 96 | 50 - 146 | 7 | 20 |
| Bromoform | ND | | 250 | 244.5 | | ug/L | | 98 | 53 - 150 | 3 | 20 |
| 1,1-Dichloropropene | ND | | 250 | 260.4 | | ug/L | | 104 | 54 - 150 | 4 | 24 |
| Bromomethane | ND | | 250 | 272.6 | | ug/L | | 109 | 30 - 150 | 2 | 44 |
| Carbon disulfide | ND | | 250 | 307.4 | | ug/L | | 123 | 35 - 150 | 5 | 34 |
| Diisopropyl ether | ND | | 250 | 241.1 | | ug/L | | 96 | 56 - 142 | 3 | 22 |
| Carbon tetrachloride | ND | | 250 | 263.6 | | ug/L | | 105 | 56 - 150 | 7 | 18 |
| Chlorobenzene | ND | | 250 | 253.0 | | ug/L | | 101 | 70 - 130 | 3 | 15 |
| 2-Hexanone | ND | | 1250 | 1109 | | ug/L | | 89 | 44 - 150 | 1 | 21 |
| Chlorodibromomethane | ND | | 250 | 269.7 | | ug/L | | 108 | 66 - 140 | 3 | 19 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 490-116307-1 MSD**
**Matrix: Water**
**Analysis Batch: 389189**

**Client Sample ID: MW-2**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | | 250 | 275.0 | | ug/L | | 110 | 58 - 141 | 4 | 31 |
| Chloroform | ND | | 250 | 260.4 | | ug/L | | 104 | 66 - 138 | 5 | 21 |
| 4-Methyl-2-pentanone (MIBK) | ND | | 1250 | 1145 | | ug/L | | 92 | 50 - 140 | 0 | 24 |
| Chloromethane | ND | | 250 | 287.8 | | ug/L | | 115 | 10 - 150 | 5 | 43 |
| cis-1,2-Dichloroethene | ND | | 250 | 270.3 | | ug/L | | 108 | 68 - 131 | 4 | 21 |
| cis-1,3-Dichloropropene | ND | | 250 | 253.4 | | ug/L | | 101 | 70 - 133 | 0 | 19 |
| Dibromomethane | ND | | 250 | 227.3 | | ug/L | | 91 | 70 - 130 | 11 | 19 |
| Dichlorodifluoromethane | ND | | 250 | 255.8 | | ug/L | | 102 | 10 - 150 | 14 | 50 |
| Ethylbenzene | 18.8 | | 250 | 257.4 | | ug/L | | 95 | 65 - 139 | 2 | 18 |
| Hexachlorobutadiene | ND | | 250 | 256.0 | | ug/L | | 102 | 61 - 141 | 0 | 26 |
| Isopropylbenzene | ND | | 250 | 239.7 | | ug/L | | 95 | 70 - 137 | 3 | 17 |
| 1,1,1,2-Tetrachloroethane | ND | | 250 | 267.0 | | ug/L | | 107 | 70 - 131 | 3 | 16 |
| Methyl tert-butyl ether | ND | | 250 | 220.3 | | ug/L | | 88 | 55 - 141 | 2 | 24 |
| 1,1,2,2-Tetrachloroethane | ND | | 250 | 269.0 | | ug/L | | 108 | 56 - 145 | 3 | 19 |
| Methylene Chloride | ND | | 250 | 267.3 | | ug/L | | 107 | 64 - 130 | 3 | 22 |
| Naphthalene | 258 | | 250 | 502.3 | | ug/L | | 98 | 32 - 150 | 3 | 40 |
| n-Butylbenzene | ND | | 250 | 292.8 | | ug/L | | 117 | 61 - 141 | 0 | 17 |
| N-Propylbenzene | ND | | 250 | 276.2 | | ug/L | | 110 | 53 - 150 | 1 | 18 |
| p-Isopropyltoluene | ND | | 250 | 274.3 | | ug/L | | 110 | 66 - 137 | 0 | 16 |
| sec-Butylbenzene | ND | | 250 | 276.8 | | ug/L | | 111 | 55 - 136 | 0 | 50 |
| 1,2,3-Trichlorobenzene | ND | | 250 | 229.4 | | ug/L | | 92 | 36 - 150 | 7 | 43 |
| Styrene | ND | | 250 | 249.4 | | ug/L | | 100 | 70 - 130 | 3 | 16 |
| 1,2,4-Trichlorobenzene | ND | | 250 | 243.6 | | ug/L | | 97 | 47 - 147 | 4 | 24 |
| tert-Butylbenzene | ND | | 250 | 275.7 | | ug/L | | 110 | 70 - 138 | 1 | 17 |
| 1,1,1-Trichloroethane | ND | | 250 | 246.0 | | ug/L | | 98 | 68 - 144 | 4 | 17 |
| Tetrachloroethene | ND | | 250 | 234.7 | | ug/L | | 94 | 57 - 138 | 5 | 17 |
| 1,1,2-Trichloroethane | ND | | 250 | 245.5 | | ug/L | | 98 | 70 - 130 | 2 | 18 |
| Toluene | ND | | 250 | 244.1 | | ug/L | | 98 | 64 - 136 | 2 | 18 |
| trans-1,2-Dichloroethene | ND | | 250 | 281.4 | | ug/L | | 113 | 59 - 143 | 3 | 25 |
| 1,2,3-Trichloropropane | ND | | 250 | 255.7 | | ug/L | | 102 | 65 - 131 | 2 | 19 |
| trans-1,3-Dichloropropene | ND | | 250 | 237.9 | | ug/L | | 95 | 63 - 142 | 1 | 18 |
| 1,2,4-Trimethylbenzene | ND | | 250 | 266.4 | | ug/L | | 107 | 64 - 136 | 1 | 18 |
| Trichloroethene | ND | | 250 | 244.7 | | ug/L | | 98 | 63 - 135 | 9 | 17 |
| 1,3,5-Trimethylbenzene | ND | | 250 | 324.5 | | ug/L | | 128 | 69 - 139 | 1 | 17 |
| Trichlorofluoromethane | ND | | 250 | 267.5 | | ug/L | | 107 | 44 - 150 | 6 | 32 |
| Vinyl chloride | ND | | 250 | 282.2 | | ug/L | | 113 | 57 - 150 | 5 | 37 |
| Xylenes, Total | ND | | 500 | 503.8 | | ug/L | | 99 | 69 - 132 | 4 | 17 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *70 - 130* |
| *Dibromofluoromethane (Surr)* | *97* | | *70 - 130* |
| *Toluene-d8 (Surr)* | *101* | | *70 - 130* |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 490-389897/3**
**Matrix: Water**
**Analysis Batch: 389897**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | ND | | 1.00 | | mg/L | | | 11/26/16 15:13 | 1 |

**Lab Sample ID: LCS 490-389897/4**
**Matrix: Water**
**Analysis Batch: 389897**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.421 | | mg/L | | 94 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-389897/5**
**Matrix: Water**
**Analysis Batch: 389897**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | | | 10.0 | 9.453 | | mg/L | | 95 | 90 - 110 | 0 | 20 |

**Lab Sample ID: MB 490-389898/3**
**Matrix: Water**
**Analysis Batch: 389898**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | ND | | 0.100 | | mg/L | | | 11/26/16 15:13 | 1 |

**Lab Sample ID: LCS 490-389898/4**
**Matrix: Water**
**Analysis Batch: 389898**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9371 | | mg/L | | 94 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-389898/5**
**Matrix: Water**
**Analysis Batch: 389898**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | | | 1.00 | 0.9522 | | mg/L | | 95 | 90 - 110 | 2 | 20 |

## Method: 6010C - Metals (ICP)

**Lab Sample ID: MB 490-389674/1-A**
**Matrix: Water**
**Analysis Batch: 390672**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 389674**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | ND | | 0.0150 | | mg/L | | 11/25/16 14:31 | 11/29/16 19:34 | 1 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: LCS 490-389674/2-A**
**Matrix: Water**
**Analysis Batch: 390672**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 389674**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.5359 | | mg/L | | 107 | 80 - 120 |

**Lab Sample ID: LCSD 490-389674/3-A**
**Matrix: Water**
**Analysis Batch: 390672**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 389674**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.500 | 0.5450 | | mg/L | | 109 | 80 - 120 | 2 | 20 |

**Lab Sample ID: 490-116307-2 MS**
**Matrix: Water**
**Analysis Batch: 390672**

**Client Sample ID: MW-15**
**Prep Type: Total/NA**
**Prep Batch: 389674**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.0974 | | 0.500 | 0.5965 | | mg/L | | 100 | 75 - 125 |

**Lab Sample ID: 490-116307-2 MSD**
**Matrix: Water**
**Analysis Batch: 390672**

**Client Sample ID: MW-15**
**Prep Type: Total/NA**
**Prep Batch: 389674**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | 0.0974 | | 0.500 | 0.5994 | | mg/L | | 100 | 75 - 125 | 0 | 20 |

## Method: SM 2320B - Alkalinity

**Lab Sample ID: LCS 490-390230/7**
**Matrix: Water**
**Analysis Batch: 390230**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 99.16 | | mg/L | | 99 | 90 - 110 |

**Lab Sample ID: LCSD 490-390230/21**
**Matrix: Water**
**Analysis Batch: 390230**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | 100 | 102.8 | | mg/L | | 103 | 90 - 110 | 4 | 20 |

**Lab Sample ID: 490-116613-C-8 DU**
**Matrix: Water**
**Analysis Batch: 390230**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Alkalinity | 1080 | | 1066 | | mg/L | | 1 | 20 |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: SM 2320B - Alkalinity (Continued)

**Lab Sample ID: LCS 490-390897/28**
**Matrix: Water**
**Analysis Batch: 390897**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 102.0 | | mg/L | | 102 | 90 - 110 | | |

**Lab Sample ID: LCSD 490-390897/35**
**Matrix: Water**
**Analysis Batch: 390897**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | | | 100 | 106.9 | | mg/L | | 107 | 90 - 110 | 5 | 20 |

**Lab Sample ID: 490-116307-2 DU**
**Matrix: Water**
**Analysis Batch: 390897**

**Client Sample ID: MW-15**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkalinity | 27.1 | | | 25.16 | | mg/L | | | | 7 | 20 |

## Method: SM 3500 Fe B - Iron, Ferrous

**Lab Sample ID: MB 490-389051/1**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 0.100 | | mg/L | | | 11/22/16 18:59 | 1 |

**Lab Sample ID: LCS 490-389051/2**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 0.9490 | | mg/L | | 94 | 80 - 120 | | |

**Lab Sample ID: LCSD 490-389051/3**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | | | 1.01 | 1.025 | | mg/L | | 101 | 80 - 120 | 8 | 20 |

**Lab Sample ID: 490-116300-D-2 MS**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9420 | | mg/L | | 93 | 75 - 125 | | |

# QC Sample Results

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Method: SM 3500 Fe B - Iron, Ferrous (Continued)

**Lab Sample ID: 490-116300-D-2 MSD**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | ND | | 1.01 | 0.9880 | | mg/L | | 98 | 75 - 125 | 5 | 20 |

**Lab Sample ID: 490-116219-B-6 DU**
**Matrix: Water**
**Analysis Batch: 389051**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ferrous Iron | 6.47 | | | 6.198 | | mg/L | | | | 4 | 20 |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## GC/MS VOA

### Analysis Batch: 388780

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-5 | FIELD BLANK | Total/NA | Water | 8260B | |
| 490-116307-6 | TRIP BLANK | Total/NA | Water | 8260B | |
| MB 490-388780/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388780/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388780/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116032-C-31 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 490-116032-C-31 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

### Analysis Batch: 388956

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-2 | MW-15 | Total/NA | Water | 8260B | |
| 490-116307-3 | MW-16 | Total/NA | Water | 8260B | |
| 490-116307-4 | MW-25R | Total/NA | Water | 8260B | |
| MB 490-388956/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-388956/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-388956/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-115993-A-4 MS | Matrix Spike | Total/NA | Water | 8260B | |
| 490-115993-A-4 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260B | |

### Analysis Batch: 389189

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | 8260B | |
| 490-116307-1 | MW-2 | Total/NA | Water | 8260B | |
| MB 490-389189/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 490-389189/3 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 490-389189/4 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 490-116307-1 MS | MW-2 | Total/NA | Water | 8260B | |
| 490-116307-1 MSD | MW-2 | Total/NA | Water | 8260B | |

## HPLC/IC

### Analysis Batch: 389897

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | 300.0 | |
| 490-116307-2 | MW-15 | Total/NA | Water | 300.0 | |
| 490-116307-3 | MW-16 | Total/NA | Water | 300.0 | |
| 490-116307-4 | MW-25R | Total/NA | Water | 300.0 | |
| MB 490-389897/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-389897/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-389897/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |

### Analysis Batch: 389898

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | 300.0 | |
| 490-116307-2 | MW-15 | Total/NA | Water | 300.0 | |
| 490-116307-3 | MW-16 | Total/NA | Water | 300.0 | |
| 490-116307-4 | MW-25R | Total/NA | Water | 300.0 | |
| MB 490-389898/3 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 490-389898/4 | Lab Control Sample | Total/NA | Water | 300.0 | |
| LCSD 490-389898/5 | Lab Control Sample Dup | Total/NA | Water | 300.0 | |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Metals

### Prep Batch: 389674

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | 3010A | |
| 490-116307-2 | MW-15 | Total/NA | Water | 3010A | |
| 490-116307-3 | MW-16 | Total/NA | Water | 3010A | |
| 490-116307-4 | MW-25R | Total/NA | Water | 3010A | |
| MB 490-389674/1-A | Method Blank | Total/NA | Water | 3010A | |
| LCS 490-389674/2-A | Lab Control Sample | Total/NA | Water | 3010A | |
| LCSD 490-389674/3-A | Lab Control Sample Dup | Total/NA | Water | 3010A | |
| 490-116307-2 MS | MW-15 | Total/NA | Water | 3010A | |
| 490-116307-2 MSD | MW-15 | Total/NA | Water | 3010A | |

### Analysis Batch: 390672

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | 6010C | 389674 |
| 490-116307-2 | MW-15 | Total/NA | Water | 6010C | 389674 |
| 490-116307-3 | MW-16 | Total/NA | Water | 6010C | 389674 |
| 490-116307-4 | MW-25R | Total/NA | Water | 6010C | 389674 |
| MB 490-389674/1-A | Method Blank | Total/NA | Water | 6010C | 389674 |
| LCS 490-389674/2-A | Lab Control Sample | Total/NA | Water | 6010C | 389674 |
| LCSD 490-389674/3-A | Lab Control Sample Dup | Total/NA | Water | 6010C | 389674 |
| 490-116307-2 MS | MW-15 | Total/NA | Water | 6010C | 389674 |
| 490-116307-2 MSD | MW-15 | Total/NA | Water | 6010C | 389674 |

## General Chemistry

### Analysis Batch: 389051

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | SM 3500 Fe B | |
| 490-116307-2 | MW-15 | Total/NA | Water | SM 3500 Fe B | |
| 490-116307-3 | MW-16 | Total/NA | Water | SM 3500 Fe B | |
| 490-116307-4 | MW-25R | Total/NA | Water | SM 3500 Fe B | |
| MB 490-389051/1 | Method Blank | Total/NA | Water | SM 3500 Fe B | |
| LCS 490-389051/2 | Lab Control Sample | Total/NA | Water | SM 3500 Fe B | |
| LCSD 490-389051/3 | Lab Control Sample Dup | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MS | Matrix Spike | Total/NA | Water | SM 3500 Fe B | |
| 490-116300-D-2 MSD | Matrix Spike Duplicate | Total/NA | Water | SM 3500 Fe B | |
| 490-116219-B-6 DU | Duplicate | Total/NA | Water | SM 3500 Fe B | |

### Analysis Batch: 390230

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-3 | MW-16 | Total/NA | Water | SM 2320B | |
| LCS 490-390230/7 | Lab Control Sample | Total/NA | Water | SM 2320B | |
| LCSD 490-390230/21 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116613-C-8 DU | Duplicate | Total/NA | Water | SM 2320B | |

### Analysis Batch: 390897

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 490-116307-1 | MW-2 | Total/NA | Water | SM 2320B | |
| 490-116307-2 | MW-15 | Total/NA | Water | SM 2320B | |
| 490-116307-4 | MW-25R | Total/NA | Water | SM 2320B | |
| LCS 490-390897/28 | Lab Control Sample | Total/NA | Water | SM 2320B | |

# QC Association Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## General Chemistry (Continued)

### Analysis Batch: 390897 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 490-390897/35 | Lab Control Sample Dup | Total/NA | Water | SM 2320B | |
| 490-116307-2 DU | MW-15 | Total/NA | Water | SM 2320B | |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-2
**Date Collected: 11/16/16 10:18**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 389189 | 11/23/16 13:59 | KS | TAL NSH |
| Total/NA | Analysis | 8260B | | 5 | 389189 | 11/23/16 16:10 | KS | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 389897 | 11/26/16 15:46 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 389898 | 11/26/16 15:46 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389674 | 11/25/16 14:31 | JSF | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390672 | 11/29/16 20:36 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 390897 | 11/30/16 17:33 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-15
**Date Collected: 11/16/16 11:50**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388956 | 11/23/16 05:39 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 389897 | 11/26/16 15:57 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 10 | 389898 | 11/26/16 17:26 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389674 | 11/25/16 14:31 | JSF | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390672 | 11/29/16 20:00 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 390897 | 11/30/16 17:38 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 1 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-16
**Date Collected: 11/16/16 11:30**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-3
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388956 | 11/23/16 06:04 | BBR | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 389898 | 11/26/16 16:09 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 10 | 389897 | 11/26/16 18:00 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389674 | 11/25/16 14:31 | JSF | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390672 | 11/29/16 20:41 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 390230 | 11/28/16 12:26 | BMC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 10 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: MW-25R
**Date Collected: 11/16/16 13:15**
**Date Received: 11/17/16 10:05**

## Lab Sample ID: 490-116307-4
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388956 | 11/23/16 06:29 | BBR | TAL NSH |

# Lab Chronicle

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Client Sample ID: MW-25R
**Lab Sample ID: 490-116307-4**
**Date Collected: 11/16/16 13:15**
**Matrix: Water**
**Date Received: 11/17/16 10:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 1 | 389897 | 11/26/16 16:20 | NC | TAL NSH |
| Total/NA | Analysis | 300.0 | | 1 | 389898 | 11/26/16 16:20 | NC | TAL NSH |
| Total/NA | Prep | 3010A | | | 389674 | 11/25/16 14:31 | JSF | TAL NSH |
| Total/NA | Analysis | 6010C | | 1 | 390672 | 11/29/16 20:46 | RDF | TAL NSH |
| Total/NA | Analysis | SM 2320B | | 1 | 390897 | 11/30/16 17:49 | AEC | TAL NSH |
| Total/NA | Analysis | SM 3500 Fe B | | 5 | 389051 | 11/22/16 18:59 | AEC | TAL NSH |

## Client Sample ID: FIELD BLANK
**Lab Sample ID: 490-116307-5**
**Date Collected: 11/16/16 10:30**
**Matrix: Water**
**Date Received: 11/17/16 10:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388780 | 11/22/16 14:07 | KS | TAL NSH |

## Client Sample ID: TRIP BLANK
**Lab Sample ID: 490-116307-6**
**Date Collected: 11/16/16 00:01**
**Matrix: Water**
**Date Received: 11/17/16 10:05**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 388780 | 11/22/16 13:41 | KS | TAL NSH |

**Laboratory References:**
TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Method Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL NSH |
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL NSH |
| 6010C | Metals (ICP) | SW846 | TAL NSH |
| SM 2320B | Alkalinity | SM | TAL NSH |
| SM 3500 Fe B | Iron, Ferrous | SM | TAL NSH |

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Certification Summary

Client: Duke Energy Corporation
Project/Site: Bramlett Rd. MGP J16110519

TestAmerica Job ID: 490-116307-1

## Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| A2LA | A2LA | | NA: NELAP & A2LA | 12-31-17 |
| A2LA | ISO/IEC 17025 | | 0453.07 | 12-31-17 |
| Alaska (UST) | State Program | 10 | UST-087 | 07-24-17 |
| Arizona | State Program | 9 | AZ0473 | 05-05-17 |
| Arkansas DEQ | State Program | 6 | 88-0737 | 04-25-17 |
| California | State Program | 9 | 2938 | 10-31-16 * |
| Connecticut | State Program | 1 | PH-0220 | 12-31-17 |
| Florida | NELAP | 4 | E87358 | 06-30-17 |
| Georgia | State Program | 4 | N/A | 12-31-17 |
| Illinois | NELAP | 5 | 200010 | 12-09-17 |
| Iowa | State Program | 7 | 131 | 04-01-18 |
| Kansas | NELAP | 7 | E-10229 | 10-31-17 |
| Kentucky (UST) | State Program | 4 | 19 | 06-30-17 |
| Kentucky (WW) | State Program | 4 | 90038 | 12-31-16 * |
| Louisiana | NELAP | 6 | 30613 | 06-30-17 |
| Maine | State Program | 1 | TN00032 | 11-03-17 |
| Maryland | State Program | 3 | 316 | 03-31-17 |
| Massachusetts | State Program | 1 | M-TN032 | 06-30-17 |
| Minnesota | NELAP | 5 | 047-999-345 | 12-31-16 * |
| Mississippi | State Program | 4 | N/A | 06-30-17 |
| Montana (UST) | State Program | 8 | NA | 02-24-20 |
| Nevada | State Program | 9 | TN00032 | 07-31-17 |
| New Hampshire | NELAP | 1 | 2963 | 10-09-17 |
| New Jersey | NELAP | 2 | TN965 | 06-30-17 |
| New York | NELAP | 2 | 11342 | 03-31-17 |
| North Carolina (WW/SW) | State Program | 4 | 387 | 12-31-16 * |
| North Dakota | State Program | 8 | R-146 | 06-30-17 |
| Ohio VAP | State Program | 5 | CL0033 | 07-10-17 |
| Oklahoma | State Program | 6 | 9412 | 08-31-17 |
| Oregon | NELAP | 10 | TN200001 | 04-27-17 |
| Pennsylvania | NELAP | 3 | 68-00585 | 06-30-17 |
| Rhode Island | State Program | 1 | LAO00268 | 12-30-16 * |
| South Carolina | State Program | 4 | 84009 (001) | 02-18-17 |
| South Carolina (Do Not Use - DW) | State Program | 4 | 84009 (002) | 12-16-17 |
| Tennessee | State Program | 4 | 2008 | 02-23-17 |
| Texas | NELAP | 6 | T104704077 | 08-31-17 |
| USDA | Federal | | P330-13-00306 | 01-01-17 |
| Utah | NELAP | 8 | TN00032 | 07-31-17 |
| Virginia | NELAP | 3 | 460152 | 06-14-17 |
| Washington | State Program | 10 | C789 | 07-19-17 |
| West Virginia DEP | State Program | 3 | 219 | 02-28-17 |
| Wisconsin | State Program | 5 | 998020430 | 08-31-17 |
| Wyoming (UST) | A2LA | 8 | 453.07 | 12-31-17 |

* Certification renewal pending - certification considered valid.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

# COOLER RECEIPT FORM

490-116307 Chain of Custody

Cooler Received/Opened On 11/17/2016 @ 1005

Time Samples Removed From Cooler 13:19 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 3990 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID_17960353_ pH Strip Lot HC574756 Chlorine Strip Lot 0125164

2. Temperature of rep. sample or temp blank when opened: 0.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO (NA)

4. Were custody seals on outside of cooler? (YES)..NO...NA

If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? (YES)..NO...NA

6. Were custody papers inside cooler? (YES)..NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES (NO) and Intact YES...NO...(NA)

Were these signed and dated correctly? YES...NO...(NA)

8. Packing mat'l used? (Bubblewrap) Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: (Ice) Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? (YES)..NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? (YES)..NO...NA

12. Did all container labels and tags agree with custody papers? (YES)..NO...NA

13a. Were VOA vials received? (YES)...NO...NA

b. Was there any observable headspace present in any VOA vial? YES..(NO)...NA

14. Was there a Trip Blank in this cooler? (YES)...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) KD

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES..NO..(NA)

b. Did the bottle labels indicate that the correct preservatives were used (YES)...NO...NA

16. Was residual chlorine present? YES...NO..(NA)

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) KD

17. Were custody papers properly filled out (ink, signed, etc)? (YES)..NO...NA

18. Did you sign the custody papers in the appropriate place? (YES)...NO...NA

19. Were correct containers used for the analysis requested? (YES)...NO...NA

20. Was sufficient amount of sample sent in each container? (YES)...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) KD

I certify that I attached a label with the unique LIMS number to each container (intial) KD

21. Were there Non-Conformance issues at login? YES..(NO) Was a NCM generated? YES..(NO)..#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 12/15/15

[redacted]

# Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☑

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

| Client | Project Manager | Date | Chain of Custody Number |
|---|---|---|---|
| DUKE ENERGY (SE&ME) | JOHN WHITEHEAD | 11/16/16 | ~~302118~~ |
| **Address** | **Telephone Number (Area Code)/Fax Number** | **Lab Number** | **Page** 1 of 1 |
| 301 ZIMA PARK DR | 864/574-2360 5768730 | | |
| **City / State / Zip Code** | **Site Contact** | **Lab Contact** | |
| SPARTANBURG / SC / 29301 | LARRY LOWERY | CANDACE BOWMAN | |
| **Project Name and Location (State)** | **Carrier/Waybill Number** | | |
| BRAMLETTE ROAD MGP | FEDEX 801904643990 | | |
| **Contract/Purchase Order/Quote No.** | | | |
| 567942 | | | |

| Sample I.D. No. and Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed. | Soil | Containers & Preservatives: Unpres. | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | Analysis: BTEX Full List | NO3/SO4 | ALKALINITY | MANGANESE | FERROUS IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 MW-2 | 11/16/16 | 1018 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 2 MW-15 | | 1150 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 3 MW-16 | | 1130 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 4 MW-25R | | 1315 | | X | | | 5 | | 1 | 1 | | | X | X | X | X | X |
| 5 FIELD BLANK | | 1030 | | X | | | 3 | | | | | | X | | | | |
| 6 TRIP BLANK | | | | X | | | | | | 2 | | | X | | | | |

Special Instructions/ Conditions of Receipt

Project#49001932

Loc: 490
116307

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| 1. Relinquished By | 11/16/16 | 1700 | 1. Received By TAN | 11-17-2016 | 10:05 |
| 2. Relinquished By | | | 2. Received By | | |
| 3. Relinquished By | | | 3. Received By | | |

Comments

0.6

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

# ANALYTICAL LABORATORY REQUEST FORM (ARF)

| | |
|---|---|
| *(1) Complete all yellow sections of this form. Move through by striking the "TAB" key.* | |
| *(2) Save the file & e-mail to:* | labcustomer@duke-energy.com |
| *Questions / Problems Call:* | 704-875-5245 |

**Duke Energy Completes and sends ARF to the engineering firm**

## Customer Information

| Your Name | Office Phone | Cell Phone |
|---|---|---|
| John Whitehead | 864-574-2360 | 864-580-1429 |
| **Project Name** (Use Remediation&Decommissioning Site Names) | | Your e-Mail Address |
| Bramlette Rd. MGP | | jwhitehead@smeinc.com |

| Duke Vendor Labs & Contact | Accounting Fields | |
|---|---|---|
| *Test America:* ***Candace.Bonham@testamericainc.com*** | Accounting Type | Specific Accounting |
| *Pace:* ***Kevin.Herring@pacelabs.com*** | Operating Unit | |
| *Acutest:* ***Andreac@accutest.com*** | Project ID | |
| *Prism:* ***Aovercash@prismlabs.com*** | Activity ID | |
| | Account | |
| ***Also send copy to - labcustomer@duke-energy.com*** | | |

**Engineering Firm Completes these sections and sends ARF to one of the Duke Vendor Lab Contacts listed above**

## Sampling Information

| Sampling Personnel / Contractor | Scheduled Sampling Date | Date Sample Kit Needed |
|---|---|---|
| scott dacus/ s&me | Week of 11-14-16 | 10/31/2016 |

**Shipping Address for Kit**

| Name | Phone | Mail Code |
|---|---|---|
| S&ME, Inc. | 864-574-2360 | |
| Street Address - 301 Zima Park Road | State | Zip Code |
| Spartanburg | SC | 29301 |

## Reporting

| Report Due Date | Additional Reports - .pdf file w/ Basic QC and EDD (spreadsheet) is Standard | |
|---|---|---|
| | | |
| Report To (e-Mail Address 1) | Report To (e-Mail Address 2) | Report to (e-Mail Address 3) |
| jwhitehead@smeinc.com | larmstrong@smeinc.com | TimHunsucker@duke-energy.com |

## Project Specifics

| Project Name | Program Type |
|---|---|
| Bramlette Rd. MGP | Groundwater |

| Site, Location or Station | State | Approximate Number of Days Sampling is Scheduled |
|---|---|---|
| Greenville | S.C. | 3 |

Notes, Special Requests, Required Contract Lab to use, etc.

S&ME job number 1264-08-105. If you have any questions, please call John Whitehead.

| Bottles | Matrix | Variables, Methods |
|---|---|---|
| 17 (Includes Field Blank) | GW | EPA 8260 - Full List (Please send unpreserved bottles as per SCDHEC regs.) |
| 16 Samples | GW | Nitrate, Sulfate, Ferrous Iron, Alkalinity |
| 16 Samples | GW | Manganese |
| 1 Sample | W | Trip Blank - EPA 8260 (Full List) |
| | | |
| | | **Please send lab grade water for field blank.** |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | IMPORTANT: Include QC samples (duplicates) with regular samples no need to separate |

# Login Sample Receipt Checklist

Client: Duke Energy Corporation

Job Number: 490-116307-1

**Login Number: 116307**
**List Number: 1**
**Creator: Dawson, Keith M**

**List Source: TestAmerica Nashville**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |