526 South Church Street
Charlotte, NC 28202

Mailing Address:
PO Box 1006
Mail Code EC13K
Charlotte, NC 28201-1006

704 382 4761

704 382 6240 fax

March 27, 2013

Ms. Elizabeth Werner
North Carolina Department of Environment and Natural Resources
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

Subject: Semi-annual Leachate Sampling Results
Duke Energy Carolinas, LLC
Allen Steam Station
Retired Ash Basin (RAB) Ash Landfill, Phase I, Cells 1 and 2, Permit #36-12

Dear Ms. Werner:

In accordance with the landfill *Operations Plan*, Duke Energy is providing the results of semi-annual leachate sampling for the Allen Retired Ash Basin (RAB) Ash Landfill located in Belmont, North Carolina.

On March 4, 2013, leachate samples were collected from the leachate collection system. The samples were collected by Duke Energy personnel. A summary of sampling results can be found in Table 1. As noted in the table, 15 NCAC 2L .0202 standards are provided for reference only. The parameters tested are not bound by state groundwater or surface water standards. The leachate is conveyed to the station's ash impoundment, which discharges via a NPDES permitted outfall. All laboratory analytical and field results are provided as Attachments 1 and 2, respectively.

Duke Energy personnel sample landfill leachate at Allen Steam Station's RAB Ash Landfill semi-annually during March and September. The next landfill leachate sampling event will occur during September 2013 with documentation to follow.

If you have any questions or concerns, please contact me at 704-382-4761 or at Sean.DeNeale@duke-energy.com

Sincerely,

Sean DeNeale

Sean DeNeale, Engineer I
Environmental Services

Cc: Mr. Don Scruggs – Allen Steam Station
Mrs. Kimberlee Hutchinson – Duke Energy Corporation

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

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):

Duke Energy, Inc.

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

Name: Sean DeNeale Phone: (704) 382-4761

E-mail: Sean.DeNeale@duke-energy.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Retired Ash Basin (RAB) Ash Landfill Duke Energy Allen Steam Station	253 Plant Allen Rd. Belmont, NC 28012	36-12	.0500	March 4, 2013

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
☐ Groundwater monitoring data from private water supply wells
☒ Leachate monitoring data
☐ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

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.

Kimberlee Hutchinson, PE — Engineer — (980) 373-2779

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

Signature — 03/27/2013 Date — Affix NC Licensed/Professional Geologist Seal

NORTH CAROLINA PROFESSIONAL SEAL 035728 ENGINEER KIMBERLEE W. HUTCHINSON

3/27/2013

Duke Energy Corporation, Mail Code EC13K, P.O. Box 1006, Charlotte, NC 28201-1006

Facility Representative Address

#F-0566

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

Revised 6/2009

Table 1
Allen Steam Station
Retired Ash Basin (RAB) Ash Landfill (Permit No. 36-12)
Leachate Analytical Data

	15A NCAC 2L .0202 Standard	Analytical Result (ug/L)	
		03/04/2013	
Constituent	(ug/L)	Cell 1	Cell 2
Arsenic	10	464	39.9
Barium	700	42	21
Boron	700	26,100	839
Cadmium	2	< 10	< 10
Chloride	250 mg/L	30 mg/L	3.8 mg/L
Chromium	10	< 5	< 5
Copper	1 mg/L	0.190 mg/L	0.046 mg/L
Fluoride	2 mg/L	3.4 mg/L	1 mg/L
Iron	300	128	139
Lead	15	< 10	< 10
Manganese	50	14,000	4,950
Mercury	1	< 0.05	< 0.05
Nickel	100	622	66
Nitrate	10 mg/L	43 mg/L	7.5 mg/L
pH	6.5-8.5	3.87	3.78
Selenium	20	1,980	194
Silver	20	< 5	< 5
Sulfate	250 mg/L	1,700 mg/L	310 mg/L
Temperature (°C)	n/a	16.17	13.98
TDS	500 mg/L	2,700 mg/L	440 mg/L
Zinc	1 mg/L	0.767 mg/L	0.097 mg/L

NOTE: 15A NCAC 2L .0202 Standards are provided only for reference. Analytical results are for landfill leachate, which is **NOT** bound by state groundwater or surface water standards. Landfill leachate is conveyed to the station's ash impoundment, which discharges via a NPDES permitted outfall.

Attachment 1

Allen Retired Ash Basin (RAB) Ash Landfill

Semi-Annual Monitoring Event

Leachate Analytical Results

March 4, 2013

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:	**J13020436**
Project Name:	GW LEACHATE
Customer Name(s):	Chuck Campbell,S. DeNeale
Customer Address:	253 Plant Allen Road Belmont, NC 28012
Lab Contact:	Jason C Perkins Phone: 980-875-5348
Report Authorized By: (Signature)	Jason C Perkins Digitally signed by jay perkins DN: cn=jay perkins, o=Analytical Lab, ou, email=jay.perkins@duke energy.com, c=US Date: 2013.03.19 10:38:03 -04'00' **Date:** 3/18/2013

Program Comments:

Please contact the Program Manager (Jason C Perkins) 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:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2013004578	ALLEN	04-Mar-13 12:40 PM	LDC	LEACHATE LCS-CELL 1
2013004579	ALLEN	04-Mar-13 12:20 PM	LDC	LEACHATE LCS-CELL 2
2013004580	ALLEN	04-Mar-13 2:10 PM	LDC	FIELD BLANK

3 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:

- ☑ Job Summary Report
- ☑ Sample Identification
- ☑ Technical Validation of Data Package
- ☑ Analytical Laboratory Certificate of Analysis
- ☐ Analytical Laboratory QC Report
- ☐ Sub-contracted Laboratory Results
- ☐ Customer Specific Data Sheets, Reports, & Documentation
- ☐ Customer Database Entries
- ☑ Chain of Custody
- ☑ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: DBA Account Date: 3/18/2013

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13020436

Site: LEACHATE LCS-CELL 1 **Sample #: 2013004578**

Collection Date: 04-Mar-13 12:40 PM Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
INORGANIC IONS BY IC								
Chloride	**30**	mg/L		1	10	EPA 300.0	03/06/2013 00:23	JAHERMA
Fluoride	**3.4**	mg/L		1	10	EPA 300.0	03/06/2013 00:23	JAHERMA
Nitrate	**43**	mg/L		1	10	EPA 300.0	03/06/2013 00:23	JAHERMA
Nitrate as N	**9.6**	mg-N/L		0.023	1	EPA 300.0	03/06/2013 00:23	JAHERMA
Sulfate	**1700**	mg/L		50	500	EPA 300.0	03/06/2013 00:23	JAHERMA
MERCURY (COLD VAPOR) IN WATER								
Mercury (Hg)	**< 0.05**	ug/L		0.05	1	EPA 245.1	03/07/2013 13:04	AGIBBS
TOTAL EXTRACTABLE METALS BY ICP								
Barium (Ba)	**0.042**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Boron (B)	**26.1**	mg/L		5	10	EPA 200.7	03/06/2013 11:25	MHH7131
Chromium (Cr)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Copper (Cu)	**0.190**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Iron (Fe)	**0.128**	mg/L		0.01	1	EPA 200.7	03/06/2013 11:25	MHH7131
Manganese (Mn)	**14.0**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Nickel (Ni)	**0.622**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Silver (Ag)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
Zinc (Zn)	**0.767**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:25	MHH7131
TOTAL EXTRACTABLE METALS BY ICP-MS								
Arsenic (As)	**464**	ug/L		10	10	EPA 200.8	03/13/2013 14:32	DJSULL1
Cadmium (Cd)	**< 10**	ug/L		10	10	EPA 200.8	03/13/2013 14:32	DJSULL1
Lead (Pb)	**< 10**	ug/L		10	10	EPA 200.8	03/13/2013 14:32	DJSULL1
Selenium (Se)	**1980**	ug/L		10	10	EPA 200.8	03/13/2013 14:32	DJSULL1
TOTAL DISSOLVED SOLIDS								
TDS	**2700**	mg/L		40	1	SM2540C	03/05/2013 15:35	SWILLI3

Site: LEACHATE LCS-CELL 2 **Sample #: 2013004579**

Collection Date: 04-Mar-13 12:20 PM Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
INORGANIC IONS BY IC								
Chloride	**3.8**	mg/L		0.1	1	EPA 300.0	03/06/2013 16:37	JAHERMA
Fluoride	**1.0**	mg/L		0.1	1	EPA 300.0	03/06/2013 16:37	JAHERMA
Nitrate	**7.5**	mg/L		0.1	1	EPA 300.0	03/06/2013 16:37	JAHERMA
Nitrate as N	**1.7**	mg-N/L		0.023	1	EPA 300.0	03/06/2013 16:37	JAHERMA
Sulfate	**310**	mg/L		10	100	EPA 300.0	03/06/2013 16:37	JAHERMA

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13020436

Site: LEACHATE LCS-CELL 2 **Sample #: 2013004579**

Collection Date: 04-Mar-13 12:20 PM Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
MERCURY (COLD VAPOR) IN WATER								
Mercury (Hg)	**< 0.05**	ug/L		0.05	1	EPA 245.1	03/07/2013 13:06	AGIBBS
TOTAL EXTRACTABLE METALS BY ICP								
Barium (Ba)	**0.021**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Boron (B)	**0.839**	mg/L		0.05	1	EPA 200.7	03/06/2013 11:29	MHH7131
Chromium (Cr)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Copper (Cu)	**0.046**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Iron (Fe)	**0.139**	mg/L		0.01	1	EPA 200.7	03/06/2013 11:29	MHH7131
Manganese (Mn)	**4.95**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Nickel (Ni)	**0.066**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Silver (Ag)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
Zinc (Zn)	**0.097**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:29	MHH7131
TOTAL EXTRACTABLE METALS BY ICP-MS								
Arsenic (As)	**39.9**	ug/L		10	10	EPA 200.8	03/13/2013 14:36	DJSULL1
Cadmium (Cd)	**< 10**	ug/L		10	10	EPA 200.8	03/13/2013 14:36	DJSULL1
Lead (Pb)	**< 10**	ug/L		10	10	EPA 200.8	03/13/2013 14:36	DJSULL1
Selenium (Se)	**194**	ug/L		10	10	EPA 200.8	03/13/2013 14:36	DJSULL1
TOTAL DISSOLVED SOLIDS								
TDS	**440**	mg/L		40	1	SM2540C	03/05/2013 15:35	SWILLI3

Site: FIELD BLANK **Sample #: 2013004580**

Collection Date: 04-Mar-13 2:10 PM Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
INORGANIC IONS BY IC								
Chloride	**< 0.1**	mg/L		0.1	1	EPA 300.0	03/05/2013 20:16	JAHERMA
Fluoride	**< 0.1**	mg/L		0.1	1	EPA 300.0	03/05/2013 20:16	JAHERMA
Nitrate	**< 0.1**	mg/L		0.1	1	EPA 300.0	03/05/2013 20:16	JAHERMA
Nitrate as N	**< 0.023**	mg-N/L		0.023	1	EPA 300.0	03/05/2013 20:16	JAHERMA
Sulfate	**< 0.1**	mg/L		0.1	1	EPA 300.0	03/05/2013 20:16	JAHERMA
MERCURY (COLD VAPOR) IN WATER								
Mercury (Hg)	**< 0.05**	ug/L		0.05	1	EPA 245.1	03/07/2013 13:08	AGIBBS

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13020436

Site: FIELD BLANK

Sample #: 2013004580

Collection Date: 04-Mar-13 2:10 PM

Matrix: GW_RCRA

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
TOTAL EXTRACTABLE METALS BY ICP								
Barium (Ba)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Boron (B)	**< 0.05**	mg/L		0.05	1	EPA 200.7	03/06/2013 11:17	MHH7131
Chromium (Cr)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Copper (Cu)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Iron (Fe)	**< 0.01**	mg/L		0.01	1	EPA 200.7	03/06/2013 11:17	MHH7131
Manganese (Mn)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Nickel (Ni)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Silver (Ag)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
Zinc (Zn)	**< 0.005**	mg/L		0.005	1	EPA 200.7	03/06/2013 11:17	MHH7131
TOTAL EXTRACTABLE METALS BY ICP-MS								
Arsenic (As)	**< 1**	ug/L		1	1	EPA 200.8	03/13/2013 14:28	DJSULL1
Cadmium (Cd)	**< 1**	ug/L		1	1	EPA 200.8	03/13/2013 14:28	DJSULL1
Lead (Pb)	**< 1**	ug/L		1	1	EPA 200.8	03/13/2013 14:28	DJSULL1
Selenium (Se)	**< 1**	ug/L		1	1	EPA 200.8	03/13/2013 14:28	DJSULL1

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy

For Detailed Instructions, see: http://dewww/essenv/coc/

Duke Energy Analytical Lab Services
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(980) 875-5245
Fax: (980) 875-5038

[19]Page 1 of 1

DISTRIBUTION
ORIGINAL to LAB, COPY to CLIENT

Revised 10/2/12

Analytical Laboratory Use Only

LIMS #	J13020436	MATRIX: GW-RCRA	Samples Originating From NC √ SC ___
Logged By: JT	Date & Time: 3-4-13 1556		SAMPLE PROGRAM: Ground Water √, NPDES ___, Drinking Water ___, UST ___, RCRA Waste ___
VENDOR		Cooler Temp (C): <6 C	
PO #		[15]Preserv.: 1=HCL 2=H_2SO_4 3=HNO_3 4=Ice 5=None	
MR #			

Customer must Complete

1)Project Name: *PLANT ALLEN - LEACHATE COLLECTION SYSTEM*		2)Phone No: 980-875-5257
3)Client: LDC / D. Scruggs / S. DeNeale / TSH		4)Fax No:875-4349
5)Business Unit: 20035	6)Process: BENVWS	7)Resp. To: AS00
8)Project ID:	9)Activity ID:	10)Mail Code: MGO3A3

Customer to complete all appropriate NON-SHADED areas.

Customer to complete appropriate columns to right

LAB USE ONLY [11]Lab ID	[13]Sample Description or ID	[14]Collection Information Date	Time	Signature	[17]TESTS	[18]Grab	NO3-N, Cl, F, SO4 (IC) 4		Metals Prep - 3030C (ICP - EPA 200.7) Ag, B, Ba, Cu, Cr, Fe, Mn, Ni, Zn (9); Hg (EPA 245.1) (1); (IMS - EPA 200.8) As, Cd, Pb, Se (4)		TDS 4		[20]Total # of Containers
2013004578	LEACHATE LCS - CELL 1	3/4/13	1240	VDC	5	X	1		1		1		3
2013004579	LEACHATE LCS - CELL 2	3/4/13	1220	VDC	5	X	1		1		1		3
2013004580	FIELD BLANK	3/4/13	1410	VDC	4	X	1		1				2

Customer to sign & date below

21)Relinquished By: [signature]	Date/Time: 3/4/13 1530	Accepted By: [signature]	Date/Time: 3-4-13 1530
Relinquished By	Date/Time	Accepted By:	Date/Time
Relinquished By	Date/Time	Accepted By:	Date/Time
23)Seal/Locked By	Date/Time	Sealed/Lock Opened By	Date/Time

24)Comments: Use indicated or comparable methods

Customer, please indicate important desired turnaround

[22]Requested Turnaround

14 Days √
*7 Days ___
*48 Hr ___
*Other ___
* Add. Cost Will Apply

Attachment 2

Allen Retired Ash Basin (RAB) Ash Landfill

Semi-Annual Monitoring Event

Leachate Field Results

March 4, 2013

ALLEN STEAM STATION
LEACHATE COLLECTION SYSTEM
GROUNDWATER MONITORING FIELD DATA

DATE	WELL NUMBER	WELL DEPTH (feet)	DEPTH TO WATER (feet)	ODOR	WELL VOL (gal)	EVAC VOL (gal)	COMP EVAC (yes/no)	TEMPERATURE (deg C)	pH (units)	SPEC COND (umho/cm)	TURBIDITY (ntu)
3/4/2013	LCS - CELL 1	N/A	N/A	N/A	N/A	2.00	N/A	16.17	3.87	2901	3.3
3/4/2013	LCS - CELL 2	N/A	N/A	N/A	N/A	2.00	N/A	13.98	3.78	644	2.9