

NC DENR  
Division of Waste Management - Solid Waste

**Environmental Monitoring Reporting Form**

**Notice:** This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

**Instructions:**

- Prepare one form for each individually monitored unit.
- Please type or print legibly.
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.)
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i)).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

**Solid Waste Monitoring Data Submittal Information**

Name of entity submitting data (laboratory, consultant, facility owner):

HDR Engineering, Inc. of the Carolinas (Consultant)

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Ian Holdeman Phone: (704) 338-6839

E-mail: ian.holdeman@hdrinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Duke Energy Carolinas, LLC Belews Creek Steam Station FGD Residue Landfill	3195 Pine Hall Road Belews Creek, NC	8505	.0500	May 4, 2016

**Environmental Status: (Check all that apply)**

- Initial/Background Monitoring  Detection Monitoring  Assessment Monitoring  Corrective Action

**Type of data submitted: (Check all that apply)**

- Groundwater monitoring data from monitoring wells  Methane gas monitoring data  
 Groundwater monitoring data from private water supply wells  Corrective action data (specify) \_\_\_\_\_  
 Leachate monitoring data  Other(specify) \_\_\_\_\_  
 Surface water monitoring data

**Notification attached?**

- No. No groundwater or surface water standards were exceeded.  
 Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.  
 Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

**Certification**

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

William M. Miller Senior Engineer (828) 891-6296

Facility Representative Name (Print) Title (Area Code) Telephone Number

*William M. Miller*  
Signature

*7/29/2016*  
Date

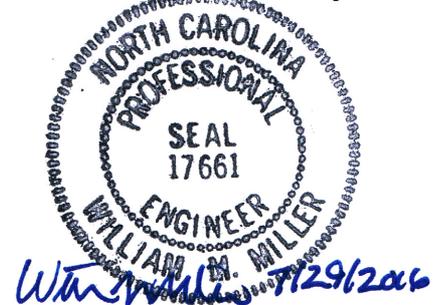
Affix NC Licensed/ Professional Geologist Seal

440 S. Church Street Suite 900, Charlotte, NC 28202

Facility Representative Address

F-0116

NC PE Firm License Number (if applicable effective May 1, 2009)



FGD Residue Landfill Permit No. 8505

# Semiannual Groundwater Monitoring Report

May 2016 Sampling Event

*Belews Creek Steam Station*

August 2, 2016



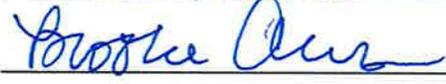


# Report Verification

**PROJECT: SEMIANNUAL GROUNDWATER MONITORING REPORT  
BELEWS CREEK STEAM STATION  
FGD RESIDUE LANDFILL  
PERMIT NO. 8505**

**TITLE: MAY 2016 SAMPLING EVENT**

This document has been reviewed for accuracy and quality commensurate with the intended application.

Prepared by:		Date:	7/29/2016
Checked by:		Date:	7/29/2016
Approved by:		Date:	7/29/2016

Project Manager: Brooke Ahrens, PE

Professional Engineer Seal:



HDR Engineering, Inc. of the Carolinas  
440 South Church St., Suite 1000  
Charlotte, NC 28202  
North Carolina Engineering Firm Number F-0116



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- B. Laboratory Report and Chain-of-Custody Forms

## Section 1 – Background

The flue gas desulfurization (FGD) residue landfill is located at the Duke Energy Carolinas, LLC (Duke Energy) Belews Creek Steam Station, in Stokes County, North Carolina. The FGD residue landfill is permitted to receive FGD residue (gypsum) from Belews Creek Steam Station operations. The landfill is permitted under the North Carolina Department of Environmental Quality (NCDEQ) Solid Waste Permit No. 8505.

The FGD residue landfill is located south of the Belews Creek plant, on land between two arms of the Belews Lake. The West Belews Creek arm of the lake is located west of the landfill site and the East Belews Creek arm of the lake is located east of the site. Craig Road is located to the west of the landfill. The FGD residue landfill and nearby surrounding area are depicted on Figure 1.

The landfill consists of four cells contained in an area of approximately 24 acres. The adjacent stormwater basin occupies an area of approximately 2.4 acres and is used to manage leachate and stormwater collected from the landfill. The landfill has an engineered liner system consisting of a leachate collection system, underlain by a high-density polyethylene (HDPE) geomembrane liner, underlain by a geo-synthetic clay liner.

The subsurface conditions in the landfill area consist of residual soils, saprolite, partially weathered rock, and bedrock, as described in the Water Quality Monitoring Plan.<sup>1</sup>

As is typical for groundwater systems located in the Piedmont region, groundwater at the landfill site occurs within the saprolite, partially weathered rock, and shallow fractured bedrock under unconfined aquifer conditions. The groundwater flow in the area of the landfill is generally from areas of higher topography, located to the east of the landfill, to the west and to the northwest of the landfill, towards Belews Lake.

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<sup>1</sup> Water Quality Monitoring Plan FGD Scrubber Residue Landfill Belews Creek Steam Station, December 07, 2007.



The monitoring system for the landfill consists of the following:

Monitoring Wells<sup>2</sup>: BC-20  
BC-21  
BC-22  
BC-23A  
BC-25  
BC-26  
BC-27  
BC-28  
BC-29  
BC-30  
BC-31  
BC-32<sup>3</sup>

Observation Well: BC-7

Surface Water: SW-1

Leachate Sample: Leachate

The monitoring system for the landfill is shown on Figure 2. A summary of monitoring well construction information is presented in Table 1. Monitoring wells BC-23A and BC-28 are considered to represent background groundwater quality, according to the Water Quality Monitoring Plan. The groundwater monitoring locations are sampled on a semi-annual basis and the results compared to groundwater quality standards found in 15A NCAC .02L .0202 (g) (2L Standards).

Observation well BC-7 is used for water level measurements only. Monitoring wells are used to monitor groundwater quality and to measure groundwater levels.

SW-1 is a groundwater seep located to the east of well BC-28. When water is present, it emanates from the ground just above the sampling location. SW-1 analytical results are compared to 2L Standards. This surface water feature drains to Belews Lake.

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<sup>2</sup> BC-25 and BC-27 were converted (June 2015) to stick-up wells in an effort to reduce TDS and obtain better samples.

<sup>3</sup> Monitoring well BC-32 was installed in August 2013, as part of a groundwater assessment being conducted at the landfill. The monitoring well is not included in the Water Quality Monitoring Plan, but the analytical results from the well are included in this landfill groundwater monitoring report.

## Section 2 – Methods

### 2.1 Sampling and Analysis Methods

Groundwater sampling and documentation of sampling activities were performed by Duke Energy personnel (Duke Energy Carolinas Field Certification #5193) in accordance with the North Carolina Solid Waste Management Guidelines. Copies of the field sampling forms are included in Appendix A. The parameters and constituents sampled were selected by Duke Energy and the NCDEQ Division of Solid Waste and were analyzed by the Duke Energy Analytical Laboratory (North Carolina Laboratory Certification #248) and provided to HDR by Duke Energy. The laboratory report and chain-of-custody forms are included in Appendix B.

The groundwater samples were analyzed using the following analytical methods:

- Barium, boron, chromium, copper, iron, manganese, nickel, silver, and zinc using Environmental Protection Agency (EPA) Solid Waste (SW) 846<sup>4</sup> - Method 6010D
- Arsenic, cadmium, lead, and selenium by EPA SW 846 - Method 6020B
- Chloride, fluoride, nitrate as nitrogen, and sulfate using EPA SW 846 - Method 9056A
- Mercury using EPA SW 846 - Method 7470A
- Total Dissolved Solids using Standard Method (SM) 2540C

### 2.2 Statement of Work

HDR completed the following tasks:

- Received field sampling information provided by Duke Energy (performed by Duke Energy personnel) for monitoring wells BC-20, BC-21, BC-22, BC-23A, BC-25, BC-26, BC-27, BC-28, BC-29, BC-30, BC-31, BC-32, surface water sampling location SW-1, and the leachate sampling location. The samples were collected on May 4, 2016 and HDR received the data on May 25, 2016.
- Reviewed the laboratory analytical results for the samples noted above. The Electronic Data Deliverable (EDD), provided by Duke Energy, was adapted to conform to the format requirements of the NCDEQ EDD template. HDR added an italicized J data qualifier (*J*) to indicate a detected concentration that equals or is greater than the laboratory's method reporting limit (MRL), but less than the Solid Waste Section Limit<sup>5</sup> (SWSL), and retained the laboratory-supplied qualifier J to indicate values that equal or are greater than the laboratory's method detection limit (MDL) but are less than the MRL. A copy of the original EDD is retained in HDR's files.

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<sup>4</sup> EPA Hazardous Waste Test Methods (SW-846); available online at <https://www.epa.gov/hw-sw846> (Accessed July 1, 2016)

<sup>5</sup> The Solid Waste Section Limit (SWSL) is defined by NCDEQ as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy. The SWSL is the concentration below which reported results must be qualified as estimated. NCDEQ Division of Waste Management Memorandum dated February 23, 2007.



- Developed a generalized groundwater surface contour map using map data and groundwater elevation data supplied by Duke Energy.
- Prepared and submitted this Semiannual Groundwater Monitoring Report to Duke Energy.

## Section 3 – Results

### 3.1 Site Groundwater Flow

Generalized groundwater surface contours and groundwater flow direction arrows for the site are shown on Figure 3. These contours were developed using groundwater elevations measured at the wells on the date of sampling. Calculated groundwater flow velocities are presented on Table 2.

Based on the groundwater elevations measured at the wells on the date of sampling, groundwater flow in the area of the landfill is generally from areas of higher topography, located to the east of the landfill, to the west and to the northwest of the landfill, towards Belews Lake.

### 3.2 Analytical Results

A summary of the field data is presented in Table 3.

The field and analytical results of groundwater and surface water sampling are summarized in Table 4. The analysis results for these locations are compared to the 2L Standards. Concentrations with values that attain or exceed the 2L Standards are noted on Table 4 by bold font. A summary of the analytical results that attain or exceed the 2L Standards and a preliminary analysis of the cause and significance of the exceedances are presented in Table 5.

The field and analytical results of leachate sampling are summarized in Table 6.

Concentrations with values that equal or are greater than the SWSLs are noted on Tables 4 and 6 by gray-shaded cells.

Selected samples were diluted as is normal laboratory practice to bring samples to the calibrated range of the analysis. Specifics regarding the samples that were diluted, including the dilution amount, are reported in the EDD and the laboratory report.

HDR previously prepared and submitted an assessment to NCDEQ for exceedances of 2L Standards at this landfill (Groundwater Assessment Belews Creek Steam Station FGD Residue Landfill, Permit No. 8505, October 5, 2012).

The report assessed the exceedances of the 2L Standards at wells BC-20, BC-21, BC-23A, BC-26, BC-27, BC-29, and BC-31 and at surface water sampling location SW-1. The assessment report concluded for the period of analytical results reviewed that:

- the source of iron exceedances reported in BC-20, BC-21, BC-23A, BC-26, BC-27, BC-29, and BC-31 appear to be related to turbidity introduced from naturally occurring sources,
- the source of manganese exceedances reported in BC-27 appear to be related to turbidity introduced from naturally occurring sources,
- the manganese results at BC-21 do not appear to be related to turbidity, and

- the iron and manganese exceedances at surface water sampling location SW-1 are from naturally occurring sources and are not related to impacts from the landfill.

The report assessed 2L Standard exceedances for iron, sulfate, and total dissolved solids (TDS) at monitoring well BC-25. HDR recommended installing an additional monitoring well at the review boundary between BC-25 and the landfill to further delineate the sulfate and TDS concentrations in this area and improve the understanding of groundwater flow and quality near BC-25. HDR further recommended that BC-20 and BC-21 be re-sampled when the new monitoring well was sampled.

In a letter dated November 28, 2012<sup>6</sup> to Mr. Ed Sullivan, P.E., of Duke Energy, the NCDEQ Solid Waste Section approved the recommendations presented in the groundwater assessment report dated October 5, 2012.

Monitoring well BC-32 was installed in August 2013, and HDR prepared and submitted a supplemental groundwater assessment to NCDEQ (Supplemental Groundwater Assessment Belews Creek Steam Station FGD Residue Landfill, Permit No. 8505. June 4, 2014).

The supplemental groundwater assessment report indicated:

- although it is not possible to eliminate leakage through the liner system as a cause for 2L Standard exceedances, leakage through the liner system is not the likely source of 2L Standard exceedances, and
- increases in precipitation runoff received by non-contact stormwater basins SB-6 and SB-7, due to the process of filling Cell 1, may have caused deposited FGD residue to be subjected to increased infiltration into the groundwater at these basins. It appears that an increase in surface runoff and infiltration of gypsum into the groundwater in this area may be the source of exceedances of sulfate, TDS, and selenium.

As part of the supplemental groundwater assessment report HDR recommended:

- monitoring well BC-32 should continue to be sampled as part of the groundwater monitoring program for the FGD Residue Landfill,
- if concentrations of sulfate and TDS decrease to below the 2L Standard in monitoring wells BC-25 and BC-32 and remain below the 2L Standard for a minimum of two sampling events, discontinue groundwater monitoring at BC-25 and incorporate monitoring well BC-32 into the groundwater monitoring program for the FGD Residue Landfill, and
- if the concentrations of sulfate and TDS remain above the 2L Standards in monitoring wells BC-25 and BC-32 for the next three sampling events, an additional assessment should be conducted to identify the sources of the exceedances.

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<sup>6</sup> North Carolina Department of Environment and Natural Resources, Division of Waste Management. November 28, 2012, Groundwater Assessment Report Response. Duke Energy – Belews Creek FGD Landfill, DOC ID 17761.



This is the fourth groundwater monitoring event since the completion of the supplemental groundwater assessment (November 2014, May 2015, November 2015, and May 2016).

The sulfate and TDS concentrations in monitoring wells BC-25 and BC-32 have been greater than the 2L Standards during last four sampling events, with the concentrations of these parameters generally increasing in both of the monitoring wells.

For the last three sampling events, sulfate concentrations in BC-20 have been above the 2L standard of 250 mg/L.

The selenium concentration in BC-21 was measured above the 2L standard in August 2013 but below the standard in all events before and after that event.

The sulfate concentration measured in monitoring well BC-21 has been greater than the 2L Standard during the last five sampling events.

Selenium in BC-25 has been measured at concentrations greater than the 2L standard of 20 µg/L during both May and November 2015 sampling events (at 20.3 µg/L and 21.9 µg/L, respectively). However, as of May 2016, the selenium concentration is below 2L at 12.4 µg/L.

Based on the results of the sampling events conducted since the June 2014 Supplemental Groundwater Assessment, Duke Energy contacted DEQ and is in the process of providing a plan for further assessment of the groundwater exceedances at the landfill.

## Figures



HDR Engineering Inc.  
of the Carolinas

440 S. Church St. Suite 1000  
Charlotte, NC 28202-2075  
704.338.6700

**SITE LOCATION MAP  
BELEWS CREEK STEAM STATION  
FGD RESIDUE LANDFILL**

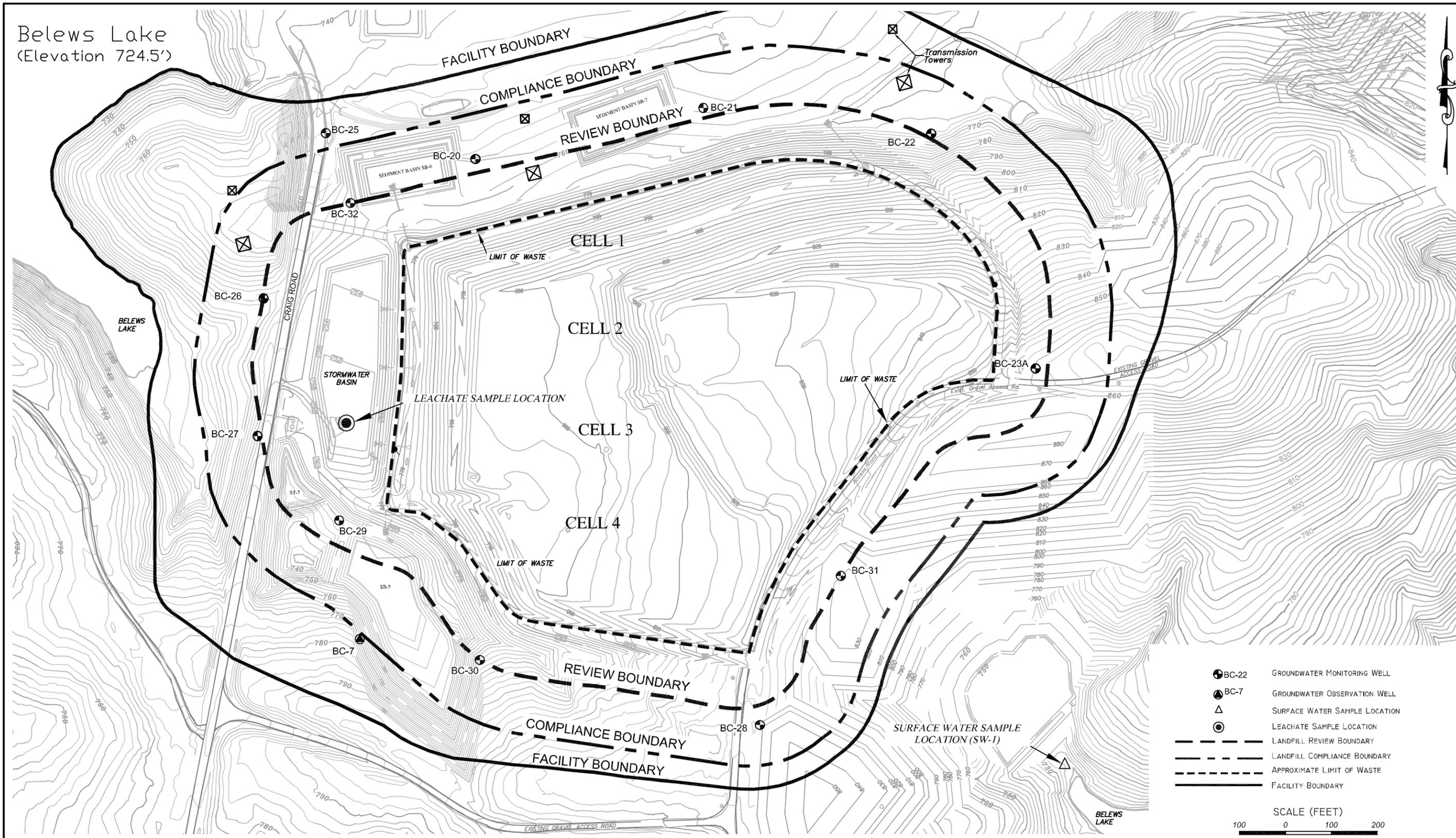
PERMIT NO. 8505

DATE  
AUGUST 2016

FIGURE

1

Belews Lake  
(Elevation 724.5')



NOTE: BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS, LLC. DATED MAY 21, 2015.



HDR Engineering Inc.  
of the Carolinas

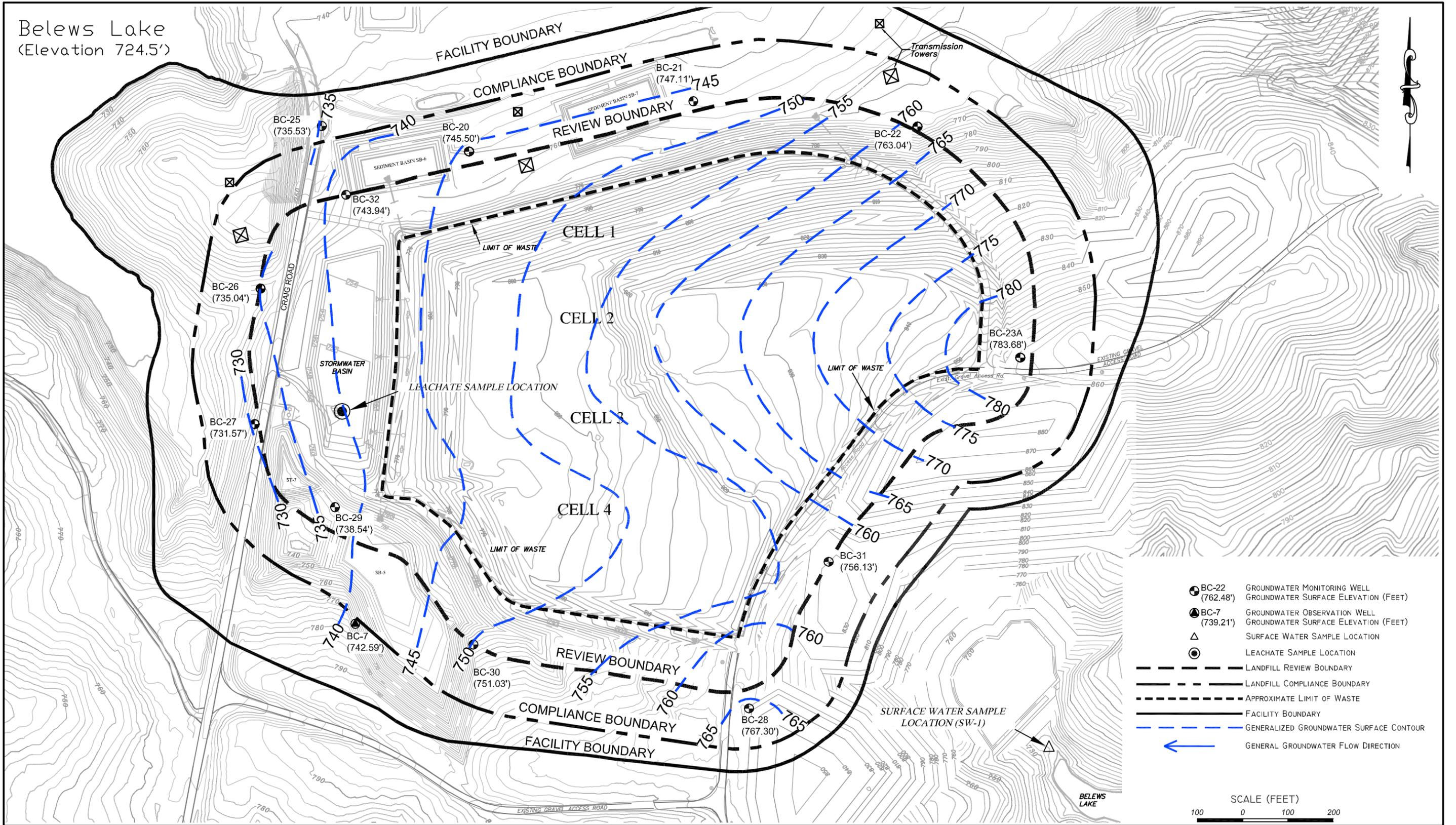
440 S. Church St. Suite 1000  
Charlotte, NC 28202-2075  
704.338.6700

**SAMPLE LOCATIONS  
BELEWS CREEK STEAM STATION  
FGD RESIDUE LANDFILL**

PERMIT NO. 8505

DATE  
AUGUST 2016

FIGURE  
2



NOTES:  
 BASE MAP PROVIDED BY DUKE ENERGY CAROLINAS, LLC. DATED MAY 21, 2015.  
 GROUNDWATER ELEVATIONS MEASURED ON MAY 4, 2016.



HDR Engineering Inc.  
 of the Carolinas  
 440 S. Church St. Suite 1000  
 Charlotte, NC 28202-2075  
 704.338.6700

**GENERALIZED GROUNDWATER SURFACE  
 CONTOURS - MAY 2016  
 BELEWS CREEK STEAM STATION  
 FGD RESIDUE LANDFILL  
 PERMIT NO. 8505**

DATE  
 AUGUST 2016  
 FIGURE  
 3

## Tables

**Table 1 - Well Construction Information**  
**Duke Energy Carolinas LLC/Belews Creek Steam Station**  
**FGD Residue Landfill, Permit No. 8505**

Well ID	Well Installation Date	Coordinates		TOC Elevation (ft.)	Ground Surface Elevation (ft.)	Well Stick-up Height Above Ground Surface (ft.)	Groundwater Elevation (ft.)	Depth to Water below TOC (ft.)	Total Well Depth below TOC (ft.)	Depth to Top of Screen from TOC (ft.)	Screened Interval below TOC (ft.)	Geology of Screened Interval	Well Diameter (in.)	Casing Type
		Latitude	Longitude											
BC-7	11/21/2002	36.2730787	-80.0588001	777.80	775.78	2.02	742.59	35.21	52.30	37.30	37.30 - 52.30	Bedrock	2	PVC
BC-20	8/31/2004	36.2759467	-80.0579852	757.22	754.58	2.64	745.50	11.72	24.22	14.22	14.22 - 24.22	Saprolite/PWR	2	PVC
BC-21	9/1/2004	36.2762661	-80.0563068	756.69	753.42	3.27	747.11	9.58	16.77	6.77	6.77 - 16.77	Saprolite	2	PVC
BC-22	9/2/2004	36.2761258	-80.0546255	765.91	763.72	2.19	763.04	2.87	13.00	3.00	3.00 - 13.00	Saprolite	2	PVC
BC-23A	9/2/2004	36.2747326	-80.0538373	863.79	862.56	1.23	783.68	80.11	101.21	76.21	76.21 - 101.21	PWR/Bedrock	2	PVC
BC-25	2/21/2006	36.2760911	-80.0590910	745.96	745.98	-0.02	735.53	12.90	23.15	8.15	8.15 - 23.15	Saprolite/PWR	2	PVC
BC-26	2/17/2006	36.2751022	-80.0595361	749.32	747.21	2.11	735.04	14.28	23.26	8.26	8.26 - 23.26	Saprolite	2	PVC
BC-27	2/20/2006	36.2742816	-80.0595706	761.88	761.96	-0.08	731.57	33.21	34.95	19.95	19.95 - 34.95	Saprolite	2	PVC
BC-28	2/15/2006	36.2725916	-80.0558439	818.09	816.02	2.07	767.30	50.79	60.20	45.20	45.20 - 60.20	Saprolite/PWR/BR	2	PVC
BC-29	10/29/2007	36.2737836	-80.0589625	753.18	751.41	1.77	738.54	17.66	22.30	7.30	7.30 - 22.30	Saprolite	2	PVC
BC-30	10/29/2007	36.2729612	-80.0579134	775.72	773.91	1.81	751.03	24.69	34.10	19.10	19.10 - 34.10	Saprolite/PWR	2	PVC
BC-31	10/30/2007	36.2734850	-80.0552573	816.40	813.43	2.97	756.13	60.27	83.30	63.30	63.30 - 83.30	PWR/Bedrock	2	PVC
BC-32	8/12/2013	36.2756757	-80.0589041	756.56	753.62	2.94	743.94	12.62	33.01	18.01	18.01 - 33.01	Saprolite/PWR	2	PVC

Notes:

1. TOC indicates top of casing.
2. ft. indicates feet.
3. in. indicates inches nominal diameter.
4. PVC indicates polyvinyl chloride.
5. PWR indicates partially weathered rock.
6. BR indicates bedrock.
7. Horizontal datum assumed to be NAD83.
8. Elevations based on NVGD 29 vertical datum.
9. Monitoring wells BC-25 and BC-27 were originally flush-mount monitoring wells, but were converted to stick-up wells in June 2015.
10. BC-32 was originally surveyed in NAVD 88 vertical datum. Elevation presented in table was converted to NVGD 29 vertical datum.
11. Depth to groundwater was measured on May 4, 2016.
12. Information provided by Duke Energy Carolinas, LLC on May 25, 2016.

**Table 2 - Groundwater Flow Velocities  
Duke Energy Carolinas LLC/Belews Creek Steam Station  
FGD Residue Landfill, Permit No. 8505**

<b>Well ID</b>	<b>Upgradient Groundwater Contour Elevation (ft)</b>	<b>Downgradient Groundwater Contour Elevation (ft)</b>	<b>Linear Distance Between Contours through Well (ft)</b>	<b>Hydraulic Gradient (ft/ft)</b>	<b>Hydraulic Conductivity (ft/day)</b>	<b>Effective Porosity (%/100)</b>	<b>Groundwater Velocity (ft/day)</b>
BC-7	745	740	179	0.028	0.310	0.005	1.73
BC-20	750	745	258	0.019	0.411	0.259	0.03
BC-21	750	745	109	0.046	0.411	0.259	0.07
BC-23A	783.68	780	165	0.022	0.310	0.005	1.38
BC-25	740	735	96	0.052	0.411	0.259	0.08
BC-26	740	735	161	0.031	0.411	0.259	0.05
BC-27	735	730	84	0.059	0.411	0.259	0.09
BC-28	767.30	765	21	0.109	0.411	0.259	0.17
BC-29	740	735	99	0.051	0.411	0.259	0.08
BC-30	755	750	99	0.051	0.411	0.259	0.08
BC-31	756.13	755	112	0.010	0.310	0.005	0.63
BC-32	745	740	238	0.021	0.411	0.259	0.03

Notes:

1. Linear distance measured through monitoring wells is approximately perpendicular to groundwater contours.
2. At monitoring well locations where downgradient contours are not present, the groundwater elevation at the monitoring well is used as the downgradient groundwater elevation.
3. At monitoring well locations where upgradient contours are not present, the groundwater elevation at the monitoring well is used as the upgradient groundwater elevation.
4. Monitoring wells are not listed where insufficient information is available to calculate velocity.
5. Hydraulic gradients and groundwater velocities are approximate.
6. Hydraulic conductivity presented for the alluvium/soil/saprolite hydrostratigraphic layer is the geometric mean of the conductivity data in the HDR Conductivity Database (unpublished data from Piedmont Carolina sites with foliated/layered bedrock).
7. Hydraulic conductivity presented for the bedrock layer is the geometric mean of the conductivity data in the HDR Conductivity Database (unpublished data from Piedmont Carolina sites with foliated/layered bedrock).
8. Effective porosity presented for the alluvium/soil/saprolite hydrostratigraphic layer is the mean value estimated from grain size data using Fetter/Bear Diagrams.
9. Effective porosity for the bedrock layer is based on published values .
10. Hydraulic gradient and groundwater velocities calculated based on groundwater depth measured on May 4, 2016.

**Table 3 - Field Data Parameters**  
**Duke Energy Carolinas LLC/Belews Creek Steam Station**  
**FGD Residue Landfill, Permit No. 8505**

DATE	SAMPLE ID	WELL DEPTH (feet)	DEPTH TO WATER (feet)	WATER ELEV. (feet)	APPEARANCE	ODOR	PURGE METHOD	PUMP RATE (mL/min)	WELL VOLUME (gal)	EVAC VOLUME (gal)	EVAC (YES/NO)	TEMP (deg C)	SPECIFIC Conductance (µU/cm)	pH (SU)	TURBIDITY (NTU)	ORP (mV-NHE)	DO (mg/L)
5/4/2016	BC-7	52.30	35.21	742.59	N/A	N/A	LO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/4/2016	BC-20	24.22	11.72	745.50	Normal	None	LF	210	2.04	0.85	N/A	15.03	1,010	5.2	4.62	368	8.54
5/4/2016	BC-21	16.77	9.58	747.11	Normal	None	LF	210	1.17	0.85	N/A	15.51	971	4.8	4.09	355	7.89
5/4/2016	BC-22	13.00	2.87	763.04	Normal	None	CP	N/A	1.65	5.25	NO	14.24	427	5.3	4.38	332	4.50
5/4/2016	BC-23A	101.21	80.11	783.68	Normal	None	CP	N/A	3.44	7.50	NO	15.09	44	5.7	13.9	292	8.11
5/4/2016	BC-25	26.15	12.90	735.53	Normal	None	LF	232	2.16	1.95	N/A	18.41	1,707	5.4	47.6	440	4.42
5/4/2016	BC-26	23.26	14.28	735.04	Normal	None	LF	300	1.46	4.05	N/A	15.63	155	4.8	4.74	477	3.42
5/4/2016	BC-27	38.33	33.21	731.57	Normal	None	LF	162	0.84	1.35	N/A	17.29	193	5.7	2.5	244	1.58
5/4/2016	BC-28	60.20	50.79	767.30	Normal	None	LF	150	1.53	0.65	N/A	16.26	58	5.6	8.4	301	6.95
5/4/2016	BC-29	25.32	17.66	738.54	Normal	None	LF	171	1.25	1.50	N/A	15.33	256	4.9	6.45	413	1.82
5/4/2016	BC-30	34.10	24.69	751.03	Normal	None	LF	198	1.53	3.35	N/A	14.55	66	4.5	22.9	381	7.05
5/4/2016	BC-31	83.30	60.27	756.13	Normal	None	LF	130	3.76	1.15	N/A	15.86	109	5.9	3.46	265	4.40
5/4/2016	BC-32	33.01	12.62	743.94	Normal	None	LF	260	3.33	1.20	N/A	16.57	1,572	5.3	3.2	337	6.33
5/4/2016	BC-SW1	N/A	N/A	N/A	Normal	N/A	N/A	N/A	N/A	N/A	N/A	20.77	573	6.9	6.68	213	8.05
5/4/2016	BC-LEACHATE	N/A	N/A	N/A	Normal	N/A	N/A	N/A	N/A	N/A	N/A	16.58	2,829	6.4	0.81	330	6.66

Notes:

- Purge Methods; LF=Low Flow, CP=Conventional Purge (3-5 well volumes), NP=No Purge (HydraSleeve), LO=Level Only. Pump rate applicable to LF purging only.
- Field sampling performed by Duke Energy Carolinas, LLC personnel.
- EVAC indicates whether the water level in the well was drawn down to the level of the pump during purging.
- µU/cm indicates micromhos per centimeter.
- SU indicates Standard Units.
- NTU indicates Nephelometric Turbidity Units.
- mV-NHE indicates millivolts-Normal Hydrogen Electrode.
- mL/min indicates milliliters per minute.
- mg/L indicates milligrams per liter.
- N/A indicates not applicable.
- Observation well BC-7 was gauged for depth to water only.
- Information provided by Tim Hunsucker of Duke Energy Carolinas, LLC on May 25, 2016.

**Table 4 - Field and Analytical Results**  
**Duke Energy Carolinas LLC/Belews Creek Steam Station**  
**FGD Residue Landfill, Permit No. 8505**

Sample Date: May 4, 2016 Laboratory Certificate Codes:  
Duke Energy Carolinas Field #5193  
Duke Energy Analytical Laboratory #248  
Field Sampling performed by Duke Energy Carolinas, LLC

Parameter	Monitoring Wells							MDL	SWSL	15A NCAC 2L Standard	Federal MCL
	8505 BC-20	8505 BC-21	8505 BC-22	8505 BC-23A	8505 BC-25	8505 BC-26	8505 BC-27				
Field pH	5.2	4.8	5.3	5.7	5.4	4.8	5.7	-	NE	6.5-8.5	6.5-8.5*
Field Specific Conductance	1010	971	427	44	1707	155	193	-	NE	NE	NE
Temperature	15.0	15.5	14.2	15.1	18.4	15.6	17.3	-	NE	NE	NE
Top of Casing	757.22	756.69	765.91	863.79	745.96	749.32	761.88	-	NE	NE	NE
Depth to Water	11.72	9.58	2.87	80.11	12.90	14.28	33.21	-	NE	NE	NE
Water Elevation	745.50	747.11	763.04	783.68	735.53	735.04	731.57	-	NE	NE	NE
Well Depth	24.22	16.77	13.00	101.21	23.15	23.26	34.95	-	NE	NE	NE
Arsenic	0.0817 J	4 J'	0.317 J	0.078 U	0.6 J	0.078 U	1.56 J'	0.078	10	10	10
Barium	53.6 J'	26.3 J'	165	34.6 J'	69.4 J'	347	20.5 J'	0.1	100	700	2,000
Boron	87.7	89.8	75.4	81.2	109	67.6	71	3.3	NE	700	NE
Cadmium	0.919 J	0.667 J	0.41 J	0.101 U	1.14	0.356 J	0.101 U	0.101	1	2	5
Chloride	4,190	6,840	4,010	2,200	43,800	19,000	10,000	110	NE	250,000	250,000*
Chromium	0.5 U	0.5 U	0.5 U	0.615 J	3.44 J	0.5 U	0.5 U	0.5	10	10	100
Copper	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	10	1,000	1,300
Fluoride	85 U	85 U	85 U	17 U	170 U	17 U	17 U	17	2,000	2,000	4,000
Iron	64.4 J'	42.8 J'	66.9 J'	318	2,820	85.5 J'	34,500	1.3	300	300	300*
Lead	0.065 U	0.234 J	0.065 U	0.114 J	0.666 J	0.0688 J	0.124 J	0.065	10	15	15
Manganese	16.2 J'	315	192	7.25 J'	106	33.6 J'	1,200	0.2	50	50	50*
Mercury	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334	0.2	1	2
Nickel	13.6 J'	0.811 J	0.5 U	0.5 U	30 J'	8.17 J'	0.5 U	0.5	50	100	NE
Nitrate (as Nitrogen)	2,450 J'	3,530 J'	1,140 J'	5.4 U	2,290 J'	6,260 J'	5.4 U	5.4	10,000	10,000	10,000
Selenium	3.96 J'	0.864 J	1.37 J'	0.092 U	12.4	0.092 U	0.189 J	0.092	10	20	50
Silver	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7	10	20	100*
Sulfate	540,000	498,000	165,000 J'	273 J'	999,000	14,500 J'	3760 J'	18	250,000	250,000	250,000*
Total Dissolved Solids	825,000	775,000	288,000	51,000	1,560,000	104,000	101,000	16,700	NE	500,000	500,000*
Zinc	17.8	10.4	15.8	9.52 J'	17.9	62.4	45.7	2.6	10	1,000	5,000*

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit. The MDL values presented are for samples not diluted by the laboratory during analysis.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L. 0202 Groundwater Quality Standards, last amended on April 1, 2013.
- MCL is the Federal Maximum Contaminant Level as found in 40 CFR, Subpart G, §141.62.
- \* Concentration listed is a secondary maximum contaminant level (SMCL). SMCLs are established by EPA in the National Secondary Drinking Water Regulations as found in 40 CFR §143.3.
- NE indicates not established. NA indicates not analyzed. Blank cells indicate that there is no information relevant to the respective row.
- Grayed values indicate values that equal or are greater than the SWSL.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's MDL. "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µD/cm indicates micromhos per centimeter.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on May 25, 2016.

**Table 4 - Field and Analytical Results**  
**Duke Energy Carolinas LLC/Belews Creek Steam Station**  
**FGD Residue Landfill, Permit No. 8505**

Parameter	Monitoring Wells					8505 SW-1	Field Blank	MDL	SWSL	15A NCAC 2L Standard	Federal MCL
	8505 BC-28	8505 BC-29	8505 BC-30	8505 BC-31	8505 BC-32						
Field pH	<b>5.6</b>	<b>4.9</b>	<b>4.5</b>	<b>5.9</b>	<b>5.3</b>	6.9	-	-	NE	6.5-8.5	6.5-8.5*
Field Specific Conductance	58	256	66	109	1,572	573	-	-	NE	NE	NE
Temperature	16.3	15.3	14.6	15.9	16.6	20.8	-	-	NE	NE	NE
Top of Casing	818.09	753.18	775.72	816.40	756.56	-	-	-	NE	NE	NE
Depth to Water	50.79	17.66	24.69	60.27	12.62	-	-	-	NE	NE	NE
Water Elevation	767.30	738.54	751.03	756.13	743.94	-	-	-	NE	NE	NE
Well Depth	60.20	22.30	34.10	83.30	33.01	-	-	-	NE	NE	NE
Arsenic	0.0856 J	0.143 J	0.133 J	0.0848 J	0.243 J	0.621 J	0.078 U	0.078	10	10	10
Barium	32.1 J'	79.1 J'	22.8 J'	16.7 J'	55.4 J'	91.1 J'	0.185 J	0.1	100	700	2,000
Boron	73.9	75.7	76.8	66.5	89.4	79	70.5	3.3	NE	700	NE
Cadmium	0.101 U	0.209 J	0.101 U	0.101 U	0.317 J	0.101 U	0.101 U	0.101	1	2	5
Chloride	1,680	3,650	4,430	1,910	2,380	941	22 U	110	NE	250,000	250,000*
Chromium	0.5 U	0.5 U	1.22 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5	10	10	100
Copper	1.8 J	1.14 J	1 U	1 U	1 U	1 U	1 U	1	10	1,000	1,300
Fluoride	17 U	55.8 J	17 U	96.3 J	85 U	219 J'	17 U	17	2,000	2,000	4,000
Iron	<b>344</b>	<b>328</b>	<b>1,010</b>	89.1 J'	27.8 J'	<b>3,090</b>	1.95 J	1.3	300	300	300*
Lead	0.377 J	0.107 J	0.514 J	0.065 U	0.0958 J	0.105 J	0.065 U	0.065	10	15	15
Manganese	10.3 J'	<b>584</b>	23.9 J'	12.5 J'	16.7 J'	<b>3,570</b>	0.372 J	0.2	50	50	50*
Mercury	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334 U	0.0334	0.2	1	2
Nickel	0.5 U	2.47 J	0.5 U	0.5 U	17.8 J'	1.54 J	0.5 U	0.5	50	100	NE
Nitrate (as Nitrogen)	966 J'	282 J'	1200 J'	770 J'	603 J'	66.4 J'	5.4 U	5.4	10,000	10,000	10,000
Selenium	0.092 U	1.9 J'	0.092 U	0.092 U	5.78 J'	0.394 J	0.142 J	0.092	10	20	50
Silver	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7	10	20	100*
Sulfate	398 J'	101,000 J'	1,300 J'	1,140 J'	<b>949,000</b>	<b>269,000</b>	18 U	18	250,000	250,000	250,000*
Total Dissolved Solids	70,000	170,000	74,000	81,000	<b>1,380,000</b>	426,000	NA	16,700	NE	500,000	500,000*
Zinc	25	17.1	2.88 J	2.6 U	40.2	55.8	18.4	2.6	10	1,000	5,000*

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit. The MDL values presented are for samples not diluted by the laboratory during analysis.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L. 0202 Groundwater Quality Standards, last amended on April 1, 2013.
- MCL is the Federal Maximum Contaminant Level as found in 40 CFR, Subpart G, §141.62.
- \* Concentration listed is a secondary maximum contaminant level (SMCL). SMCLs are established by EPA in the National Secondary Drinking Water Regulations as found in 40 CFR §143.3.
- NE indicates not established. NA indicates not analyzed. Blank cells indicate that there is no information relevant to the respective row.
- Grayed values indicate values that equal or are greater than the SWSL.
- Bold values indicate values that attain or exceed the 15A NCAC 2L Standard.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's MDL. "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL). An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µU/cm indicates micromhos per centimeter.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on May 25, 2016.

**Table 5 - Analytical Results that Equal or Exceed  
15A NCAC 2L Groundwater Quality Standards  
Duke Energy Carolinas LLC/Belews Creek Steam Station  
FGD Residue Landfill, Permit No. 8505**

Sample Date: May 4, 2016						
Parameter	Sample ID	Result	Units	15A NCAC 2L Standard	Historical Concentrations	Cause and Significance
pH	BC-20	5.2	SU	6.5 - 8.5	5.1 - 5.9	pH in BC-20 is consistent with historical results at well.
	BC-21	4.8			4.7 - 5.8	pH in BC-21 is consistent with historical results at well.
	BC-22	5.3			5.3 - 5.9	pH in BC-22 is consistent with historical results at well.
	BC-23A	5.7			5.4 - 6.1	pH in BC-23A is consistent with historical results at well.
	BC-25	5.4			5.0 - 5.8	pH in BC-25 is consistent with historical results at well.
	BC-26	4.8			4.7 - 5.2	pH in BC-26 is consistent with historical results at well.
	BC-27	5.7			4.8 - 5.7	pH in BC-27 is consistent with historical results at well.
	BC-28	5.6			5.4 - 6.1	pH in BC-28 is consistent with historical results at well.
	BC-29	4.9			4.8 - 5.5	pH in BC-29 is consistent with historical results at well.
	BC-30	4.5			5.3 - 5.9	pH in BC-30 is lower than historical results at well.
	BC-31	5.9			5.5 - 6.6	pH in BC-31 is consistent with historical results at well.
	BC-32	5.3			5.3 - 5.5	pH in BC-32 is consistent with historical results at well. This is the seventh sampling event at BC-32.
	Iron	BC-23A			318	µg/L
BC-25		2,820	374 - 288,000	Iron concentration in BC-25 is consistent with historical results at well. Turbidity in BC-25 measured at 47.6 NTU.		
BC-27		34,500	2,400 - 32,300	Iron concentration in BC-27 is higher than historical results at well. Turbidity in BC-27 measured at 2.50 NTU.		
BC-28		344	33 - 3,491	Iron concentration in BC-28 is consistent with historical results at well. Turbidity in BC-28 measured at 8.42 NTU.		
BC-29		328	169 - 20,300	Iron concentration in BC-29 is consistent with historical results at well. Turbidity in BC-29 measured at 6.45 NTU.		
BC-30		1,010	228 - 11,800	Iron concentration in BC-30 is consistent with historical results at well. Turbidity in BC-30 measured at 22.9 NTU.		
SW-1		3,090	696 - 7,625	Iron concentration in SW-1 is consistent with historical results at location.		
Manganese	BC-21	315	µg/L	50	4.7 - 240	Manganese concentration in BC-21 is higher than historical results at well. Turbidity in BC-21 measured at 4.09 NTU.
	BC-22	192			7.2 - 225	Manganese concentration in BC-22 is consistent with historical results at well. Turbidity in BC-22 measured at 4.38 NTU.
	BC-25	106			5.6 - 942	Manganese concentration in BC-25 is consistent with historical results at well. Turbidity in BC-25 measured at 47.6 NTU.
	BC-27	1,200			113 - 932	Manganese concentration in BC-27 is higher than historical results at well. Turbidity in BC-27 measured at 2.50 NTU.
	BC-29	584			7.1 - 277	Manganese concentration in BC-29 is higher than historical results at well. Turbidity in BC-29 measured at 6.45 NTU.
	SW-1	3,570			222 - 1,779	Manganese concentration in SW-1 is higher than historical results at location.
Sulfate	BC-20	540,000	µg/L	250,000	21,950 - 554,000	Sulfate concentration in BC-20 is consistent with historical results at well.
	BC-21	498,000			11,690 - 701,000	Sulfate concentration in BC-21 is consistent with historical results at well.
	BC-25	999,000			14,320 - 1,190,000	Sulfate concentration in BC-25 is consistent with historical results at well.
	BC-32	949,000			490,000 - 854,000	Sulfate concentration in BC-32 is higher than historical results at well.
	SW-1	269,000			9,760 - 164,000	Sulfate concentration in SW-1 is higher than historical results at location.
Total Dissolved Solids	BC-20	825,000	µg/L	500,000	108,000 - 838,000	TDS concentration in BC-20 is consistent with historical results at well. Turbidity in BC-20 measured at 4.62 NTU.
	BC-21	775,000			88,000 - 1,020,000	TDS concentration in BC-21 is consistent with historical results at well. Turbidity in BC-21 measured at 4.09 NTU.
	BC-25	1,560,000			74,000 - 1,810,000	TDS concentration in BC-25 is consistent with historical results at well. Turbidity in BC-25 measured at 47.6 NTU.
	BC-32	1,380,000			789,000 - 1,270,000	TDS concentration in BC-32 is higher than historical results at well. Turbidity in BC-32 measured at 3.20 NTU.

- Notes:
1. 15A NCAC 2L Standard refers to Class GA Standards as found in 15A NCAC 02L .0202 Groundwater Standards, last amended on April 1, 2013.
  2. µg/L indicates micrograms per liter.
  3. SU indicates Standard Units.
  4. NTU indicates Nephelometric Turbidity Units.
  5. Historical concentrations based on data in Duke Energy Carolinas, LLC analytical results database.

**Table 6 - Leachate Field and Analytical Results  
Duke Energy Carolinas LLC/Belews Creek Steam Station  
FGD Residue Landfill, Permit No. 8505**

Sample Date: May 4, 2016			Laboratory Certificate Codes:			
Field Sampling performed by Duke Energy Carolinas, LLC			Duke Energy Carolinas Field #5193 Duke Energy Analytical Laboratory #248			
Parameter	SWS ID	Units	Certificate Code	8505 Leachate	MDL	SWSL
Field pH	320	SU	5193	6.4	-	NE
Field Specific Conductance	323	µΩ/cm	5193	2,829	-	NE
Temperature	325	°C	5193	16.58	-	NE
Arsenic	14	µg/L	248	0.94 J	0.78	10
Barium	15	µg/L	248	17.7 J'	0.1	100
Boron	428	µg/L	248	6,500	3.3	NE
Cadmium	34	µg/L	248	1.01 U	1.01	1
Chloride	301	µg/L	248	104,000	550	NE
Chromium	51	µg/L	248	0.5 U	0.5	10
Copper	54	µg/L	248	1 U	1	10
Fluoride	312	µg/L	248	1,980 J	425	2,000
Iron	340	µg/L	248	72.9 J'	1.3	300
Lead	131	µg/L	248	0.65 U	0.65	10
Manganese	342	µg/L	248	7,650	0.2	50
Mercury	132	µg/L	248	0.0334 U	0.0334	0.2
Nickel	152	µg/L	248	3.8 J	0.5	50
Nitrate (as Nitrogen)	303	µg/L	248	1,090 J'	5.4	10,000
Selenium	183	µg/L	248	2,250	0.92	10
Silver	184	µg/L	248	0.7 U	0.7	10
Sulfate	315	µg/L	248	1,620,000	9,000	250,000
Total Dissolved Solids	311	µg/L	248	2,250,000	167,000	NE
Zinc	213	µg/L	248	2.6 U	2.6	10

Notes:

- Concentrations presented in micrograms per liter (µg/L).
- SWS ID is the Solid Waste Section Identification Number.
- MDL is the laboratory method detection limit.
- SWSL is the Solid Waste Section Limit. NCDEQ defines the SWSL as the lowest amount of analyte in a sample that can be quantitatively determined with suitable precision and accuracy.
- Grayed values indicate values that equal or are greater than the SWSL.
- Qualifiers in non-italicized text are laboratory data qualifiers or "flags". "U" is used to identify results not detected at concentrations which equal the laboratory's method detection limit (MDL). "J" is used to identify estimated concentrations which equal or are greater than the MDL but are less than the laboratory's method reporting limit (MRL).  
An italicized J'-flag is a data qualifier, added by HDR to indicate concentrations which equal or are greater than the laboratory's MRL but are less than the SWSL.
- SU indicates Standard Units.
- µΩ/cm indicates micromhos per centimeter.
- NE indicates not established.
- According to the Constituent Look-up webpage on the NCDEQ Division of Waste Management webpage, there is no SWSL or 2L Standard for chloride associated with CAS number 16887-00-6, which is the CAS reported by the laboratory for the analyses completed. Therefore, the SWSL and 2L Standard listed are for the chloride with CAS number SW301 as specified on the Constituent Look-up webpage (last updated June 13, 2011).
- Analytical results obtained from Electronic Data Deliverable (EDD) provided by Tim Hunsucker of Duke Energy Carolinas, LLC on May 25, 2016.



# A

Appendix A

Field Sampling Forms

## FIELD SAMPLING CALIBRATION FORM

<b>STUDY:</b> BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING	
<b>DATE (s):</b> May 4, 2016	<b>SURFACE UNIT READER:</b> LDC
<b>COLLECTORS:</b> LDC, PSP, HET	<b>SURFACE UNIT SERIAL #:</b> 0662
<b>ANALYZER MODEL#:</b> HL4	<b>ANALYZER SERIAL #:</b> 400439
<b>OTHER EQUIPMENT:</b> TURBIDIMETER NO.2 - 3260-GW	<b>WEATHER CONDITIONS:</b> Partly cloudy, slight breeze, 60 to 75 deg F

PROCEDURE #: HYDROLAB 3210.6 VALIDATED BY: uc 5/5/16

Calibration Date / Time	DATE:	4-May-16	TIME:	310	DATE:	5-May-16	TIME:	645	
CALIBRATION BP (mmHg) 735.74					CALIBRATION BP (mmHg) 731.79				
Parameter	Calibration Standard	Instrument Value	Standard Value	Calibration Results	Instrument Value	Standard Value	Calibration Results		
SPEC. COND. (uS/cm)	SS	0.0	0.0	INSTRUMENT ZEROED	0.0	0.0	INSTRUMENT ZEROED		
	SS	726.3	720	CALIBRATION ACCEPTED	720.3	720	CALIBRATION ACCEPTED		
	SS	344.6	350	CALIBRATION ACCEPTED	346.7	350	CALIBRATION ACCEPTED		

*Specific conductance checkpoint (used if sampled well is outside of initial calibration range).*

SPEC. COND. CHECK (uS/cm)	SS		1410			1410	
pH (units)	B (7.00)	7.00	7.02	CALIBRATION ACCEPTED	7.04	7.02	CALIBRATION ACCEPTED
	B (4.00)	3.98	4.00	CALIBRATION ACCEPTED	4.03	4.00	CALIBRATION ACCEPTED
	B (10.00)	9.94	10.06	CALIBRATION FAILED	10.01	10.06	CALIBRATION ACCEPTED
		Buffer Temp.	20.15		Buffer Temp.	20.13	
pH Check	B (7.00)		7.13				
Time:			0.00				
<input checked="" type="checkbox"/> ORP		439	441	CALIBRATION ACCEPTED	444	442	CALIBRATION ACCEPTED
Zobell's		N/A	N/A		N/A	N/A	
		ORP Temp.	20.00		ORP Temp.	19.78	
<input checked="" type="checkbox"/> DO (mg/L)	TEMP (C°)		19.57			19.25	
	BP (mmHg)		735.74			731.79	
	COND		108			109.2	
	100 % mg/L	8.87	8.87	CALIBRATION ACCEPTED	8.88	8.88	CALIBRATION ACCEPTED
	After Cal	8.86	99.91	After Cal % SAT	8.86	99.81	After Cal % SAT
	LCS	8.85	99.79	CALIBRATION PASS	8.81	99.25	CALIBRATION PASS
	LCSD	8.84	-0.11	CALIBRATION PASS	8.82	0.11	CALIBRATION PASS
<input checked="" type="checkbox"/> TURB (ntu)	SS	53.9	56.0	CALIBRATION ACCEPTED	54.8	56.0	CALIBRATION ACCEPTED
Temp Cert Device #							
TEMP (deg C)	NIST	N/A	N/A	Adjustment Not Available	N/A	N/A	Adjustment Not Available

**INSTRUMENT MAINTENANCE**

**DATE / TIME**

Conductance Subsystem		pH Subsystem	
<input type="checkbox"/> Cleaned Electrodes		<input type="checkbox"/> Cleaned Electrodes	
<input type="checkbox"/> Tested - OK		<input type="checkbox"/> Replaced ref Electrode KCL	
<input type="checkbox"/> See Notes		<input type="checkbox"/> Replaced Ref. Electrode Tip	
		<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes
Oxidation Reduction Subsystem		Temperature Subsystem	
<input type="checkbox"/> Cleaned Electrode		<input type="checkbox"/> Cleaned Electrode	
<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes	<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes
Dissolved Oxygen Subsystem			
<input type="checkbox"/> Replaced Teflon Membrane		<input type="checkbox"/> Cleaned Electrode	
<input type="checkbox"/> Replaced DO electrolyte		<input type="checkbox"/> See Notes	

**Field Barometric Pressure**

Beginning BP	735.3	(mmHg)	Ending BP	734.8	(mmHg)
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KEY: B = Buffer      W = Winkler      → = Adjusted To      N/A = Not Applicable  
 SS = Standard solution      AW = Average Winkler      ← = Not Adjusted To

**NOTES:**

## FIELD SAMPLING CALIBRATION FORM

<b>STUDY:</b> BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING	
<b>DATE (s):</b> May 4, 2016	<b>SURFACE UNIT READER:</b> PSP
<b>COLLECTORS:</b> LDC, PSP, HET	<b>SURFACE UNIT SERIAL #:</b> 0800
<b>ANALYZER MODEL#:</b> HL4	<b>ANALYZER SERIAL #:</b> 400440
<b>OTHER EQUIPMENT:</b> TURBIDIMETER NO.1 - 3260-GW	<b>WEATHER CONDITIONS:</b> Partly cloudy, slight breeze, 60 to 75 deg F

PROCEDURE #: HYDROLAB 3210.6 VALIDATED BY: WOC 5/5/16

Calibration Date / Time	DATE:	4-May-16	TIME:	330	DATE:	5-May-16	TIME:	705
CALIBRATION BP (mmHg)				735.74				
CALIBRATION BP (mmHg)				731.79				
Parameter	Calibration Standard	Instrument Value	Standard Value	Calibration Results	Instrument Value	Standard Value	Calibration Results	
SPEC. COND. (uS/cm)	SS	0.0	0.0	INSTRUMENT ZEROED	0.0	0.0	INSTRUMENT ZEROED	
	SS	731.7	720	CALIBRATION ACCEPTED	715.9	720	CALIBRATION ACCEPTED	
	SS	342.9	350	CALIBRATION ACCEPTED	340.6	350	CALIBRATION ACCEPTED	

*Specific conductance checkpoint (used if sampled well is outside of initial calibration range).*

SPEC. COND. CHECK (uS/cm)	SS		1410			1410	
pH (units)	B (7.00)	6.98	7.02	CALIBRATION ACCEPTED	7.08	7.02	CALIBRATION ACCEPTED
	B (4.00)	3.94	4.00	CALIBRATION ACCEPTED	4.03	4.00	CALIBRATION ACCEPTED
	B (10.00)	10.08	10.06	CALIBRATION ACCEPTED	10.10	10.06	CALIBRATION ACCEPTED
		Buffer Temp.	20.04		Buffer Temp.	20.10	
pH Check	B (7.00)		7.13				
Time:			0.00				
<input checked="" type="checkbox"/> ORP		440	441	CALIBRATION ACCEPTED	442	442	CALIBRATION ACCEPTED
Zobell's		N/A	N/A		N/A	N/A	
		ORP Temp.	19.93		ORP Temp.	19.76	
<input checked="" type="checkbox"/> DO (mg/L)	TEMP (C°)		19.53			19.24	
	BP (mmHg)		735.74			731.79	
	COND		107			106.6	
	100 % mg/L	8.86	8.88	CALIBRATION ACCEPTED	8.89	8.88	CALIBRATION ACCEPTED
	After Cal	8.89	100.16	After Cal % SAT	8.90	100.24	After Cal % SAT
	LCS	8.88	100.05	CALIBRATION PASS	8.86	99.79	CALIBRATION PASS
	LCSD	8.86	-0.23	CALIBRATION PASS	8.83	-0.34	CALIBRATION PASS
<input checked="" type="checkbox"/> TURB (ntu)	SS	52.6	53.5	CALIBRATION ACCEPTED	52.7	53.5	CALIBRATION ACCEPTED
Temp Cert Device #							
TEMP (deg C)	NIST	N/A	N/A	Adjustment Not Available	N/A	N/A	Adjustment Not Available

### INSTRUMENT MAINTENANCE

### DATE / TIME

Conductance Subsystem		pH Subsystem	
<input type="checkbox"/> Cleaned Electrodes		<input type="checkbox"/> Cleaned Electrodes	
<input type="checkbox"/> Tested - OK		<input type="checkbox"/> Replaced ref Electrode KCL	
<input type="checkbox"/> See Notes		<input type="checkbox"/> Replaced Ref. Electrode Tip	
		<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes
Oxidation Reduction Subsystem		Temperature Subsystem	
<input type="checkbox"/> Cleaned Electrode		<input type="checkbox"/> Cleaned Electrode	
<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes	<input type="checkbox"/> Tested - OK	<input type="checkbox"/> See Notes
Dissolved Oxygen Subsystem			
<input type="checkbox"/> Replaced Teflon Membrane		<input type="checkbox"/> Cleaned Electrode	
<input type="checkbox"/> Replaced DO electrolyte		<input type="checkbox"/> See Notes	

### Field Barometric Pressure

Beginning BP	735.3	(mmHg)	Ending BP	734.8	(mmHg)
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KEY: B = Buffer      W = Winkler      → = Adjusted To      N/A = Not Applicable  
 SS = Standard solution      AW = Average Winkler      ← = Not Adjusted To

### NOTES:



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LEVEL ONLY

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-7</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	777.80	MIDDLE OF WETTED SCREEN (ft toc)	44.80
WELL DEPTH (ft TOC)	52.30	GS ELEV (ft msl)	775.78	PUMP INTAKE DEPTH (ft TOC)	N/A
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	37.30 TO 52.30

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	LEVEL ONLY	PURGE METHOD	
<b>WATER LEVEL ONLY</b>		TUBING DIAMETER (in)		<b>Level Only</b>	
		PUMP CONTROLLER SETTINGS			
PRESSURE	(psi)	RECHARGE	(sec)	DISCHARGE	(sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	35.21	WATER COLUMN (ft)	17.09	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	742.59	WELL VOLUME (gal)	2.79		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE					

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/> TEMP	<input checked="" type="checkbox"/> SPECIFIC COND.	<input checked="" type="checkbox"/> pH	<input checked="" type="checkbox"/> TURBIDITY	<input type="checkbox"/> ORP	<input type="checkbox"/> DISSOLVED OXYGEN	<input type="checkbox"/> WELL VOL
(gal)	(ft)	(YES/NO)	(deg C)	(umho/cm)	(SU)	(NTU)	(mV-NHE)	(mg/L)	(recalculates on current water level)
2.79		N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A									
TOTAL PURGE VOLUME		* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column			SAMPLE COLLECTED BY		DATE	TIME	CHLORINE (mg/l)
0.00					HET, PSP		5/4/2016	@	

QC By: WJC 5/5/16

Sample preservation verified to pH (units) N/A

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-20</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	757.22	MIDDLE OF WETTED SCREEN (ft toc)	19.22
WELL DEPTH (ft TOC)	24.22	GS ELEV (ft msl)	754.58	PUMP INTAKE DEPTH (ft TOC)	23.22
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	14.22 TO 24.22

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	12 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	11.72	WATER COLUMN (ft)	12.50	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	745.50	WELL VOLUME (gal)	2.04		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
12:30	12.68	210		15.67		1012		5.23		5.0		364		8.55		N/A
12:35	12.68	210		15.25		1014		5.17		3.9		366		8.52		N/A
12:40	12.68	210		15.03		1010		5.16		4.6		368		8.54		N/A
DRAW-DOWN		0.96		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE (mg/l)
INITIAL PURGE VOLUME		0.25		(gal)	SAMPLE COLLECTED BY			DATE		TIME						
TOTAL PURGE VOLUME		0.85		(gal)	LDC			5/4/2016		@ 1245						

QC By: WLC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-21</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.69	MIDDLE OF WETTED SCREEN (ft toc)	13.18
WELL DEPTH (ft TOC)	16.77	GS ELEV (ft msl)	753.42	PUMP INTAKE DEPTH (ft TOC)	16.27
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	6.77 TO 16.77

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	10 (psi)	RECHARGE	10 (sec)	DISCHARGE	7 (sec)

Target 210 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	9.58	WATER COLUMN (ft)	7.19	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	747.11	WELL VOLUME (gal)	1.17		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (recalculates on current water level) (gal)
11:50	9.97	210		15.33		943		4.77		4.6		351		7.99		N/A
11:55	9.97	210		15.20		962		4.76		4.8		354		7.98		N/A
12:00	9.97	210		15.51		971		4.77		4.1		355		7.89		N/A
<b>DRAW-DOWN</b>		0.39		(ft)	<b>COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED</b>										<b>CHLORINE</b>	
<b>INITIAL PURGE VOLUME</b>		0.25		(gal)	<b>SAMPLE COLLECTED BY</b>		<b>DATE</b>		<b>TIME</b>						<b>(mg/l)</b>	
<b>TOTAL PURGE VOLUME</b>		0.85		(gal)	LDC		5/4/2016		@		1205				NA	

QC By: WLC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES		
PROTECTIVE CASING	Good Condition				
WELL PAD	Good Condition				
WELL CASING	Good Condition				
WELL TAG	Good Tag				

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR CONVENTIONAL SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-22</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	765.91	MIDDLE OF WETTED SCREEN (ft toc)	8.00
WELL DEPTH (ft TOC)	13.00	GS ELEV (ft msl)	763.72	PUMP INTAKE DEPTH (ft TOC)	11.50
SCREEN LENGTH (ft)	10.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	3.00 TO 13.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Conventional	
PUMP CONTROLLER SETTINGS					
PRESSURE	8 (psi)	RECHARGE	5 (sec)	DISCHARGE	10 (sec)

Target 500 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	2.87	WATER COLUMN (ft)	10.13	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	763.04	WELL VOLUME (gal)	1.65		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/> TEMP	<input checked="" type="checkbox"/> SPECIFIC COND.	<input checked="" type="checkbox"/> pH	<input checked="" type="checkbox"/> TURBIDITY	<input type="checkbox"/> ORP	<input type="checkbox"/> DISSOLVED OXYGEN	<input type="checkbox"/> WELL VOL (gal)	
(gal)	(ft)	(YES/NO)	(deg C)	(umho/cm)	(SU)	(NTU)	(mV-NHE)	(mg/L)	(recalculates on current water level)	
1.65										
1.75		NO	14.25	409	5.27	3.6	329	4.57		
1.75		NO	14.27	414	5.26	2.9	331	4.54		
1.75		NO	14.24	427	5.26	4.4	332	4.50		
TOTAL PURGE VOLUME		* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column		COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED						CHLORINE (mg/l)
5.25				SAMPLE COLLECTED BY		DATE		TIME		
				LDC	5/4/2016	@	1130		N/A	

QC By: LDC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR CONVENTIONAL SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-23A</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	863.79	MIDDLE OF WETTED SCREEN (ft toc)	90.66
WELL DEPTH (ft TOC)	101.21	GS ELEV (ft msl)	862.56	PUMP INTAKE DEPTH (ft TOC)	98.71
SCREEN LENGTH (ft)	25.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	76.21 TO 101.21

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Conventional	
PUMP CONTROLLER SETTINGS					
PRESSURE	60 (psi)	RECHARGE	15 (sec)	DISCHARGE	6 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	80.11	WATER COLUMN (ft)	21.10	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	783.68	WELL VOLUME (gal)	3.44		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

PURGE VOLUME	WATER LEVEL AFTER PURGE *	COMPLETE EVACUATION	<input checked="" type="checkbox"/>	TEMP	<input checked="" type="checkbox"/>	SPECIFIC COND.	<input checked="" type="checkbox"/>	pH	<input type="checkbox"/>	TURBIDITY	<input type="checkbox"/>	ORP	<input type="checkbox"/>	DISSOLVED OXYGEN	<input checked="" type="checkbox"/>	WELL VOL
3.44 (gal)	(ft)	(YES/NO)		(deg C)		(umho/cm)		(SU)		(NTU)		(mV-NHE)		(mg/L)		(gal) <small>(recalculates on current water level)</small>
3.50	90.03	NO		15.02		44		5.66		17.8		272		8.05		1.82
2.00		NO		15.04		44		5.70		27.7		278		8.14		
2.00		NO		15.09		44		5.70		13.9		292		8.11		
TOTAL PURGE VOLUME		* Optional measurement to recalculate well volume when purging results in substantial drawdown of water column		COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED												CHLORINE (mg/l)
7.50				SAMPLE COLLECTED BY			DATE		TIME							
				LDC			5/4/2016		@		0825		N/A			

QC By: WLC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-25</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	748.43	MIDDLE OF WETTED SCREEN (ft toc)	19.53
WELL DEPTH (ft TOC)	26.15	GS ELEV (ft msl)	745.97	PUMP INTAKE DEPTH (ft TOC)	25.65
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	11.15 TO 26.15

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	8 (psi)	RECHARGE	10 (sec)	DISCHARGE	5 (sec)

Target 80 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	12.90	WATER COLUMN (ft)	13.25	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	735.53	WELL VOLUME (gal)	2.16		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
13:15	12.28	232		18.55		1667		5.32		41.9		431		4.34		N/A
13:20	12.28	232		18.69		1655		5.31		47.6		434		4.28		N/A
13:25	12.28	232		18.98		1689		5.35		47.5		435		4.41		N/A
13:30	12.28	232		18.41		1707		5.35		47.6		440		4.42		N/A
DRAW-DOWN		0.00		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE (mg/l)
INITIAL PURGE VOLUME		1.00		(gal)	SAMPLE COLLECTED BY			DATE		TIME						
TOTAL PURGE VOLUME		1.95		(gal)	HET, PSP			5/4/2016		@ 1335						

QC By: WC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES	
PROTECTIVE CASING	Good Condition		Originally a flush mount well, it was converted to a stick-up well by adding a riser to the well casing during June 2015. The original well depth from TOC was 23.15 ft. June 29, 2015 the dedicated pumps were re-set by adding new tubing. Well depth from TOC was re-measured at 26.15 ft. and updated on this blankform.	
WELL PAD	Good Condition			
WELL CASING	Good Condition			
WELL TAG	Good Tag			

SAMPLING NOTES

If well is pumped with no energy discharge (8 to 10 psi) turbidity will decrease below 10 ntu. Ash haul trucks driving by may effect samples.



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-26</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	749.32	MIDDLE OF WETTED SCREEN (ft toc)	18.77
WELL DEPTH (ft TOC)	23.26	GS ELEV (ft msl)	747.21	PUMP INTAKE DEPTH (ft TOC)	22.26
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	8.26 TO 23.26

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
Target 120 mL/min.					
PUMP CONTROLLER SETTINGS					
PRESSURE	13 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	14.28	WATER COLUMN (ft)	8.98	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	735.04	WELL VOLUME (gal)	1.46		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
12:20	15.48	300		15.65		157		4.75		36.0		474		3.51		N/A
12:25	15.48	300		15.61		154		4.77		8.8		476		3.45		N/A
12:30	15.48	300		15.63		155		4.77		4.7		477		3.42		N/A
DRAW-DOWN		1.20		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED										CHLORINE (mg/l)	
INITIAL PURGE VOLUME		3.25		(gal)	SAMPLE COLLECTED BY			DATE		TIME						
TOTAL PURGE VOLUME		4.05		(gal)	HET, PSP			5/4/2016		@		1235		NA		

QC By: WLC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-27</b>		

### MONITORING WELL INFORMATION

WELL DIAMETER (in)	2	TOC ELEV (ft msl)	764.78	MIDDLE OF WETTED SCREEN (ft toc)	35.77
WELL DEPTH (ft TOC)	38.33	GS ELEV (ft msl)	762.44	PUMP INTAKE DEPTH (ft TOC)	37.83
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	23.33 TO 38.33

### EQUIPMENT INFORMATION

LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD		Low Flow
PUMP CONTROLLER SETTINGS					
PRESSURE	17 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 90 mL/min.

### SAMPLING INFORMATION

INITIAL DEPTH TO WATER (ft TOC)	33.21	WATER COLUMN (ft)	5.12	<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>
WATER ELEVATION (ft msl)	731.57	WELL VOLUME (gal)	0.84	
DETECTED ODOR	None	CONVERSION FACTOR	0.1631	
APPEARANCE	Normal			

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
10:50	33.44	162		17.53		210		5.83		3.0		234		2.14		N/A
10:55	33.44	162		17.92		208		5.83		2.9		247		1.88		N/A
11:00	33.44	162		17.62		206		5.78		3.4		206		1.79		N/A
11:05	33.44	162		16.90		194		5.74		1.8		245		1.41		N/A
11:10	33.44	162		17.08		186		5.72		2.1		246		1.48		N/A
11:15	33.44	162		17.29		193		5.73		2.5		244		1.58		N/A
<b>DRAW-DOWN</b>		0.23		(ft)	<b>COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED</b>											
INITIAL PURGE VOLUME		0.25		(gal)	<b>SAMPLE COLLECTED BY</b>			<b>DATE</b>		<b>TIME</b>		<b>CHLORINE (mg/l)</b>				
TOTAL PURGE VOLUME		1.35		(gal)	HET, PSP			5/4/2016		@ 1120		NA				

QC By:	WC 5/5/16
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Sample preservation verified to pH (units)	< 2.0
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WELL CONDITION			ADDITIONAL WELL CONDITION NOTES	
PROTECTIVE CASING	Good Condition		Originally a flush mount well, it was converted to a stick-up well by adding a riser to the well casing during June 2015. The original well depth from TOC was 34.95 ft. June 29, 2015 the dedicated pumps were re-set by adding new tubing. Well depth from TOC was re-measured at 38.33 ft. and updated on this blankform.	
WELL PAD	Good Condition			
WELL CASING	Good Condition			
WELL TAG	Good Tag			

### SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-28</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	818.09	MIDDLE OF WETTED SCREEN (ft toc)	55.50
WELL DEPTH (ft TOC)	60.20	GS ELEV (ft msl)	816.02	PUMP INTAKE DEPTH (ft TOC)	59.20
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	45.20 TO 60.20

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	30 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 150 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	50.79	WATER COLUMN (ft)	9.41	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	767.30	WELL VOLUME (gal)	1.53		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (recalculates on current water level) (gal)
9:50	53.09	150		15.80		59		5.66		4.1		296		6.76		N/A
9:55	53.09	150		16.20		59		5.65		4.3		299		6.82		N/A
10:00	53.09	150		16.26		58		5.64		8.4		301		6.95		N/A
<b>DRAW-DOWN</b>		2.30		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											<b>CHLORINE</b>
INITIAL PURGE VOLUME		0.25		(gal)	<b>SAMPLE COLLECTED BY</b>		<b>DATE</b>		<b>TIME</b>							(mg/l)
TOTAL PURGE VOLUME		0.65		(gal)	LDC		5/4/2016		@ 1005							NA

QC By: LDC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION			ADDITIONAL WELL CONDITION NOTES		
PROTECTIVE CASING	Good Condition				
WELL PAD	Minor Cracks				
WELL CASING	Good Condition				
WELL TAG	Good Tag				

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-29</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.20	MIDDLE OF WETTED SCREEN (ft toc)	21.49
WELL DEPTH (ft TOC)	25.32	GS ELEV (ft msl)	752.28	PUMP INTAKE DEPTH (ft TOC)	18.28
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	10.32 TO 25.32

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	12 (psi)	RECHARGE	10 (sec)	DISCHARGE	10 (sec)

Target 200 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	17.66	WATER COLUMN (ft)	7.66	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	738.54	WELL VOLUME (gal)	1.25		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
9:30	17.80	171		16.02		263		4.88		10.6		412		2.00		N/A
9:35	17.80	171		15.66		251		4.87		7.9		412		2.02		N/A
9:40	17.80	171		15.33		256		4.85		6.5		413		1.82		N/A
DRAW-DOWN		0.14		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											CHLORINE (mg/l)
INITIAL PURGE VOLUME		1.00		(gal)	SAMPLE COLLECTED BY			DATE		TIME						
TOTAL PURGE VOLUME		1.50		(gal)	PSP, HET			5/4/2016		@ 0945						

QC By: VDC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-30</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	775.72	MIDDLE OF WETTED SCREEN (ft toc)	29.40
WELL DEPTH (ft TOC)	34.10	GS ELEV (ft msl)	773.91	PUMP INTAKE DEPTH (ft TOC)	33.60
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	19.10 TO 34.10

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26056	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
Target 200 mL/min.					
PUMP CONTROLLER SETTINGS					
PRESSURE	17 (psi)	RECHARGE	13 (sec)	DISCHARGE	7 (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	24.69	WATER COLUMN (ft)	9.41	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	751.03	WELL VOLUME (gal)	1.53		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
8:05	25.43	198		14.45		67		5.47		31.5		347		7.00		N/A
8:10	25.43	198		14.48		66		5.47		33.4		354		7.01		N/A
8:15	25.43	198		14.48		66		5.47		26.1		361		7.01		N/A
8:20	25.43	198		14.50		66		5.48		24.1		366		7.02		N/A
8:25	25.43	198		14.58		66		5.47		23.8		370		7.02		N/A
8:30	25.43	198		14.64		66		5.49		22.7		374		7.04		N/A
8:35	25.43	198		14.58		66		5.48		22.7		379		7.04		N/A
8:40	25.43	198		14.55		66		4.48		22.9		381		7.05		N/A
DRAW-DOWN		0.74		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											
INITIAL PURGE VOLUME		1.50		(gal)	SAMPLE COLLECTED BY		DATE		TIME		CHLORINE		(mg/l)			
TOTAL PURGE VOLUME		3.35		(gal)	PSP, HET		5/4/2016		@ 0845		NA					

QC By: WJC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES

Well located in middle of field.



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-31</b>		

### MONITORING WELL INFORMATION

WELL DIAMETER (in)	2	TOC ELEV (ft msl)	816.40	MIDDLE OF WETTED SCREEN (ft toc)	73.30
WELL DEPTH (ft TOC)	83.30	GS ELEV (ft msl)	813.43	PUMP INTAKE DEPTH (ft TOC)	82.00
SCREEN LENGTH (ft)	20.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	63.30 TO 83.30

### EQUIPMENT INFORMATION

LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD
		TUBING DIAMETER (in)	1/2 OD	Low Flow
Target 140 mL/min.				
PUMP CONTROLLER SETTINGS				
PRESSURE	30 (psi)	RECHARGE	10 (sec)	DISCHARGE 10 (sec)

### SAMPLING INFORMATION

INITIAL DEPTH TO WATER (ft TOC)	60.27	WATER COLUMN (ft)	23.03	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)
WATER ELEVATION (ft msl)	756.13	WELL VOLUME (gal)	3.76	
DETECTED ODOR	None	CONVERSION FACTOR	0.1631	
APPEARANCE	Normal			

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/>	TEMP (deg C)	<input checked="" type="checkbox"/>	SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/>	pH (SU)	<input checked="" type="checkbox"/>	TURBIDITY (NTU)	<input checked="" type="checkbox"/>	ORP (mV -NEH)	<input checked="" type="checkbox"/>	DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>	WELL VOL (gal) <small>(recalculates on current water level)</small>
8:50	64.08	130		15.65		148		5.98		11.9		257		3.00		N/A
8:55	64.08	130		15.53		126		5.96		6.5		247		3.50		N/A
9:00	64.08	130		15.49		116		5.93		5.7		249		3.78		N/A
9:05	64.08	130		15.68		110		5.92		5.3		256		4.07		N/A
9:10	64.08	130		15.64		109		5.91		3.2		260		4.30		N/A
9:15	64.08	130		15.86		109		5.92		3.5		265		4.40		N/A
DRAW-DOWN		3.81		(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED											
INITIAL PURGE VOLUME	0.25	(gal)		SAMPLE COLLECTED BY				DATE		TIME		CHLORINE				
TOTAL PURGE VOLUME	1.15	(gal)		LDC				5/4/2016		@ 0920		(mg/l)				
											NA					

QC By: LDC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

### SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR LOW FLOW SAMPLING

PROCEDURE NO	3175.3
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SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-32</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)	2	TOC ELEV (ft msl)	756.56	MIDDLE OF WETTED SCREEN (ft toc)	25.51
WELL DEPTH (ft TOC)	33.01	GS ELEV (ft msl)	753.62	PUMP INTAKE DEPTH (ft TOC)	32.01
SCREEN LENGTH (ft)	15.00	ELEV REF	NAVD 29	SCREEN INTERVAL (ft TOC)	18.01 TO 33.01

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	26055	SAMPLING EQUIPMENT	QED T1200	PURGE METHOD	
		TUBING DIAMETER (in)	1/2 OD	Low Flow	
PUMP CONTROLLER SETTINGS					
PRESSURE	15 (psi)	RECHARGE	7 (sec)	DISCHARGE	8 (sec)

Target 240 mL/min.

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	12.62	WATER COLUMN (ft)	20.39	<i>Well Volume = water column X conversion factor</i> (Conversion factor dependent on well diameter and selected well volume units)	
WATER ELEVATION (ft msl)	743.94	WELL VOLUME (gal)	3.33		
DETECTED ODOR	None	CONVERSION FACTOR	0.1631		
APPEARANCE	Normal				

TIME (hh:mm)	WATER LEVEL (ft)	FLOWRATE (ml/min)	<input checked="" type="checkbox"/> TEMP (deg C)	<input checked="" type="checkbox"/> SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/> pH (SU)	<input checked="" type="checkbox"/> TURBIDITY (NTU)	<input checked="" type="checkbox"/> ORP (mV -NEH)	<input checked="" type="checkbox"/> DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/> WELL VOL (gal) <small>(recalculates on current water level)</small>
10:40	14.62	260	16.62	1598	5.24	3.9	339	5.95	N/A
10:45	14.62	260	16.62	1579	5.24	3.6	337	6.05	N/A
10:50	14.62	260	16.57	1572	5.26	3.2	337	6.33	N/A
DRAW-DOWN		2.00	(ft)	COLLECT SAMPLE - SAMPLE CRITERIA SATISFIED					CHLORINE
INITIAL PURGE VOLUME		0.50	(gal)	SAMPLE COLLECTED BY		DATE	TIME	(mg/l)	
TOTAL PURGE VOLUME		1.20	(gal)	LDC		5/4/2016	@ 1055	NA	

QC By: WLC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	Good Condition
WELL PAD	Good Condition
WELL CASING	Good Condition
WELL TAG	Good Tag

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR NO PURGE SAMPLING

PROCEDURE NO	3175.3
--------------	--------

SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-SW1</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)		TOC ELEV (ft msl)	N/A	MIDDLE OF WETTED SCREEN (ft toc)	
WELL DEPTH (ft TOC)		GS ELEV (ft msl)		PUMP INTAKE DEPTH (ft TOC)	
SCREEN LENGTH (ft)		ELEV REF	NAVD 88	SCREEN INTERVAL (ft TOC)	0.00 TO 0.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#		SAMPLING EQUIPMENT	GRAB	PURGE METHOD	
		TUBING DIAMETER (in)		<b>No Purge</b>	
PUMP CONTROLLER SETTINGS					
PRESSURE	(psi)	RECHARGE	(sec)	DISCHARGE	(sec)

**Surface Water Location**

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	n/a	WATER COLUMN (ft)	<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>		
WATER ELEVATION (ft msl)		WELL VOLUME (gal)			
DETECTED ODOR		CONVERSION FACTOR			
APPEARANCE	Normal				

HYDRASLEEVE LENGTH (inches)	DEPLOYED DEPTH (top) (ft TOC)	DATE DEPLOYED	TEMP (deg C)	SPECIFIC COND. (umho/cm)	pH (SU)	TURBIDITY (NTU)	ORP (mV-NHE)	DISSOLVED OXYGEN (mg/L)	
N/A	N/A	N/A	20.77	573	6.93	6.7	213	8.05	N/A

Deployed Top Weight		Water Column In Screen Above Top Of Hydrasleeve	<b>NO PURGE SAMPLE</b>				CHLORINE (mg/l)
		(ft) = (in)	SAMPLE COLLECTED BY	DATE	TIME		
			HET	5/4/2016	@ 1425	N/A	

QC By: WJC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	
WELL PAD	
WELL CASING	
WELL TAG	

SAMPLING NOTES



# DUKE ENERGY

## GROUNDWATER MONITORING DATA SHEET FOR NO PURGE SAMPLING

PROCEDURE NO	3175.3
--------------	--------

SITE NAME	BELEWS CREEK STEAM STATION	PERMIT #	85-05	SITE ID	N/A
PROJECT NAME	FGD LANDFILL GROUNDWATER	FIELD CREW	LDC, PSP, HET		
SAMPLING DATE(s)	<input checked="" type="checkbox"/> 4-May-2016 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WELL/LOCATION NAME	<b>BC-LEACHATE</b>		

MONITORING WELL INFORMATION					
WELL DIAMETER (in)		TOC ELEV (ft msl)	N/A	MIDDLE OF WETTED SCREEN (ft toc)	
WELL DEPTH (ft TOC)		GS ELEV (ft msl)		PUMP INTAKE DEPTH (ft TOC)	
SCREEN LENGTH (ft)		ELEV REF	NAVD 88	SCREEN INTERVAL (ft TOC)	0.00 TO 0.00

EQUIPMENT INFORMATION					
LEVEL METER SERIAL#	N/A	SAMPLING EQUIPMENT	PERISTALTIC PUMP	PURGE METHOD	
		TUBING DIAMETER (in)		No Purge	
PUMP CONTROLLER SETTINGS					
PRESSURE	N/A (psi)	RECHARGE	N/A (sec)	DISCHARGE	N/A (sec)

SAMPLING INFORMATION					
INITIAL DEPTH TO WATER (ft TOC)	N/A	WATER COLUMN (ft)		<i>Well Volume = water column X conversion factor</i> <i>(Conversion factor dependent on well diameter and selected well volume units)</i>	
WATER ELEVATION (ft msl)		WELL VOLUME (gal)			
DETECTED ODOR		CONVERSION FACTOR			
APPEARANCE	Normal				

HYDRASLEEVE LENGTH (inches)	DEPLOYED DEPTH (top) (ft TOC)	DATE DEPLOYED	<input checked="" type="checkbox"/> TEMP (deg C)	<input checked="" type="checkbox"/> SPECIFIC COND. (umho/cm)	<input checked="" type="checkbox"/> pH (SU)	<input checked="" type="checkbox"/> TURBIDITY (NTU)	<input checked="" type="checkbox"/> ORP (mV-NHE)	<input checked="" type="checkbox"/> DISSOLVED OXYGEN (mg/L)	<input type="checkbox"/>
N/A	N/A	N/A	16.58	2829	6.40	0.8	330	6.66	N/A

Deployed Top Weight		Water Column In Screen Above Top Of Hydrasleeve	<b>NO PURGE SAMPLE</b>				CHLORINE (mg/l)
		(ft) = (in)	SAMPLE COLLECTED BY	DATE	TIME		
			PSP, HET	5/4/2016	@ 1015	N/A	

QC By: XC 5/5/16

Sample preservation verified to pH (units) < 2.0

WELL CONDITION	ADDITIONAL WELL CONDITION NOTES
PROTECTIVE CASING	
WELL PAD	
WELL CASING	
WELL TAG	

SAMPLING NOTES

**NORTH CAROLINA GROUNDWATER SAMPLING SITE CHECKLIST**

**LOCATION / SITE** BELEWS CREEK STEAM STATION - FGD LANDFILL GROUNDWATER MONITORING  
**SITE CONTACT** Melonie Martin, Kimberly Witt, Will Harrison, Keeley McCormick  
**WEATHER** Partly cloudy, slight breeze, 60 to 75 deg F.

**PERMIT #** 85-05

**SAMPLE DATE**  
**FIELD CREW**

May 4, 2016  
 LDC, PSP, HET

PAGE 1 OF 1

	BC-7	BC-20	BC-21	BC-22	BC-23A	BC-25	BC-26	BC-27	BC-28	BC-29	BC-30	BC-31	BC-32	BC-SW1	
<b>ACCESS TO WELLS</b>															
Access cleared into well	SEE NOTE														
Access cleared around well	SEE NOTE														
Tall grass or weeds - needs mowing															
Road washing out / muddy / needs grading															
Fallen tree blocking access															
<b>WELL SECURITY</b>															
Well found locked	YES	N/A													
Well found unlocked															
<b>WELL LOCK CONDITION</b>															
Lock in good condition	YES	N/A													
Lock rusted, difficult to open / needs replacing															
Replaced damaged lock															
<b>WELL CASINGS</b>															
Casing in good condition	YES	N/A													
Damaged casing / still functional															
Damaged casing / repair required															
<b>CONCRETE PADS</b>															
Pad in good condition	YES	N/A													
Minor cracks									YES						
Major cracks / broken / repair required															
Undermined / washing out															
Fire ants around concrete pad															
<b>WELL PROTECTIVE CASINGS</b>															
Casing in good condition	YES	N/A													
Damaged casing / still functional															
Damaged casing / repair required															
Broken hinge on protective lid															
Wasp nest inside protective casing															
Ants inside protective casing															
<b>WELL CAPS</b>															
Well cap in good conditon	YES	N/A													
Damaged / needs replacement															
Replaced damaged well cap															
<b>FLUSH MOUNT WELLS</b>															
Vault in good condition	N/A														
Water inside vault															
Vault bolt holes broken or stripped															
Bolts stripped															
Vault lid cracked or broken															
<b>WELL ID TAGS</b>															
Well tag in good condition	YES	N/A													
Well tag missing															
Well tag damaged / illegible															
Lacks required information - Driller Reg #															
Lacks required information - Completion date															
Lacks required information - Total well depth															
Lacks required information - Depth to screen															
Lacks required information - Non potable tag															

**NOTE:** Grass needed mowing into and around all locations.

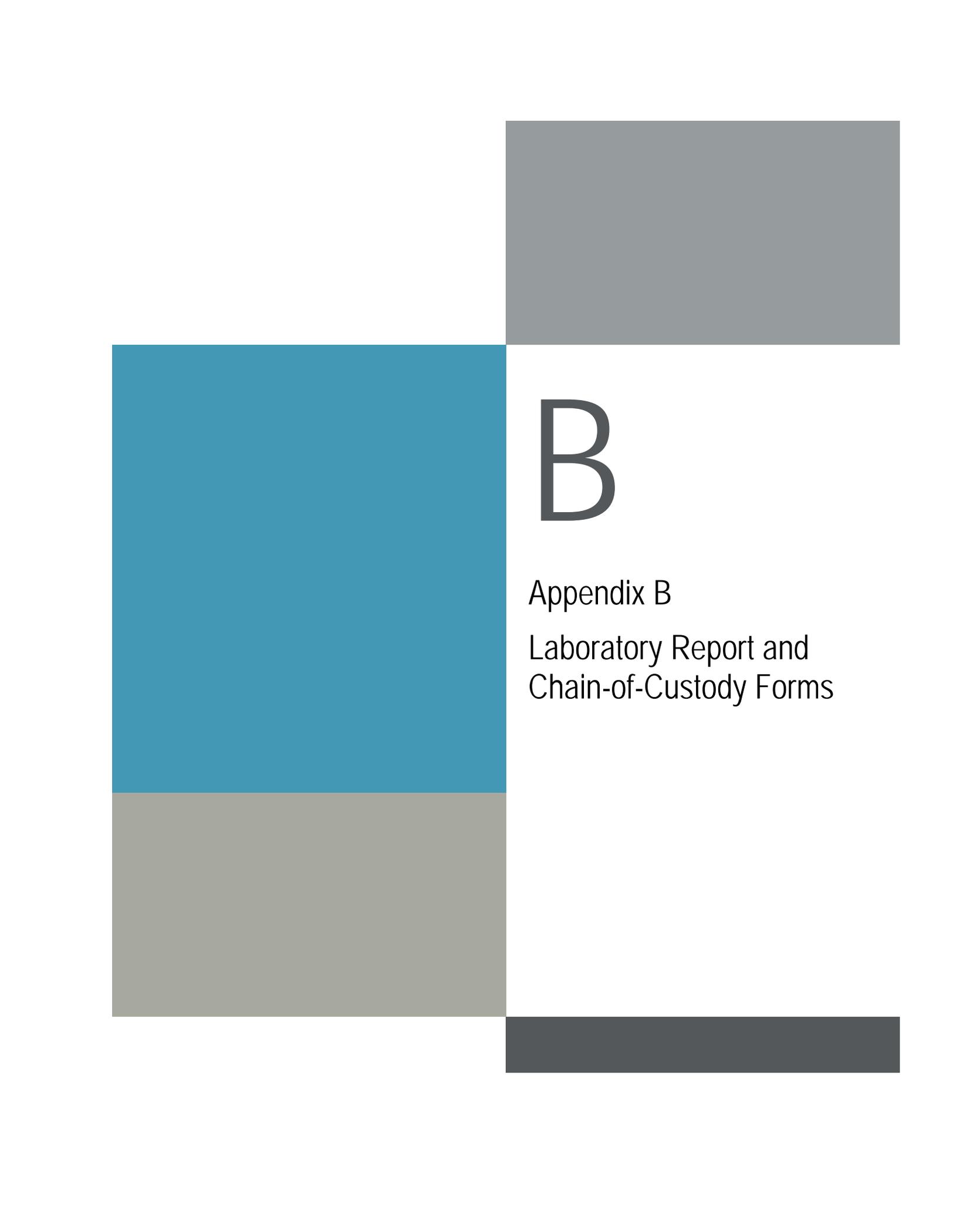
**BELEWS CREEK STEAM STATION  
FGD LANDFILL GROUNDWATER  
GROUNDWATER MONITORING FIELD DATA  
PERMIT # 85-05**

DATE	WELL NO.	WELL DEPTH (feet-toc)	DEPTH TO WATER (feet-toc)	WATER ELEV. (feet)	APPEARANCE	ODOR	Purge Method	AVG * PMP RATE (ml/min)	WELL VOL (gal)	EVAC VOL (gal)	EVAC (yes/no)	TEMP (deg C)	SPECIFIC CONDUCTANCE (umho/cm)	pH (units)	TURBIDITY (NTU)	ORP (mV-NHE)	DO (mg/l)
5/4/2016	BC-7	52.30	35.21	742.59	N/A	N/A	LO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/4/2016	BC-20	24.22	11.72	745.50	Normal	None	LF	210	2.04	0.85	N/A	15.03	1010	5.2	4.6	368	8.54
5/4/2016	BC-21	16.77	9.58	747.11	Normal	None	LF	210	1.17	0.85	N/A	15.51	971	4.8	4.1	355	7.89
5/4/2016	BC-22	13.00	2.87	763.04	Normal	None	C	N/A	1.65	5.25	NO	14.24	427	5.3	4.4	332	4.50
5/4/2016	BC-23A	101.21	80.11	783.68	Normal	None	C	N/A	3.44	7.50	NO	15.09	44	5.7	13.9	292	8.11
5/4/2016	BC-25	26.15	12.90	735.53	Normal	None	LF	232	2.16	1.95	N/A	18.41	1707	5.4	47.6	440	4.42
5/4/2016	BC-26	23.26	14.28	735.04	Normal	None	LF	300	1.46	4.05	N/A	15.63	155	4.8	4.7	477	3.42
5/4/2016	BC-27	38.33	33.21	731.57	Normal	None	LF	162	0.84	1.35	N/A	17.29	193	5.7	2.5	244	1.58
5/4/2016	BC-28	60.20	50.79	767.30	Normal	None	LF	150	1.53	0.65	N/A	16.26	58	5.6	8.4	301	6.95
5/4/2016	BC-29	25.32	17.66	738.54	Normal	None	LF	171	1.25	1.50	N/A	15.33	256	4.9	6.5	413	1.82
5/4/2016	BC-30	34.10	24.69	751.03	Normal	None	LF	198	1.53	3.35	N/A	14.55	66	4.5	22.9	381	7.05
5/4/2016	BC-31	83.30	60.27	756.13	Normal	None	LF	130	3.76	1.15	N/A	15.86	109	5.9	3.5	265	4.40
5/4/2016	BC-32	33.01	12.62	743.94	Normal	None	LF	260	3.33	1.20	N/A	16.57	1572	5.3	3.2	337	6.33
5/4/2016	BC-SW1	0.00	N/A	N/A	Normal	N/A	NP	N/A	N/A	N/A	N/A	20.77	573	6.9	6.7	213	8.05
5/4/2016	BC-LEACHATE	0.00	N/A	N/A	Normal	N/A	NP	N/A	N/A	N/A	N/A	16.58	2829	6.4	0.8	330	6.66

**Purge Methods**

LF = Low Flow  
 LF(M) = Low Flow (Mod.)  
 C = Conventional  
 NP = No Purge  
 EOP = Equip. Only Purge  
 LO = Level Only

\* = Applicable to LF & LF(M) Purging Only



# B

Appendix B

Laboratory Report and  
Chain-of-Custody Forms



# Analytical Laboratory

13339 Hagers Ferry Road  
Huntersville, NC 28078-7929  
McGuire Nuclear Complex - MG03A2  
Phone: 980-875-5245 Fax: 980-875-4349

## Order Summary Report

**Order Number:** J16040356

Project Name: BELEWS - GW FGD LF

Customer Name(s): Chuck Campbell, T. Hunsucker, Ed Sullivan

Customer Address: 3195 Pine Hall Rd  
Mailcode: Belews Steam Station  
Belews Creek, NC 28012

Lab Contact: Peggy Kendall Phone:

Report Authorized By:  
(Signature)

Date: 5/20/2016

Peggy Kendall

### Program Comments:

Please contact the Program Manager (Peggy Kendall) with any questions regarding this report.

### Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted. Subcontracted data included on the Duke Certificate of Analysis is to be used as information only. Certified vendor results can be found in the subcontracted lab final report. Duke Energy Analytical Laboratory subcontracts analyses to other vendor laboratories that have been qualified by Duke Energy to perform these analyses except where noted.

### Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

*Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)*

### Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

**Sample ID's & Descriptions:**

<b>Sample ID</b>	<b>Plant/Station</b>	<b>Collection Date and Time</b>	<b>Collected By</b>	<b>Sample Description</b>
2016010486	BELEWS	04-May-16 12:45 PM	LDC	BC-20
2016010487	BELEWS	04-May-16 12:05 PM	LDC	BC-21
2016010488	BELEWS	04-May-16 11:30 AM	LDC	BC-22
2016010489	BELEWS	04-May-16 8:25 AM	LDC	BC-23A
2016010490	BELEWS	04-May-16 1:35 PM	HET	BC-25
2016010491	BELEWS	04-May-16 12:35 PM	HET	BC-26
2016010492	BELEWS	04-May-16 11:20 AM	HET	BC-27
2016010493	BELEWS	04-May-16 10:05 AM	LDC	BC-28
2016010494	BELEWS	04-May-16 9:45 AM	HET	BC-29
2016010495	BELEWS	04-May-16 8:45 AM	HET	BC-30
2016010496	BELEWS	04-May-16 9:20 AM	LDC	BC-31
2016010497	BELEWS	04-May-16 10:55 AM	LDC	BC-32
2016010498	BELEWS	04-May-16 2:35 PM	HET	SW-1
2016010499	BELEWS	04-May-16 10:15 AM	PSP, HET	LEACHATE
2016010500	BELEWS	04-May-16 2:45 PM	HET	FIELD BLANK
15 Total Samples				

## Technical Validation Review

### Checklist:

- COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).  Yes  No
- All Results are less than the laboratory reporting limits.  Yes  No
- All laboratory QA/QC requirements are acceptable.  Yes  No

### Report Sections Included:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Job Summary Report                            | <input type="checkbox"/> Sub-contracted Laboratory Results                           |
| <input checked="" type="checkbox"/> Sample Identification                         | <input type="checkbox"/> Customer Specific Data Sheets, Reports, & Documentation     |
| <input checked="" type="checkbox"/> Technical Validation of Data Package          | <input type="checkbox"/> Customer Database Entries                                   |
| <input checked="" type="checkbox"/> Analytical Laboratory Certificate of Analysis | <input checked="" type="checkbox"/> Chain of Custody                                 |
| <input type="checkbox"/> Analytical Laboratory QC Report                          | <input checked="" type="checkbox"/> Electronic Data Deliverable (EDD) Sent Separatel |

Reviewed By: Peggy Kendall

Date: 5/20/2016

# Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J16040356

Site: BC-20

Collection Date: 04-May-16 12:45 PM

Sample #: 2016010486

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	5.4	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	4.2	mg/L		0.5	5	EPA 9056A	05/05/2016 16:29	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 9056A	05/05/2016 16:29	BGN9034
Nitrate	11	mg/L		0.5	5	EPA 9056A	05/05/2016 16:29	BGN9034
Nitrate as N	2.4	mg-N/L		0.023	1	EPA 9056A	05/05/2016 16:29	BGN9034
Sulfate	540	mg/L		10	100	EPA 9056A	05/05/2016 16:29	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:07	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.054	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Boron (B)	0.088	mg/L		0.05	1	SW 6010D	05/17/2016 10:27	JJMACKE
Calcium (Ca)	123	mg/L		1	100	SW 6010D	05/17/2016 10:27	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Iron (Fe)	0.064	mg/L		0.01	1	SW 6010D	05/17/2016 10:27	JJMACKE
Magnesium (Mg)	51.5	mg/L		0.05	10	SW 6010D	05/17/2016 10:27	JJMACKE
Manganese (Mn)	0.016	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Nickel (Ni)	0.014	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Potassium (K)	5.98	mg/L		0.1	1	SW 6010D	05/17/2016 10:27	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
Sodium (Na)	24.0	mg/L		0.05	1	SW 6010D	05/17/2016 10:27	JJMACKE
Zinc (Zn)	0.018	mg/L		0.005	1	SW 6010D	05/17/2016 10:27	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:09	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:09	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:09	JAHERMA
Selenium (Se)	3.96	ug/L		1	1	SW 6020B	05/18/2016 16:09	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	820	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

# Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J16040356

Site: BC-21

Collection Date: 04-May-16 12:05 PM

Sample #: 2016010487

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	< 5	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	6.8	mg/L		0.5	5	EPA 9056A	05/05/2016 16:45	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 9056A	05/05/2016 16:45	BGN9034
Nitrate	16	mg/L		0.5	5	EPA 9056A	05/05/2016 16:45	BGN9034
Nitrate as N	3.5	mg-N/L		0.023	1	EPA 9056A	05/05/2016 16:45	BGN9034
Sulfate	500	mg/L		10	100	EPA 9056A	05/05/2016 16:45	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 12:50	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.026	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Boron (B)	0.090	mg/L		0.05	1	SW 6010D	05/17/2016 10:15	JJMACKE
Calcium (Ca)	45.2	mg/L		0.01	1	SW 6010D	05/17/2016 10:15	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Iron (Fe)	0.043	mg/L		0.01	1	SW 6010D	05/17/2016 10:15	JJMACKE
Magnesium (Mg)	93.5	mg/L		0.05	10	SW 6010D	05/17/2016 10:15	JJMACKE
Manganese (Mn)	0.315	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Potassium (K)	4.82	mg/L		0.1	1	SW 6010D	05/17/2016 10:15	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
Sodium (Na)	22.6	mg/L		0.05	1	SW 6010D	05/17/2016 10:15	JJMACKE
Zinc (Zn)	0.010	mg/L		0.005	1	SW 6010D	05/17/2016 10:15	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	4.00	ug/L		1	1	SW 6020B	05/18/2016 16:26	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:26	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:26	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:26	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	780	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

# Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J16040356

Site: BC-22

Collection Date: 04-May-16 11:30 AM

Sample #: 2016010488

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	17	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	4.0	mg/L		0.5	5	EPA 9056A	05/05/2016 13:53	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 9056A	05/05/2016 13:53	BGN9034
Nitrate	5.0	mg/L		0.5	5	EPA 9056A	05/05/2016 13:53	BGN9034
Nitrate as N	1.1	mg-N/L		0.023	1	EPA 9056A	05/05/2016 13:53	BGN9034
Sulfate	160	mg/L		5	50	EPA 9056A	05/05/2016 13:53	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 12:52	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.165	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Boron (B)	0.075	mg/L		0.05	1	SW 6010D	05/17/2016 10:31	JJMACKE
Calcium (Ca)	37.9	mg/L		0.01	1	SW 6010D	05/17/2016 10:31	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Iron (Fe)	0.067	mg/L		0.01	1	SW 6010D	05/17/2016 10:31	JJMACKE
Magnesium (Mg)	16.1	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Manganese (Mn)	0.192	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Potassium (K)	3.15	mg/L		0.1	1	SW 6010D	05/17/2016 10:31	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
Sodium (Na)	10.9	mg/L		0.05	1	SW 6010D	05/17/2016 10:31	JJMACKE
Zinc (Zn)	0.016	mg/L		0.005	1	SW 6010D	05/17/2016 10:31	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:50	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:50	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:50	JAHERMA
Selenium (Se)	1.37	ug/L		1	1	SW 6020B	05/18/2016 16:50	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	290	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-23A

Collection Date: 04-May-16 8:25 AM

Sample #: 2016010489

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	17	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	2.2	mg/L		0.1	1	EPA 9056A	05/05/2016 13:38	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 13:38	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 13:38	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 9056A	05/05/2016 13:38	BGN9034
Sulfate	0.27	mg/L		0.1	1	EPA 9056A	05/05/2016 13:38	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 12:54	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.035	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Boron (B)	0.081	mg/L		0.05	1	SW 6010D	05/17/2016 10:35	JJMACKE
Calcium (Ca)	1.71	mg/L		0.01	1	SW 6010D	05/17/2016 10:35	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Iron (Fe)	0.318	mg/L		0.01	1	SW 6010D	05/17/2016 10:35	JJMACKE
Magnesium (Mg)	0.898	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Manganese (Mn)	0.007	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Potassium (K)	1.54	mg/L		0.1	1	SW 6010D	05/17/2016 10:35	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
Sodium (Na)	6.16	mg/L		0.05	1	SW 6010D	05/17/2016 10:35	JJMACKE
Zinc (Zn)	0.010	mg/L		0.005	1	SW 6010D	05/17/2016 10:35	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:55	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:55	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:55	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 16:55	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	51	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-25

Collection Date: 04-May-16 1:35 PM

Sample #: 2016010490

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	18	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	44	mg/L		1	10	EPA 9056A	05/05/2016 17:00	BGN9034
Fluoride	< 1	mg/L		1	10	EPA 9056A	05/05/2016 17:00	BGN9034
Nitrate	10	mg/L		1	10	EPA 9056A	05/05/2016 17:00	BGN9034
Nitrate as N	2.3	mg-N/L		0.023	1	EPA 9056A	05/05/2016 17:00	BGN9034
Sulfate	1000	mg/L		20	200	EPA 9056A	05/05/2016 17:00	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 12:57	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.069	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Boron (B)	0.109	mg/L		0.05	1	SW 6010D	05/17/2016 10:38	JJMACKE
Calcium (Ca)	240	mg/L		0.1	10	SW 6010D	05/17/2016 10:38	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Iron (Fe)	2.82	mg/L		0.01	1	SW 6010D	05/17/2016 10:38	JJMACKE
Magnesium (Mg)	102	mg/L		0.05	10	SW 6010D	05/17/2016 10:38	JJMACKE
Manganese (Mn)	0.106	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Nickel (Ni)	0.030	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Potassium (K)	8.88	mg/L		0.1	1	SW 6010D	05/17/2016 10:38	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
Sodium (Na)	29.7	mg/L		0.05	1	SW 6010D	05/17/2016 10:38	JJMACKE
Zinc (Zn)	0.018	mg/L		0.005	1	SW 6010D	05/17/2016 10:38	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:01	JAHERMA
Cadmium (Cd)	1.14	ug/L		1	1	SW 6020B	05/18/2016 17:01	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:01	JAHERMA
Selenium (Se)	12.4	ug/L		1	1	SW 6020B	05/18/2016 17:01	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	1600	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-26

Collection Date: 04-May-16 12:35 PM

Sample #: 2016010491

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	< 5	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	19	mg/L		0.5	5	EPA 9056A	05/05/2016 16:13	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 16:13	BGN9034
Nitrate	28	mg/L		0.5	5	EPA 9056A	05/05/2016 16:13	BGN9034
Nitrate as N	6.3	mg-N/L		0.023	1	EPA 9056A	05/05/2016 16:13	BGN9034
Sulfate	14	mg/L		0.5	5	EPA 9056A	05/05/2016 16:13	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:14	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.347	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Boron (B)	0.068	mg/L		0.05	1	SW 6010D	05/17/2016 10:42	JJMACKE
Calcium (Ca)	2.30	mg/L		0.01	1	SW 6010D	05/17/2016 10:42	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Iron (Fe)	0.086	mg/L		0.01	1	SW 6010D	05/17/2016 10:42	JJMACKE
Magnesium (Mg)	7.71	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Manganese (Mn)	0.034	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Nickel (Ni)	0.008	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Potassium (K)	4.43	mg/L		0.1	1	SW 6010D	05/17/2016 10:42	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
Sodium (Na)	10.7	mg/L		0.05	1	SW 6010D	05/17/2016 10:42	JJMACKE
Zinc (Zn)	0.062	mg/L		0.005	1	SW 6010D	05/17/2016 10:42	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:07	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:07	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:07	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:07	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	100	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-27

Collection Date: 04-May-16 11:20 AM

Sample #: 2016010492

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>ALKALINITY (FIXED END POINT 4.5)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	71	mg/L (CaCO <sub>3</sub> )		20	1	SM 2320B	05/06/2016 08:25	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	10	mg/L		0.2	2	EPA 9056A	05/05/2016 15:41	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 15:41	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 15:41	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 9056A	05/05/2016 15:41	BGN9034
Sulfate	3.8	mg/L		0.1	1	EPA 9056A	05/05/2016 15:41	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/13/2016 13:30	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.020	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Boron (B)	0.071	mg/L		0.05	1	SW 6010D	05/17/2016 11:01	JJMACKE
Calcium (Ca)	1.29	mg/L		0.01	1	SW 6010D	05/17/2016 11:01	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Iron (Fe)	34.5	mg/L		0.01	1	SW 6010D	05/17/2016 11:01	JJMACKE
Magnesium (Mg)	4.84	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Manganese (Mn)	1.20	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Potassium (K)	1.64	mg/L		0.1	1	SW 6010D	05/17/2016 11:01	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
Sodium (Na)	6.88	mg/L		0.05	1	SW 6010D	05/17/2016 11:01	JJMACKE
Zinc (Zn)	0.046	mg/L		0.005	1	SW 6010D	05/17/2016 11:01	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	1.56	ug/L		1	1	SW 6020B	05/18/2016 17:13	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:13	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:13	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:13	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	100	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-28

Collection Date: 04-May-16 10:05 AM

Sample #: 2016010493

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>ALKALINITY (FIXED END POINT 4.5)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	22	mg/L (CaCO <sub>3</sub> )		20	1	SM 2320B	05/06/2016 08:25	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	1.7	mg/L		0.1	1	EPA 9056A	05/05/2016 14:55	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 14:55	BGN9034
Nitrate	4.3	mg/L		0.1	1	EPA 9056A	05/05/2016 14:55	BGN9034
Nitrate as N	0.97	mg-N/L		0.023	1	EPA 9056A	05/05/2016 14:55	BGN9034
Sulfate	0.40	mg/L		0.1	1	EPA 9056A	05/05/2016 14:55	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:16	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.032	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Boron (B)	0.074	mg/L		0.05	1	SW 6010D	05/17/2016 11:05	JJMACKE
Calcium (Ca)	4.14	mg/L		0.01	1	SW 6010D	05/17/2016 11:05	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Iron (Fe)	0.344	mg/L		0.01	1	SW 6010D	05/17/2016 11:05	JJMACKE
Magnesium (Mg)	1.38	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Manganese (Mn)	0.010	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Potassium (K)	2.18	mg/L		0.1	1	SW 6010D	05/17/2016 11:05	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
Sodium (Na)	5.10	mg/L		0.05	1	SW 6010D	05/17/2016 11:05	JJMACKE
Zinc (Zn)	0.025	mg/L		0.005	1	SW 6010D	05/17/2016 11:05	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:19	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:19	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:19	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:19	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	70	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-29

Collection Date: 04-May-16 9:45 AM

Sample #: 2016010494

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	7.0	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	3.6	mg/L		0.1	1	EPA 9056A	05/06/2016 09:34	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/06/2016 09:34	BGN9034
Nitrate	1.2	mg/L		0.1	1	EPA 9056A	05/06/2016 09:34	BGN9034
Nitrate as N	0.28	mg-N/L		0.023	1	EPA 9056A	05/06/2016 09:34	BGN9034
Sulfate	100	mg/L		2	20	EPA 9056A	05/06/2016 09:34	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:19	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.079	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Boron (B)	0.076	mg/L		0.05	1	SW 6010D	05/17/2016 11:09	JJMACKE
Calcium (Ca)	4.76	mg/L		0.01	1	SW 6010D	05/17/2016 11:09	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Iron (Fe)	0.328	mg/L		0.01	1	SW 6010D	05/17/2016 11:09	JJMACKE
Magnesium (Mg)	23.5	mg/L		0.05	10	SW 6010D	05/17/2016 11:09	JJMACKE
Manganese (Mn)	0.584	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Potassium (K)	2.38	mg/L		0.1	1	SW 6010D	05/17/2016 11:09	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
Sodium (Na)	4.18	mg/L		0.05	1	SW 6010D	05/17/2016 11:09	JJMACKE
Zinc (Zn)	0.017	mg/L		0.005	1	SW 6010D	05/17/2016 11:09	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:24	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:24	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:24	JAHERMA
Selenium (Se)	1.90	ug/L		1	1	SW 6020B	05/18/2016 17:24	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	170	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-30

Collection Date: 04-May-16 8:45 AM

Sample #: 2016010495

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	19	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	4.4	mg/L		0.1	1	EPA 9056A	05/05/2016 15:26	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 15:26	BGN9034
Nitrate	5.3	mg/L		0.1	1	EPA 9056A	05/05/2016 15:26	BGN9034
Nitrate as N	1.2	mg-N/L		0.023	1	EPA 9056A	05/05/2016 15:26	BGN9034
Sulfate	1.3	mg/L		0.1	1	EPA 9056A	05/05/2016 15:26	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:21	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.023	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Boron (B)	0.077	mg/L		0.05	1	SW 6010D	05/17/2016 11:13	JJMACKE
Calcium (Ca)	3.44	mg/L		0.01	1	SW 6010D	05/17/2016 11:13	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Iron (Fe)	1.01	mg/L		0.01	1	SW 6010D	05/17/2016 11:13	JJMACKE
Magnesium (Mg)	1.67	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Manganese (Mn)	0.024	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Potassium (K)	1.25	mg/L		0.1	1	SW 6010D	05/17/2016 11:13	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
Sodium (Na)	7.88	mg/L		0.05	1	SW 6010D	05/17/2016 11:13	JJMACKE
Zinc (Zn)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:13	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:30	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:30	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:30	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:30	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	74	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-31

Collection Date: 04-May-16 9:20 AM

Sample #: 2016010496

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>ALKALINITY (FIXED END POINT 4.5)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	50	mg/L (CaCO <sub>3</sub> )		20	1	SM 2320B	05/06/2016 08:25	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	1.9	mg/L		0.1	1	EPA 9056A	05/05/2016 18:17	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:17	BGN9034
Nitrate	3.4	mg/L		0.1	1	EPA 9056A	05/05/2016 18:17	BGN9034
Nitrate as N	0.77	mg-N/L		0.023	1	EPA 9056A	05/05/2016 18:17	BGN9034
Sulfate	1.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:17	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:24	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.017	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Boron (B)	0.066	mg/L		0.05	1	SW 6010D	05/17/2016 11:16	JJMACKE
Calcium (Ca)	8.23	mg/L		0.01	1	SW 6010D	05/17/2016 11:16	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Iron (Fe)	0.089	mg/L		0.01	1	SW 6010D	05/17/2016 11:16	JJMACKE
Magnesium (Mg)	4.23	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Manganese (Mn)	0.012	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Potassium (K)	1.68	mg/L		0.1	1	SW 6010D	05/17/2016 11:16	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
Sodium (Na)	8.14	mg/L		0.05	1	SW 6010D	05/17/2016 11:16	JJMACKE
Zinc (Zn)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:16	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:36	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:36	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:36	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:36	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	81	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: BC-32

Collection Date: 04-May-16 10:55 AM

Sample #: 2016010497

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	13	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	2.4	mg/L		0.5	5	EPA 9056A	05/05/2016 20:05	BGN9034
Fluoride	< 0.5	mg/L		0.5	5	EPA 9056A	05/05/2016 20:05	BGN9034
Nitrate	2.7	mg/L		0.5	5	EPA 9056A	05/05/2016 20:05	BGN9034
Nitrate as N	0.60	mg-N/L		0.023	1	EPA 9056A	05/05/2016 20:05	BGN9034
Sulfate	950	mg/L		20	200	EPA 9056A	05/05/2016 20:05	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:26	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.055	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Boron (B)	0.089	mg/L		0.05	1	SW 6010D	05/17/2016 11:20	JJMACKE
Calcium (Ca)	181	mg/L		0.1	10	SW 6010D	05/17/2016 11:20	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Iron (Fe)	0.028	mg/L		0.01	1	SW 6010D	05/17/2016 11:20	JJMACKE
Magnesium (Mg)	118	mg/L		0.05	10	SW 6010D	05/17/2016 11:20	JJMACKE
Manganese (Mn)	0.017	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Nickel (Ni)	0.018	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Potassium (K)	7.23	mg/L		0.1	1	SW 6010D	05/17/2016 11:20	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
Sodium (Na)	29.5	mg/L		0.05	1	SW 6010D	05/17/2016 11:20	JJMACKE
Zinc (Zn)	0.040	mg/L		0.005	1	SW 6010D	05/17/2016 11:20	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:42	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:42	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 17:42	JAHERMA
Selenium (Se)	5.78	ug/L		1	1	SW 6020B	05/18/2016 17:42	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	1400	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: SW-1

Collection Date: 04-May-16 2:35 PM

Sample #: 2016010498

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>ALKALINITY (FIXED END POINT 4.5)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	25	mg/L (CaCO <sub>3</sub> )		20	1	SM 2320B	05/06/2016 08:25	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	0.94	mg/L		0.2	2	EPA 9056A	05/06/2016 09:50	BGN9034
Fluoride	0.22	mg/L		0.2	2	EPA 9056A	05/06/2016 09:50	BGN9034
Nitrate	0.29	mg/L		0.2	2	EPA 9056A	05/06/2016 09:50	BGN9034
Nitrate as N	0.07	mg-N/L		0.023	1	EPA 9056A	05/06/2016 09:50	BGN9034
Sulfate	270	mg/L		5	50	EPA 9056A	05/06/2016 09:50	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:28	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.091	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Boron (B)	0.079	mg/L		0.05	1	SW 6010D	05/17/2016 11:24	JJMACKE
Calcium (Ca)	110	mg/L		0.1	10	SW 6010D	05/17/2016 11:24	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Iron (Fe)	3.09	mg/L		0.01	1	SW 6010D	05/17/2016 11:24	JJMACKE
Magnesium (Mg)	4.99	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Manganese (Mn)	3.57	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Potassium (K)	3.81	mg/L		0.1	1	SW 6010D	05/17/2016 11:24	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
Sodium (Na)	1.46	mg/L		0.05	1	SW 6010D	05/17/2016 11:24	JJMACKE
Zinc (Zn)	0.056	mg/L		0.005	1	SW 6010D	05/17/2016 11:24	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:05	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:05	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:05	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:05	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	430	mg/L		25	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: LEACHATE

Collection Date: 04-May-16 10:15 AM

Sample #: 2016010499

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>ALKALINITY (FIXED END POINT 4.5)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	240	mg/L (CaCO <sub>3</sub> )		20	1	SM 2320B	05/06/2016 08:25	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	100	mg/L		2.5	25	EPA 9056A	05/05/2016 20:20	BGN9034
Fluoride	< 2.5	mg/L		2.5	25	EPA 9056A	05/05/2016 20:20	BGN9034
Nitrate	4.8	mg/L		2.5	25	EPA 9056A	05/05/2016 20:20	BGN9034
Nitrate as N	1.1	mg-N/L		0.023	1	EPA 9056A	05/05/2016 20:20	BGN9034
Sulfate	1600	mg/L		50	500	EPA 9056A	05/05/2016 20:20	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:31	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	0.018	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Boron (B)	6.50	mg/L		0.05	1	SW 6010D	05/17/2016 11:28	JJMACKE
Calcium (Ca)	657	mg/L		0.1	10	SW 6010D	05/17/2016 11:28	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Iron (Fe)	0.073	mg/L		0.01	1	SW 6010D	05/17/2016 11:28	JJMACKE
Magnesium (Mg)	82.3	mg/L		0.05	10	SW 6010D	05/17/2016 11:28	JJMACKE
Manganese (Mn)	7.65	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Potassium (K)	8.18	mg/L		0.1	1	SW 6010D	05/17/2016 11:28	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
Sodium (Na)	6.76	mg/L		0.05	1	SW 6010D	05/17/2016 11:28	JJMACKE
Zinc (Zn)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:28	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 10	ug/L		10	10	SW 6020B	05/18/2016 18:11	JAHERMA
Cadmium (Cd)	< 10	ug/L		10	10	SW 6020B	05/18/2016 18:11	JAHERMA
Lead (Pb)	< 10	ug/L		10	10	SW 6020B	05/18/2016 18:11	JAHERMA
Selenium (Se)	2250	ug/L		10	10	SW 6020B	05/18/2016 18:11	JAHERMA
<b><u>TOTAL DISSOLVED SOLIDS</u></b>								
TDS	2200	mg/L		250	1	SM2540C	05/06/2016 15:23	CJELLIO

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Order # J16040356

Site: FIELD BLANK

Collection Date: 04-May-16 2:45 PM

Sample #: 2016010500

Matrix: GW\_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
<b><u>LOW LEVEL ALKALINITY (FIXED END POINT)</u></b>								
Alkalinity (mg/L CaCO <sub>3</sub> )	< 5	mg/L (CaCO <sub>3</sub> )		5	1	SM 2320B	05/07/2016 08:28	CJELLIO
<b><u>INORGANIC IONS BY IC</u></b>								
Chloride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:02	BGN9034
Fluoride	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:02	BGN9034
Nitrate	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:02	BGN9034
Nitrate as N	< 0.023	mg-N/L		0.023	1	EPA 9056A	05/05/2016 18:02	BGN9034
Sulfate	< 0.1	mg/L		0.1	1	EPA 9056A	05/05/2016 18:02	BGN9034
<b><u>MERCURY (COLD VAPOR) IN WATER</u></b>								
Mercury (Hg)	< 0.05	ug/L		0.05	1	EPA 7470A	05/09/2016 13:33	DMFRANC
<b><u>TOTAL RECOVERABLE METALS BY ICP</u></b>								
Barium (Ba)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Boron (B)	0.070	mg/L		0.05	1	SW 6010D	05/17/2016 11:32	JJMACKE
Calcium (Ca)	0.185	mg/L		0.01	1	SW 6010D	05/17/2016 11:32	JJMACKE
Chromium (Cr)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Copper (Cu)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Iron (Fe)	< 0.01	mg/L		0.01	1	SW 6010D	05/17/2016 11:32	JJMACKE
Magnesium (Mg)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Manganese (Mn)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Nickel (Ni)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Potassium (K)	< 0.1	mg/L		0.1	1	SW 6010D	05/17/2016 11:32	JJMACKE
Silver (Ag)	< 0.005	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
Sodium (Na)	0.084	mg/L		0.05	1	SW 6010D	05/17/2016 11:32	JJMACKE
Zinc (Zn)	0.018	mg/L		0.005	1	SW 6010D	05/17/2016 11:32	JJMACKE
<b><u>TOTAL RECOVERABLE METALS BY ICP-MS</u></b>								
Arsenic (As)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:17	JAHERMA
Cadmium (Cd)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:17	JAHERMA
Lead (Pb)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:17	JAHERMA
Selenium (Se)	< 1	ug/L		1	1	SW 6020B	05/18/2016 18:17	JAHERMA

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Order # J16040356

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## Level II QC Summary

Q16050146 ALK\_FIX4.5 ALKALINITY (FIXED END POINT 4.5)

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### Duplicate # 1

Parent Sample: J16040356 -- 2016010492

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		71.4	mg/L (CaCO3)	1	0.389	-

### Duplicate # 2

Parent Sample: J16050052 -- 2016012396

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		24.2	mg/L (CaCO3)	1	0.182	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO3)		46.8	mg/L (CaCO3)	1	44.3	106	80	120	-

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**Order # J16040356**

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## Level II QC Summary

**Q16050149 ALK\_LL\_Fix LOW LEVEL ALKALINITY (FIXED END POINT)**

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### Duplicate # 1

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>		<u>RPD</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO <sub>3</sub> )		5.53	mg/L (CaCO <sub>3</sub> )	1		2.43	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Alkalinity (mg/L CaCO <sub>3</sub> )		10.1	mg/L (CaCO <sub>3</sub> )	1	11.08	91.4	80	120	-

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Order # J16040356

## Level II QC Summary

Q16050092 Dionex INORGANIC IONS BY IC

### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Chloride	0.0448	0.0448	mg/L	1	0.1	< 1/2 RDL	-
Fluoride	0.037	0.037	mg/L	1	0.1	< 1/2 RDL	-
Nitrate	0.0355	0.0355	mg/L	1	0.1	< 1/2 RDL	-
Sulfate	0.0221	0.0221	mg/L	1	0.1	< 1/2 RDL	-

### IS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	5.12	5.12	mg/L	1	5	101	80	120	-
Fluoride	5.2	5.2	mg/L	1	5	104	80	120	-
Nitrate	5.13	5.13	mg/L	1	5	101	80	120	-
Sulfate	7.59	7.59	mg/L	1	5	101	80	120	-

### ISD # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Chloride	5.12	5.12	mg/L	1	5	101	80	120	0.158	-
Fluoride	5.19	5.19	mg/L	1	5	103	80	120	0.271	-
Nitrate	5.13	5.13	mg/L	1	5	101	80	120	0.0277	-
Sulfate	7.58	7.58	mg/L	1	5	101	80	120	0.113	-

### IS # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	6.98	6.98	mg/L	1	5	101	80	120	-
Fluoride	5.47	5.47	mg/L	1	5	107	80	120	-
Nitrate	8.56	8.56	mg/L	1	5	103	80	120	-
Sulfate	6.29	6.29	mg/L	1	5	103	80	120	-

### ISD # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Chloride	6.93	6.93	mg/L	1	5	100	80	120	0.913	-
Fluoride	5.46	5.46	mg/L	1	5	107	80	120	0.257	-
Nitrate	8.55	8.55	mg/L	1	5	103	80	120	0.219	-
Sulfate	6.3	6.3	mg/L	1	5	103	80	120	0.175	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Chloride	5	5	mg/L	1	5	100	80	120	-
Fluoride	5.19	5.19	mg/L	1	5	104	80	120	-
Nitrate	5.01	5.01	mg/L	1	5	100	80	120	-
Sulfate	5.01	5.01	mg/L	1	5	100	80	120	-

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Order # J16040356

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## Level II QC Summary

Q16050170 HG 7470 MERCURY (COLD VAPOR) IN WATER

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### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	0.006	0.006	ug/L	1	0.05	< 1/2 RDL	-

### Blank # 2

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	-0.01	-0.01	ug/L	1	0.05	< 1/2 RDL	-

### IS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	0.802	40.1	ug/L	50	50	82.7	75	125	-

### ISD # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Mercury (Hg)	0.789	39.5	ug/L	50	50	81.4			1.59	-

### MS # 1

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	0.95	0.95	ug/L	1	1	96.6	75	125	-

### MSD # 1

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Mercury (Hg)	0.95	0.95	ug/L	1	1	96.6	75	125	0	-

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Order # J16040356

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## Level II QC Summary

Q16050291 HG 7470 MERCURY (COLD VAPOR) IN WATER

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### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Mercury (Hg)	0.005	0.005	ug/L	1	0.05	< 1/2 RDL	-

### IS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	0.918	91.8	ug/L	100	100	94.8	75	125	-

### ISD # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Mercury (Hg)	0.926	92.6	ug/L	100	100	95.6			0.788	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Mercury (Hg)	2.01	2.01	ug/L	1	2	100	85	115	-

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Order # J16040356

## Level II QC Summary

Q16050309 ICP\_TRM TOTAL RECOVERABLE METALS BY ICP

### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Barium (Ba)	-0.000028	-0.000028	mg/L	1	0.005	< 1/2 RDL	-
Boron (B)	0.00205	0.00205	mg/L	1	0.05	< 1/2 RDL	-
Calcium (Ca)	0.000731	0.000731	mg/L	1	0.01	< 1/2 RDL	-
Chromium (Cr)	-0.000143	-0.000143	mg/L	1	0.005	< 1/2 RDL	-
Copper (Cu)	0.000589	0.000589	mg/L	1	0.005	< 1/2 RDL	-
Iron (Fe)	-0.000004	-0.000004	mg/L	1	0.01	< 1/2 RDL	-
Magnesium (Mg)	0.000036	0.000036	mg/L	1	0.005	< 1/2 RDL	-
Manganese (Mn)	0.000099	0.000099	mg/L	1	0.005	< 1/2 RDL	-
Nickel (Ni)	-0.00173	-0.00173	mg/L	1	0.005	< 1/2 RDL	-
Potassium (K)	-0.00643	-0.00643	mg/L	1	0.1	< 1/2 RDL	-
Silver (Ag)	0.000136	0.000136	mg/L	1	0.005	< 1/2 RDL	-
Sodium (Na)	-0.00345	-0.00345	mg/L	1	0.05	< 1/2 RDL	-
Zinc (Zn)	-0.000732	-0.000732	mg/L	1	0.005	< 1/2 RDL	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Barium (Ba)	5.11	5.11	mg/L	1	5	102	80	120	-
Boron (B)	5.09	5.09	mg/L	1	5	102	80	120	-
Calcium (Ca)	4.92	4.92	mg/L	1	5	98.3	80	120	-
Chromium (Cr)	5	5	mg/L	1	5	100	80	120	-
Copper (Cu)	5.01	5.01	mg/L	1	5	100	80	120	-
Iron (Fe)	4.95	4.95	mg/L	1	5	99.1	80	120	-
Magnesium (Mg)	5.15	5.15	mg/L	1	5	103	80	120	-
Manganese (Mn)	5.19	5.19	mg/L	1	5	104	80	120	-
Nickel (Ni)	4.96	4.96	mg/L	1	5	99.3	80	120	-
Potassium (K)	5.06	5.06	mg/L	1	5	101	80	120	-
Silver (Ag)	0.518	0.518	mg/L	1	0.5	104	80	120	-
Sodium (Na)	5.03	5.03	mg/L	1	5	101	80	120	-
Zinc (Zn)	5.11	5.11	mg/L	1	5	102	80	120	-

### MS # 1

Parent Sample: J16040356 -- 2016010487

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Barium (Ba)	5.13	5.13	mg/L	1	5	102	75	125	-
Boron (B)	5.21	5.21	mg/L	1	5	102	75	125	-
Calcium (Ca)	49.8	49.8	mg/L	1	5	93.2	75	125	-
Chromium (Cr)	4.97	4.97	mg/L	1	5	99.5	75	125	-
Copper (Cu)	4.99	4.99	mg/L	1	5	99.8	75	125	-
Iron (Fe)	5.04	5.04	mg/L	1	5	100	75	125	-
Magnesium (Mg)	9.78	97.8	mg/L	10	5	87.8	75	125	-
Manganese (Mn)	5.45	5.45	mg/L	1	5	103	75	125	-

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Order # J16040356

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## Level II QC Summary

Q16050309 ICP\_TRM TOTAL RECOVERABLE METALS BY ICP

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### MS # 1

Parent Sample: J16040356 -- 2016010487

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Nickel (Ni)	4.84	4.84	mg/L	1	5	96.7	75	125	-
Potassium (K)	9.88	9.88	mg/L	1	5	101	75	125	-
Silver (Ag)	0.505	0.505	mg/L	1	0.5	101	75	125	-
Sodium (Na)	27.9	27.9	mg/L	1	5	106	75	125	-
Zinc (Zn)	4.94	4.94	mg/L	1	5	98.6	75	125	-

### MSD # 1

Parent Sample: J16040356 -- 2016010487

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Barium (Ba)	5.13	5.13	mg/L	1	5	102	75	125	0.0392	-
Boron (B)	5.2	5.2	mg/L	1	5	102	75	125	0.156	-
Calcium (Ca)	49.7	49.7	mg/L	1	5	90.9	75	125	2.54	-
Chromium (Cr)	4.99	4.99	mg/L	1	5	99.8	75	125	0.341	-
Copper (Cu)	5	5	mg/L	1	5	100	75	125	0.28	-
Iron (Fe)	5.05	5.05	mg/L	1	5	100	75	125	0.12	-
Magnesium (Mg)	9.8	98	mg/L	10	5	90.4	75	125	2.95	-
Manganese (Mn)	5.48	5.48	mg/L	1	5	103	75	125	0.602	-
Nickel (Ni)	4.85	4.85	mg/L	1	5	97	75	125	0.268	-
Potassium (K)	9.89	9.89	mg/L	1	5	101	75	125	0.158	-
Silver (Ag)	0.502	0.502	mg/L	1	0.5	101	75	125	0.447	-
Sodium (Na)	27.8	27.8	mg/L	1	5	104	75	125	1.77	-
Zinc (Zn)	4.97	4.97	mg/L	1	5	99.2	75	125	0.647	-

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## Level II QC Summary

Q16050315 IMS\_TRM TOTAL RECOVERABLE METALS BY ICP-MS

### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
Arsenic (As)	0.0159	0.0159	ug/L	1	1	< 1/2 RDL	-
Cadmium (Cd)	0.0018	0.0018	ug/L	1	1	< 1/2 RDL	-
Lead (Pb)	-0.0021	-0.0021	ug/L	1	1	< 1/2 RDL	-
Selenium (Se)	-0.0092	-0.0092	ug/L	1	1	< 1/2 RDL	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Arsenic (As)	51.6	51.6	ug/L	1	50	103	80	120	-
Cadmium (Cd)	51.3	51.3	ug/L	1	50	103	80	120	-
Lead (Pb)	51	51	ug/L	1	50	102	80	120	-
Selenium (Se)	50.9	50.9	ug/L	1	50	102	80	120	-

### MS # 1

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
Arsenic (As)	52.4	52.4	ug/L	1	50	105	80	120	-
Arsenic (As)	52.4	52.4	ug/L	1	50	105	75	125	-
Cadmium (Cd)	51	51	ug/L	1	50	100	75	125	-
Cadmium (Cd)	51	51	ug/L	1	50	100	80	120	-
Lead (Pb)	50.6	50.6	ug/L	1	50	101	80	120	-
Lead (Pb)	50.6	50.6	ug/L	1	50	101	75	125	-
Selenium (Se)	53.6	53.6	ug/L	1	50	99.2	75	125	-
Selenium (Se)	53.6	53.6	ug/L	1	50	99.2	80	120	-

### MSD # 1

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>RPD</u>	<u>Qualifier</u>
Arsenic (As)	52.8	52.8	ug/L	1	50	105	80	120	0.628	-
Arsenic (As)	52.8	52.8	ug/L	1	50	105	70	130	0.628	-
Cadmium (Cd)	51.1	51.1	ug/L	1	50	100	80	120	0.169	-
Cadmium (Cd)	51.1	51.1	ug/L	1	50	100	70	130	0.169	-
Lead (Pb)	50.5	50.5	ug/L	1	50	101	80	120	0.365	-
Lead (Pb)	50.5	50.5	ug/L	1	50	101	70	130	0.365	-
Selenium (Se)	53.1	53.1	ug/L	1	50	98.3	70	130	0.938	-
Selenium (Se)	53.1	53.1	ug/L	1	50	98.3	80	120	0.938	-

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Order # J16040356

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## Level II QC Summary

Q16050131 TDS TOTAL DISSOLVED SOLIDS

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### Blank # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RDL</u>	<u>Relative Concentration</u>	<u>Qualifier</u>
TDS		0	mg/L	1	25	< 1/2 RDL	-

### Duplicate # 1

Parent Sample: J16040326 -- 2016010381

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
TDS		125	mg/L	1	0.803	-

### Duplicate # 2

Parent Sample: J16040356 -- 2016010486

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>RPD</u>	<u>Qualifier</u>
TDS		831	mg/L	1	0.725	-

### LCS # 1

<u>Parameter</u>	<u>Measured</u>	<u>Final</u>	<u>Units:</u>	<u>Dil</u>	<u>Spike</u>	<u>% Recovery</u>	<u>LCL</u>	<u>UCL</u>	<u>Qualifier</u>
TDS		97	mg/L	1	100	97	90	110	-



## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

**Duke Energy Analytical Laboratories**  
 Mail Code MG03A2 (Building 7405)  
 13339 Hagers Ferry Rd  
 Huntersville, N. C. 28078  
 (980) 875-5245  
 Fax: (980) 875-5038

Analytical Laboratory Use Only			
LIMS #	<b>J16040356</b>	MATRIX: GW_RCRA	Samples Originating From
Logged By	<i>aus</i>	Date & Time	<i>5-5-16 716</i>
Vendor:		Cooler Temp (C)	<i>1.4</i>
PO #		Preserv.: 1=HCL 2=H <sub>2</sub> SO <sub>4</sub> 3=HNO <sub>3</sub> 4=Ice 5=None	<i>3</i>
MR #		Volume	<i>4</i>
SAMPLE PROGRAM Ground Water <input checked="" type="checkbox"/> NPDES Drinking Water <input type="checkbox"/> UST RCRA Waste <input type="checkbox"/>			
			<sup>19</sup> Page <u>1</u> of <u>1</u> <b>DISTRIBUTION ORIGINAL to LAB, COPY to CLIENT</b>  Revised: 12/4/2014

1) Project Name: <b>BELEWS CREEK FGD LANDFILL PERMIT # 85-05</b>		2) Phone No: 980-875-5257	
3) Client <b>CHUCK CAMPBELL, TIM HUNSUCKER, ED SULLIVIAN</b>		4) Fax No: 980-875-4349	
5) Business Unit: 20003	6) Process: BENVWS	7) Resp. To: BC00	
8) Task ID:	9) Activity ID:	10) Mail Code: MGO3A3	

LAB USE ONLY		Collection Information			TESTS	Grab	(Metals Prep - TRM) (ICP-EPA-200.7) Ag, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Zn (13) / Hg (EPA 245.1) (1) / (MS-EPA-200.8) As, Cd, Pb, Se (4)	NO <sub>3</sub> -N, SO <sub>4</sub> , Cl, F - (IC) and F <sub>alk</sub> (4.5)	TDS	Total # of Containers
Lab ID	Sample Description or ID	Date	Time	Signature						
2016010486	BC-20	5/4/2016	1245	VC	6	X	1	1	1	3
2016010487	BC-21	5/4/16	1205	VC	6	X	1	1	1	3
2016010488	BC-22	5/4/16	1130	VC	6	X	1	1	1	3
2016010489	BC-23A	5/4/16	0825	VC	6	X	1	1	1	3
2016010490	BC-25	5/4/2016	1335	HET	6	X	1	1	1	3
2016010491	BC-26	5/4/2016	1235	HET	6	X	1	1	1	3
2016010492	BC-27	5/4/2016	1126	HET	6	X	1	1	1	3
2016010493	BC-28	5/4/16	1005	VC	6	X	1	1	1	3
2016010494	BC-29	5/4/2016	0945	HET	6	X	1	1	1	3
2016010495	BC-30	5/4/2016	0845	HET	6	X	1	1	1	3
2016010496	BC-31	5/4/16	0920	VC	6	X	1	1	1	3
2016010497	BC-32	5/4/16	1055	VC	6	X	1	1	1	3
2016010498	SW-1	5/4/16	1435	HET	6	X	1	1	1	3
2016010499	LEACHATE	5/4/2016	1015	HET, PSD	6	X	1	1	1	3
2016010500	FIELD BLANK	5/4/2016	1445	HET	5	X	1	1		2

**Customer to sign & date below**

21) Relinquished By <i>Reed Powell</i>	Date/Time <i>5/5/16 0700</i>	Accepted By: <i>Allyn Amawley</i>	Date/Time <i>5-5-16 700</i>
21) Relinquished By	Date/Time	Accepted By:	Date/Time
21) Relinquished By	Date/Time	Accepted By:	Date/Time
23) Seal/Locked By	Date/Time	Sealed/Lock Opened By	Date/Time
24) Comments: <b>Regulatory Agency : NCDENR/DWM -SW Section - State EDD Format Required / Permit # 85-05</b> <b>Use indicated or comparable analytical methods</b>			

Customer, important please indicate desired turnaround

<sup>22</sup> Requested Turnaround <i>5-19-16</i>
14 Days <input type="checkbox"/>
*7 Days <input type="checkbox"/>
*48 Hr <input type="checkbox"/>
*Other <input type="checkbox"/> * Add. Cost Will Apply